



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	20/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Justice Sanjiv Khanna sworn in as the _____ Chief Justice of India on 11 November 2024.

- Ans**
- ☒ 1. 51st
 - ☐ 2. 49th
 - ☐ 3. 52nd
 - ☐ 4. 50th

Q.2 Starting from rest, a car is moving with a uniform acceleration of 0.5 m/s^2 . The velocity of the car after 20 s is:

- Ans**
- ☐ 1. 15 m/s
 - ☐ 2. 0 m/s
 - ☐ 3. 5 m/s
 - ☒ 4. 10 m/s

Q.3 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 117 :: 15 : Y

- Ans**
- ☐ 1. X = 7, Y = 193
 - ☒ 2. X = 9, Y = 195
 - ☐ 3. X = 9, Y = 193
 - ☐ 4. X = 7, Y = 195

Q.4 Which of the following events is a consequence of atmospheric refraction?

- Ans**
- ☐ 1. Image formation by plain mirrors
 - ☐ 2. Rainbow formation
 - ☒ 3. Advance sunrise and delayed sunset
 - ☐ 4. Curved mirrors to form enlarged image of an object

Q.5 Which of the following is an example of a sol?

- Ans**
- ☐ 1. Foam
 - ☒ 2. Milk of magnesia
 - ☐ 3. Rubber
 - ☐ 4. Face cream

Q.6 In a certain code language, 'Pay The Tax' is written as 'Gi Si Di', 'File Tax Return' is written as 'Ri Zi Si' and 'Keep The Tax File' is written as 'Qi Si Gi Zi'. How is 'File' coded in the given language?

- Ans**
- ☐ 1. Gi
 - ☐ 2. Si
 - ☒ 3. Zi
 - ☐ 4. Qi

Q.7 Which functions both as a passageway for intracellular transport and as a manufacturing surface?

- Ans**
- ☒ 1. Endoplasmic reticulum
 - ☐ 2. Ribosome
 - ☐ 3. Plastids
 - ☐ 4. Mitochondria

Q.8 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some cushions are bells.

All cushions are machines.

Conclusions:

(I) All machines are cushions.

(II) Some bells are machines.

- Ans**
- ☒ 1. Only conclusion (II) follows
 - ☐ 2. Both conclusions (I) and (II) follow
 - ☐ 3. Only conclusion (I) follows
 - ☐ 4. Neither conclusion (I) nor (II) follows

Q.9 Nayan can do a piece of work in 25 days. Tarun is 25% more efficient than Nayan. The number of days taken by Tarun to do the same piece of work is:

- Ans**
- ☐ 1. 16
 - ☐ 2. 25
 - ☐ 3. 15
 - ☒ 4. 20

Q.10 Select the correct option related to the function regulated by ovaries.

- Ans**
- ☐ 1. Stimulates pituitary glands
 - ☐ 2. Stimulates growth in all organs
 - ☐ 3. Regulates metabolism
 - ☒ 4. Menstrual cycle

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Q.11 Seven people, A, B, D, L, X, Y and Z, are sitting in a row, facing north. Only Z sits to the right of D. Only three people sit to the left of A. Only three people sit between D and L. Y sits at some place to the left of X but at some place to the right of B. How many people sit between B and X?

- Ans**
- ☐ 1. One
 - ☐ 2. Two
 - ☒ 3. Three
 - ☐ 4. Four

Q.12 What is the function of growth hormones?

- Ans**
- ☐ 1. It regulates metabolism for body growth.
 - ☐ 2. It stimulates development of female sex organs.
 - ☐ 3. It regulates blood sugar level.
 - ☒ 4. It stimulates growth in all organs.

Q.13 Which school in Kerala in 2024 made history by introducing India's first AI-powered teacher, 'Iris'?

- Ans**
- ☐ 1. Sacred Heart School
 - ☒ 2. KTCT Higher Secondary School
 - ☐ 3. Loyola School
 - ☐ 4. Chinmaya Vidyalaya

Q.14 Find the number of sides in a regular polygon if its each interior angle is 165° .

- Ans**
- ☒ 1. 24
 - ☐ 2. 18
 - ☐ 3. 25
 - ☐ 4. 20

Q.15 In electrolytic refining process, on passing the current impurities settle down, those impurities are known as _____.

- Ans**
- ☐ 1. electrolytic mud
 - ☐ 2. gangue
 - ☐ 3. cathode mud
 - ☒ 4. anode mud

Q.16 A sum of money is distributed among four people A, B, C and D in the ratio 4 : 7 : 9 : 3. If C gets ₹800 more than B, then find the amount that D gets.

- Ans**
- ☐ 1. ₹1,000
 - ☐ 2. ₹1,400
 - ☒ 3. ₹1,200
 - ☐ 4. ₹1,500

Q.17 With which of the following does the hydrophilic end of soaps react?

- Ans**
- ☐ 1. Both water and oil
 - ☐ 2. Hydrocarbon
 - ☒ 3. Water
 - ☐ 4. Oil

Q.18 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All shirts are pants.

All pants are ties.

No ties are jeans.

Conclusions:

(I) No jeans are pants.

(II) All pants are shirts.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☐ 2. Both conclusions (I) and (II) follow.
 - ☐ 3. Neither conclusion (I) nor (II) follows.
 - ☒ 4. Only conclusion (I) follows.

Q.19 According to Rutherford's model of an atom, where is most of the mass of the atom located?

- Ans**
- ☐ 1. In the shells of electrons
 - ☒ 2. In the nucleus
 - ☐ 3. It is equally distributed throughout
 - ☐ 4. In the electron cloud

Q.20 Doubly-charged helium ions are also known as which of the following?

- Ans**
- ☐ 1. X-rays
 - ☐ 2. Gamma particles
 - ☒ 3. Alpha particles
 - ☐ 4. Beta particles

Q.21 If a man bought 6 pencils for ₹5, and sold them at 5 pencils for ₹6, then the gain percentage is _____.

- Ans**
- ☐ 1. 42%
 - ☐ 2. 41%
 - ☐ 3. 43%
 - ☒ 4. 44%

Q.22 Which of the following is the correct order of movement of food in the digestive tract?

- Ans**
- ☐ 1. Mouth - Stomach - Oesophagus
 - ☒ 2. Mouth - Oesophagus - Stomach
 - ☐ 3. Oesophagus - Stomach - Mouth
 - ☐ 4. Oesophagus - Mouth - Stomach

Q.23 Two pipes X and Y can fill a cistern in 21 hours and 24 hours, respectively. The pipes are opened simultaneously, and it is found that due to a leakage in the bottom it takes 48 minutes more to fill the cistern. When the cistern is full, in how much time will the leak empty it if no pipe is open during that time?

- Ans**
- ☐ 1. 120 hours
 - ☐ 2. 130 hours
 - ☒ 3. 168 hours
 - ☐ 4. 144 hours

Q.24 Rambabu is under uniform motion, and he has covered 25 m in 5 s. How much distance can he cover in 3 s?

- Ans**
- ☐ 1. 20 m
 - ☐ 2. 5 m
 - ☒ 3. 15 m
 - ☐ 4. 10 m

Q.25 Who is the author of 'A Game of Two Halves: The Story of the Golden Era of Indian Club Football'?

- Ans**
- ☒ 1. Rishav Ray
 - ☐ 2. Anand Patel
 - ☐ 3. Sunil Chetri
 - ☐ 4. Krishna Rao

Q.26 Consider the magnetic field produced by a current carrying solenoid. Which of the following statements is INCORRECT?

- Ans**
- ☐ 1. The strength of the magnetic field increases if we increase the number of turns.
 - ☐ 2. The solenoid in a way acts similar to the bar magnet.
 - ☐ 3. The magnetic field near the centre of long solenoid is nearly constant.
 - ☒ 4. The magnitude of the magnetic field outside but close to the solenoid is extremely large.

Q.27 The pair of equations $3x - 5y = 7$ and $-6x + 10y = 7$ have:

- Ans**
- ☐ 1. a unique solution
 - ☐ 2. infinitely many solutions
 - ☒ 3. no solution
 - ☐ 4. two solutions

Q.28 A rectangle with perimeter 50 cm has its sides in the ratio 1 : 4. What is the perimeter of a square whose area is the same as that of the rectangle ?

- Ans**
- ☐ 1. 45 cm
 - ☒ 2. 40 cm
 - ☐ 3. 50 cm
 - ☐ 4. 36 cm

Q.29 Which of the following is a prime number?

- Ans**
- ☐ 1. 437
 - ☐ 2. 161
 - ☐ 3. 221
 - ☒ 4. 373

Q.30 The value of $\frac{9}{10} \div \left(\frac{4}{5} + \frac{1}{10}\right)$ is:

- Ans**
- ☒ 1. 1
 - ☐ 2. $\frac{81}{100}$
 - ☐ 3. $\frac{1}{10}$
 - ☐ 4. 0

Q.31 _____ won the 42nd Ranji Trophy title, by defeating Vidarbha, in the 2023-2024 season.

- Ans**
- ☐ 1. Delhi
 - ☒ 2. Mumbai
 - ☐ 3. Gujarat
 - ☐ 4. Karnataka

Q.32 The reaction given below is an example which of the following types of reaction?

Potassium bromide(aq) + Barium iodide(aq) → Potassium iodide(aq) + Barium bromide(s)

- Ans**
- ☐ 1. Displacement reaction
 - ☐ 2. Combination reaction
 - ☒ 3. Double displacement reaction
 - ☐ 4. Decomposition reaction

Q.33 The splitting of the two cells during division can take place in any plane. Such patterns of fission have been observed in which protozoan?

- Ans**
- ☐ 1. Leishmania
 - ☒ 2. Amoeba
 - ☐ 3. Hydra
 - ☐ 4. Plasmodium

Q.34 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

433, 414, 376, 319, 243, ?

- Ans**
- ☒ 1. 148
 - ☐ 2. 162
 - ☐ 3. 124
 - ☐ 4. 136

Q.35 Which of the following is correct about trophic levels in a food chain?

- Ans**
- ☐ 1. The heterotrophs fix up the solar energy and make it available for herbivores or other consumers.
 - ☐ 2. The Larger carnivores or the tertiary consumers form the third trophic level.
 - ☒ 3. The autotrophs or the producers are at the first trophic level.
 - ☐ 4. The herbivores or the secondary consumers come at the second level.

Q.36 Subtracting 90% of X from X is equivalent to multiplying X by:

- Ans**
- ☐ 1. 0.8
 - ☐ 2. 0.5
 - ☒ 3. 0.1
 - ☐ 4. 0.9

Q.37 What does the subscript in a chemical formula represent?

- Ans**
- ☐ 1. The mass of the compound
 - ☐ 2. The charge of the ion
 - ☐ 3. The oxidation state of the element
 - ☒ 4. The number of atoms of each element in a molecule

Q.38 What price should a shopkeeper mark on an article, which costs him ₹153, to gain 20% after allowing a discount of 15%?

- Ans**
- ☐ 1. ₹184
 - ☐ 2. ₹162
 - ☐ 3. ₹224
 - ☒ 4. ₹216

Q.39 A woman has invested ₹85,000 at a rate of $7\frac{1}{2}\%$ per annum simple interest for 4 years. Find the amount that she will receive after 4 years.

- Ans**
- ☐ 1. ₹69,600
 - ☐ 2. ₹75,000
 - ☐ 3. ₹1,08,750
 - ☒ 4. ₹1,10,500

Q.40 If a train travelling at a speed of 90 km/h crosses a pole in 5 sec, then the length of train is:

- Ans**
- ☐ 1. 140 m
 - ☐ 2. 152 m
 - ☐ 3. 104 m
 - ☒ 4. 125 m





Q.41 Where was the maiden flight-test of the Long Range Land Attack Cruise Missile (LRLACM) conducted by DRDO?

- Ans**
- ☐ 1. Missile Test Facility, Bengaluru
 - ☐ 2. Defence Research Facility, Hyderabad
 - ☐ 3. Indian Space Research Centre, Thiruvananthapuram
 - ☒ 4. Integrated Test Range (ITR), Chandipur, Odisha





Q.42 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 88 :: 12 : Y





- Ans**
-  1. X = 14, Y = 132
 -  2. X = 14, Y = 176
 -  3. X = 8, Y = 152
 -  4. X = 8, Y = 132

Q.43 When plant cells lose water by osmosis, the contents shrink away from the cell wall; this process is known as _____.

- Ans**
-  1. Passive Transport
 -  2. Active Transport
 -  3. Plasmolysis
 -  4. Diffusion

Q.44 Which of the following is/are correct regarding the components of an ecosystem?

- A. Living organisms - Abiotic Component
- B. Soil - Biotic component
- C. Minerals - Abiotic component

- Ans**
-  1. Only B
 -  2. Both A and C
 -  3. Only C
 -  4. A, B and C

Q.45 The average of the first 10 prime numbers is:

- Ans**
-  1. 10
 -  2. 12.5
 -  3. 15.5
 -  4. 12.9

Q.46 What will come in the place of '?' in the following equation, if '+' and '×' are interchanged?

$$8 + 7 \div 36 \times 9 - 12 = ?$$

- Ans**
-  1. 25
 -  2. 24
 -  3. 19
 -  4. 21

Q.47 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☒ 1. DA-CF
 - ☒ 2. JG-IM
 - ☒ 3. GD-FI
 - ☒ 4. NK-MP

Q.48 Which of the following is the characteristic of a liquid?

- Ans**
- ☒ 1. It has fixed shape and volume.
 - ☒ 2. It is highly compressible.
 - ☒ 3. It has fixed volume but not fixed shape.
 - ☒ 4. It is hard.

Q.49 If $10000x = (9982)^2 - (18)^2$, then the value of x is:

- Ans**
- ☒ 1. 9809
 - ☒ 2. 9886
 - ☒ 3. 9976
 - ☒ 4. 9964

Q.50 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. AGH
 - ☒ 2. ZBD
 - ☒ 3. QSU
 - ☒ 4. MOQ

Q.51 In September 2024, which bank launched Aditi, a GenAI powered Virtual Relationship Manager that aims to enhance the digital customer service experience?

- Ans**
- ☒ 1. State Bank of India
 - ☒ 2. Bank of Baroda
 - ☒ 3. Canara Bank
 - ☒ 4. HDFC Bank

Q.52 The average of all natural numbers between 12 and 39 which are divisible by 5 is _____.

- Ans**
- ☒ 1. 21
 - ☒ 2. 28
 - ☒ 3. 25
 - ☒ 4. 25.5

Q.53 Simmi's mother made 8ltr 785 ml of soup for the party. If the soup was distributed equally among 35 people, how much soup was given to each person?

- Ans**
- ☒ 1. 251 ml
 - ☒ 2. 255 ml
 - ☒ 3. 250 ml
 - ☒ 4. 254 ml

Q.54 In order to pass in an examination, a student is required to get 780 marks out of the maximum aggregate marks. Sonal got 728 marks and was declared failed by 5%. What is the maximum aggregate marks that a student can get in the examination?

- Ans**
- ☐ 1. 1140
 - ☐ 2. 1100
 - ☐ 3. 1000
 - ☒ 4. 1040

Q.55 Select the correct pair from the following options.

- Ans**
- ☐ 1. Velocity does not change with time - Non-uniform motion
 - ☒ 2. Change in velocity per unit time - Acceleration
 - ☐ 3. Motion of a freely falling body - Non-uniform acceleration
 - ☐ 4. Velocity varies with time - Uniform motion

Q.56 The United Nations 2024 Multidimensional Poverty Index (MPI) highlights that India has the highest number of people in multidimensional poverty globally, with _____ million affected.

- Ans**
- ☐ 1. 245
 - ☐ 2. 225
 - ☐ 3. 214
 - ☒ 4. 234

Q.57 If $40 : 35 :: 35 : k$, find the value of $k - 1$.

- Ans**
- ☒ 1. $\frac{237}{8}$
 - ☐ 2. $\frac{245}{8}$
 - ☐ 3. $\frac{49}{8}$
 - ☐ 4. $\frac{49}{16}$

Q.58 In a certain code language,

$A + B$ means 'A is the brother of B',

$A - B$ means 'A is the wife of B',

$A \times B$ means 'A is the father of B',

and $A \div B$ means 'A is the sister of B'.

How is P related to T if ' $P \times Q \div R - S \times T$ '?

- Ans**
- ☐ 1. Father's father
 - ☐ 2. Mother's brother
 - ☒ 3. Mother's father
 - ☐ 4. Father's brother

Q.59 Which of the following is an example of suspension?

- Ans**
- ☐ 1. Oil in water
 - ☐ 2. Solution of sugar in water
 - ☒ 3. Chalk powder in water
 - ☐ 4. Few drops of milk in water

Q.60 The sum of ages of Amit and Amita is 15 years more than the sum of ages of Amita and Amrita. How many years younger is Amrita as compared to Amit?

- Ans**
- ☐ 1. 12
 - ☐ 2. 13
 - ☐ 3. 19
 - ☒ 4. 15

Q.61 In electrolytic refining procedure, the cathode is made up of:

- Ans**
- ☐ 1. alloy metal
 - ☐ 2. impure metal
 - ☐ 3. metal salt
 - ☒ 4. pure metal

Q.62 Which of the following is the olfactory indicator to check the acidic or basic nature of the substance?

- Ans**
- ☐ 1. Phenolphthalein
 - ☒ 2. Vanilla essence
 - ☐ 3. Red litmus
 - ☐ 4. Methyl orange

Q.63 What is the angle between the two lateral faces of a triangular glass prism called?

- Ans**
- ☐ 1. Inclination angle
 - ☐ 2. Angle of deviation
 - ☐ 3. Base angle
 - ☒ 4. Angle of prism

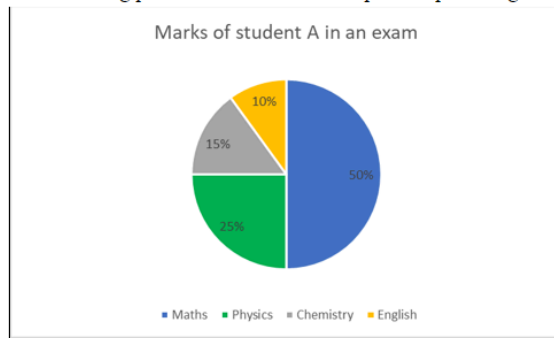
Q.64 If 'A' stands for '+', 'B' stands for '−', 'C' stands for '÷' and 'D' stands for '×', what will come in place of the question mark '?' in the following equation?

$$18 \text{ C } 6 \text{ D } 18 \text{ A } 6 \text{ B } 18 = ?$$

- Ans**
- ☐ 1. 62
 - ☐ 2. 7
 - ☒ 3. 42
 - ☐ 4. 67

Q.65 Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of the percentage marks of Student A in an exam.



If the total marks scored by Student A are 260, then what are the total marks scored by the student in Physics and English in the exam?

- Ans**
- ☒ 1. 85
 - ☒ 2. 91
 - ☒ 3. 95
 - ☒ 4. 87

Q.66 Find the area of a regular hexagon (in cm^2) with sides of length 6 cm.

- Ans**
- ☒ 1. 36
 - ☒ 2. $54\sqrt{3}$
 - ☒ 3. 18
 - ☒ 4. $5\sqrt{2}$

Q.67 Which of the following techniques is used to separate colloidal particles from the mixture?

- Ans**
- ☒ 1. Filtration
 - ☒ 2. Evaporation
 - ☒ 3. Distillation
 - ☒ 4. Centrifugation

Q.68 In a certain code language, 'cant hurt me' is written as 'yk ja cm' and 'did he hurt' is coded as 'bt yo ja'. How is 'hurt' coded in the given language?

- Ans**
- ☒ 1. pr
 - ☒ 2. qe
 - ☒ 3. ja
 - ☒ 4. cr

Q.69 When we are standing in a bus facing towards the driver and the bus begins to move straight suddenly, we tend to fall:

- Ans**
- ☒ 1. backwards
 - ☒ 2. left side
 - ☒ 3. right side
 - ☒ 4. forward

Q.70 What is the speed v of an athlete, if the athlete takes t seconds to go once around a circular path of radius r ?

- Ans**
- ✓ 1. $v = 2\pi r/t$
 - ✗ 2. $v = 2\text{ m/s}$
 - ✗ 3. $v = 0$
 - ✗ 4. $v = \pi r^2 /t$

Q.71 Which of the options provides the correct explanation for the following statement?

Sweating cools down your body on a hot day.

- Ans**
- ✗ 1. Sweating increases the body's temperature.
 - ✗ 2. Sweating increases blood circulation and cools the body.
 - ✗ 3. The given statement is wrong.

✓ 4.

Sweating causes rapid evaporation, which absorbs heat from the body surface and cools the body.

Q.72 What is the displacement accomplished by an object if it moves 15 m to the right from point 'A' and then moves 15 m to the opposite direction to reach the same point 'A'?

- Ans**
- ✓ 1. 0 m
 - ✗ 2. 15 m
 - ✗ 3. 30 m
 - ✗ 4. 7.5 m

Q.73 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 7 0 5 5 0 9 5 5 9 8 2 9 1 2 8 6 6 9 8 6 9 4 7 2 1 0 1 2 5 (Right)

What is the sum of the 10th digit from the left and the 4th digit from the right?

- Ans**
- ✗ 1. 10
 - ✓ 2. 9
 - ✗ 3. 8
 - ✗ 4. 11

Q.74 If a car travelling along a straight road increases its speed by unequal amounts in equal intervals of time, then the car is said to be moving with:

- Ans**
- ✓ 1. non-uniform acceleration
 - ✗ 2. uniform velocity
 - ✗ 3. uniform speed
 - ✗ 4. uniform acceleration

Q.75 Shahid starts from Point A and drives 20 km towards West. He then takes a left turn, drives 20 km, turns left and drives 15 km. He then takes a left turn and drives 12 km. He takes a final right turn, drives 5 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ✗ 1. 10 km towards South
 - ✗ 2. 5 km towards North
 - ✗ 3. 8 km towards East
 - ✓ 4. 8 km towards North

Q.76 PLSO is related to VRYU in a certain way based on the English alphabetical order. In the same way, MIPL is related to SOVR. To which of the following options is IELH related, following the same logic?

- Ans**
- ✓ 1. OKRN
 - ✗ 2. KONR
 - ✗ 3. KORN
 - ✗ 4. OKNR

Q.77 TPVS is related to LHNK in a certain way based on the English alphabetical order. In the same way, WSYV is related to OKQN. To which of the following options is RNTQ related, following the same logic?

- Ans**
- ✓ 1. JFLI
 - ✗ 2. FJLI
 - ✗ 3. FJIL
 - ✗ 4. JFIL

Q.78 Evaluate the given expression.

$$6 + 6 \times 6 - 6$$

- Ans**
- ✓ 1. 36
 - ✗ 2. 42
 - ✗ 3. 0
 - ✗ 4. 66

Q.79 $\sec^2 A + (\operatorname{cosec}^2 A - 1) + (1 + \tan^2 A) - \cot^2 A = \underline{\hspace{2cm}}$.

- Ans**
- ✗ 1. 0
 - ✗ 2. 1
 - ✓ 3. $2\sec^2 A$
 - ✗ 4. $\cot^2 A$

Q.80 Select the greatest number from the given numbers.

$$4^{50}, 2^{100}, 16^{25}$$

- Ans**
- ✗ 1. 4^{50}
 - ✓ 2. All are equal
 - ✗ 3. 2^{100}
 - ✗ 4. 16^{25}

Q.81 Which reproductive part(s) is/are essential for fertilisation?

- Ans**
- ✓ 1. Pollen grain and ovule
 - ✗ 2. Sepal
 - ✗ 3. Thalamus
 - ✗ 4. Petals

Q.82 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Even though Company X is the biggest exporter of wheat in the country, it is not among one of the biggest profit earning companies in the Country.

Reasons:

I. Trading in other materials other than wheat, like iron, is much more profitable

II. Company X has heavy miscellaneous expenditure

- Ans**
- ☒ 1. Only I is a possible reason.
 - ☒ 2. Neither I nor II is a possible reason.
 - ☒ 3. Both I and II are possible reasons.
 - ☒ 4. Only II is a possible reason.

Q.83 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

JLO, KMP, LNQ, MOR, ?

- Ans**
- ☒ 1. PNS
 - ☒ 2. PSN
 - ☒ 3. NSP
 - ☒ 4. NPS

Q.84 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only two people sit between A and M when counted from the right of A. Only three people sit between P and L when counted from the right of L. M sits to the immediate right of L. E sits to the immediate right of G. Who sits fourth to the right of B?

- Ans**
- ☒ 1. P
 - ☒ 2. G
 - ☒ 3. M
 - ☒ 4. E

Q.85 If lysosomes are also known as the 'suicide bags' of the cell, then which of the following is the powerhouse of the cell?

- Ans**
- ☒ 1. Vacuoles
 - ☒ 2. Mitochondria
 - ☒ 3. Plastids
 - ☒ 4. Endoplasmic reticulum

Q.86 _____, conferred the prestigious Sangeet Natak Akademi Awards (Akademi Puraskar) for the years 2022 and 2023 to 94 eminent artists.

- Ans**
- ☒ 1. Prime Minister of India, Shri. Narendra Modi
 - ☒ 2. President of India, Smt. Droupadi Murmu
 - ☒ 3. Home Minister of India, Shri. Amit Shah
 - ☒ 4. Defense Minister of India, Shri. Rajnath Singh

Q.87 What is the primary objective of the partnership between the British Council and Guidance Tamil Nadu?

- Ans**
- ☒ 1. To empower the creative economy and cultural industries of Tamil Nadu
 - ☒ 2. To support traditional agriculture in Tamil Nadu
 - ☒ 3. To promote tourism in Tamil Nadu
 - ☒ 4. To foster international trade agreements

Q.88 In a row of people all facing North, Shreya is 11th from the left end. Ravi is 12th from the left end. Ravi is exactly between Shreya and Rahul. If Rahul is 15th from the right end of the line, how many people are there in the row?

- Ans**
- ☐ 1. 29
 - ☐ 2. 45
 - ☐ 3. 28
 - ☒ 4. 27

Q.89 Which of the following synthetic chemicals was responsible for the sharp drop in the amount of ozone in the atmosphere in the 1980s?

- Ans**
- ☐ 1. Iodofluorocarbons
 - ☐ 2. Iodobromocarbons
 - ☐ 3. Chloriodocarbons
 - ☒ 4. Chlorofluorocarbons

Q.90 In what duration will a sum of money double itself at 20% per annum simple interest?

- Ans**
- ☐ 1. 8 years
 - ☐ 2. 12 years
 - ☐ 3. 10 years
 - ☒ 4. 5 years

Q.91 A solid iron rod is placed on the surface of the water. What would happen if the upthrust of water on the iron rod were greater than the downward force acting on it?

- Ans**
- ☒ 1. The iron rod would float on water surface.
 - ☐ 2. The iron rod would move downwards.
 - ☐ 3. The iron rod would sink slowly.
 - ☐ 4. The iron rod would sink faster.

Q.92 A uniform magnetic field is represented by:

- Ans**
- ☐ 1. concentric circular lines
 - ☐ 2. elliptical lines
 - ☒ 3. parallel and equidistant straight lines
 - ☐ 4. parallel but irregular straight lines

Q.93 In which district of Kerala did a major landslide occur in July 2024?

- Ans**
- ☒ 1. Wayanad
 - ☐ 2. Idukki
 - ☐ 3. Malappuram
 - ☐ 4. Thrissur

Q.94 The flexibility in plants is due to which permanent tissue that allows bending of various parts of a plant like tendrils and stems of climbers without breaking?

- Ans**
- ☐ 1. Chlorenchyma
 - ☒ 2. Collenchyma
 - ☐ 3. Aerenchyma
 - ☐ 4. Parenchyma

Q.95 All of the following are examples of connective tissue, EXCEPT:

- Ans**
- ☒ 1. blood
 - ☒ 2. tracheid
 - ☒ 3. cartilage
 - ☒ 4. bone

Q.96 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

YEF, VFI, SGL, PHO, ?

- Ans**
- ☒ 1. NMR
 - ☒ 2. MIR
 - ☒ 3. NMQ
 - ☒ 4. IMR

Q.97 When the level of growth hormone is low, which releases growth hormone releasing factor and stimulates the pituitary gland to release growth hormone?

- Ans**
- ☒ 1. Pancreas
 - ☒ 2. Hypothalamus
 - ☒ 3. Thyroid gland
 - ☒ 4. Adrenal gland

Q.98 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 1 2 8 2 4 1 7 6 1 7 3 2 9 7 5 1 7 8 6 8 2 4 3 9 4 6 6 2 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 4
 - ☒ 2. 1
 - ☒ 3. 2
 - ☒ 4. 3

Q.99 Which of the following statements of force is/are correct?

- A. Weight is a force that acts vertically downward on an object.
- B. Thrust is the force acting on an object perpendicular to the surface.

- Ans**
- ☒ 1. 'A' is correct and 'B' is incorrect.
 - ☒ 2. Both 'A' and 'B' are incorrect.
 - ☒ 3. Both 'A' and 'B' are correct.
 - ☒ 4. 'A' is incorrect and 'B' is correct.

Q.100 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 2 7 5 3 1 5 8 7 7 4 0 6 3 1 2 1 9 2 2 6 5 0 8 6 2 7 5 3 9 3 (Right)

What is the sum of the 1st digit from the left and the 15th digit from the right?

Ans  1. 0

 2. 6

 3. 3

 4. 5

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	20/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 What will be the effect of surface area on the evaporation process?

- Ans
- ☒ 1. Evaporation decreases with increase in surface area.
 - ☒ 2. Evaporation increases with decrease in surface area.
 - ☒ 3. Evaporation increases with increase in surface area.
 - ☒ 4. No effect of surface area on evaporation process.

Q.2 Who was the first to use a glass prism to obtain a spectrum of sunlight?

- Ans
- ☒ 1. Isaac Newton
 - ☒ 2. Fermi
 - ☒ 3. Einstein
 - ☒ 4. Edison

Q.3 The sum of two rational numbers is -4 . If one of them is $-\frac{13}{25}$, then the other is:

- Ans
- ☒ 1. $-\frac{87}{25}$
 - ☒ 2. $-\frac{67}{25}$
 - ☒ 3. $-\frac{37}{25}$
 - ☒ 4. $-\frac{47}{25}$

Q.4 In a circuit, a 10 volt battery and three resistors $R_1 = 2\ \Omega$, $R_2 = 3\ \Omega$, and $R_3 = 6\ \Omega$ are connected in parallel to each other. Which of the following is the correct value of effective resistance R_e and current I flowing through the circuit?

- Ans**
- ☐ 1. $R_e = 2\ \Omega, I = 1\ \text{A}$
 - ☐ 2. $R_e = 1\ \Omega, I = 1\ \text{A}$
 - ☐ 3. $R_e = 2\ \Omega, I = 10\ \text{A}$
 - ☒ 4. $R_e = 1\ \Omega, I = 10\ \text{A}$

Q.5 Which of the following connects the kidney with the urinary bladder?

- Ans**
- ☐ 1. Pelvis
 - ☐ 2. Penis
 - ☒ 3. Ureter
 - ☐ 4. Urethra

Q.6 What is the chemical composition of washing soda?

- Ans**
- ☐ 1. $\text{Al}_2(\text{CO}_3)_3 \cdot 10\text{H}_2\text{O}$
 - ☐ 2. $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$
 - ☐ 3. $\text{Al}_2(\text{SO}_4)_3 \cdot 10\text{H}_2\text{O}$
 - ☒ 4. $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$

Q.7 John, Kate, Lisa, Mary, Neil and Omar are sitting around a circular table facing the centre. John sits second to left of Kate. Lisa sits third to right of Kate. Mary sits to the immediate left of Lisa. Neil sits to the immediate right of Kate.

How many people sit between Omar and Mary when counted from the right of Omar ?

- Ans**
- ☐ 1. One
 - ☐ 2. Three
 - ☐ 3. Zero
 - ☒ 4. Two

Q.8 In which of the following organisms is fragmentation common?

- Ans**
- ☐ 1. Only in few unicellular organisms
 - ☒ 2. Only a few multicellular organisms
 - ☐ 3. In all multicellular organisms
 - ☐ 4. In all unicellular organisms

Q.9 Which of the following schemes was introduced by the Ministry of Culture, Government of India, to provide a platform for the artistes and artisans of the Northeast region to showcase their rich cultural heritage?

- Ans**
- ☐ 1. The Penta - Festival of the Northeast
 - ☐ 2. The Quadra - Festival of the Northeast
 - ☐ 3. The Trident - Festival of the Northeast
 - ☒ 4. The Octave - Festival of the Northeast

Q.10 Which of the following grows rapidly and ripens to form a fruit?

- Ans**
- ☐ 1. Anther
 - ☐ 2. Stigma
 - ☒ 3. Ovary
 - ☐ 4. Pollen tube

Q.11 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All oranges are mangoes.

No mango is a banana.

Conclusions:

(I) No banana is a mango.

(II) All mangoes are oranges.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☐ 2. Only conclusion II follows
 - ☒ 3. Only conclusion I follows
 - ☐ 4. Neither conclusion I nor II follows

Q.12 Which of the following metals reacts only with steam NOT with cold or hot water?

- Ans**
- ☒ 1. Aluminium
 - ☐ 2. Magnesium
 - ☐ 3. Potassium
 - ☐ 4. Sodium

Q.13 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. Only 1 person sits between T and S when counted from the left of S. Only 2 people sit between V and R when counted from the right of R. T and Q are immediate neighbours of P. S sits immediately to the left of U. How many people sit between Q and R when counted from the left of Q?

- Ans**
- ☐ 1. 2
 - ☒ 2. 3
 - ☐ 3. 1
 - ☐ 4. 4

Q.14 The main thinking part of the brain that receives sensory impulses from various receptors is the:

- Ans**
- ☐ 1. hind-brain
 - ☒ 2. fore-brain
 - ☐ 3. spinal cord
 - ☐ 4. mid-brain

Q.15 NJQO is related to HDKI in a certain way based on the English alphabetical order. In the same way, SOVT is related to MIPN. To which of the following options is PLSQ related, following the same logic?

- Ans**
- ☐ 1. FJMK
 - ☐ 2. JFKM
 - ☐ 3. FJKM
 - ☒ 4. JFMK

Q.16 Select the correct option related to the function of villi in the small intestine.

- Ans**
- ☐ 1. Protection from acid
 - ☐ 2. Secretion of minerals
 - ☒ 3. Increases absorptive surface area
 - ☐ 4. Helps in excretion

Q.17 Who developed the planetary model of the atom with electrons orbiting the nucleus in discrete energy levels?

- Ans**
- ☐ 1. Ernest Rutherford
 - ☐ 2. J.J. Thomson (Joseph John Thomson)
 - ☒ 3. Niels Bohr
 - ☐ 4. Dmitri Mendeleev

Q.18 In 2023, the Total Gross Enrollment Ratio (GER) for elementary schools in India stood at _____.

- Ans**
- ☐ 1. 122.1%
 - ☐ 2. 110.2%
 - ☐ 3. 111.7%
 - ☒ 4. 100.1%

Q.19 Which organism uses regenerative cells for reproduction in the process of budding?

- Ans**
- ☐ 1. Amoeba
 - ☐ 2. Leishmania
 - ☐ 3. Yeast
 - ☒ 4. Hydra

Q.20 If the radius of sphere is decreased by 10 percent, then the volume of sphere will be decreased by what percentage?

- Ans**
- ☐ 1. 25.6%
 - ☐ 2. 32.5%
 - ☐ 3. 30.6%
 - ☒ 4. 27.1%

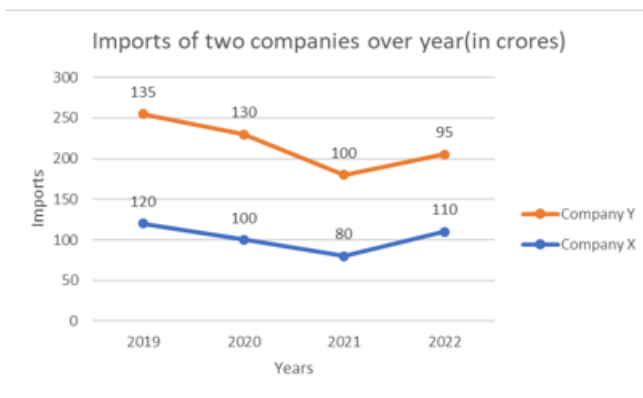
Q.21 The age of the father is three times the age of the son. If the age of the son is 15 years, then the sum of the age of father and son is:

- Ans**
- ☐ 1. 45 years
 - ☐ 2. 40 years
 - ☒ 3. 60 years
 - ☐ 4. 50 years

Q.22 Excluding stoppages, the speed of a train is 45 km/h and including stoppages, it is 36 km/h. How many minutes does the train stop per hour?

- Ans**
- ☐ 1. 11 min
 - ☐ 2. 10 min
 - ☐ 3. 15 min
 - ☒ 4. 12 min

Q.23 Study the following chart and answer the question that follows.



What is the difference in the imports by company X in the years 2019 and 2021?

- Ans**
- ☐ 1. 10 crore
 - ☐ 2. 15 crore
 - ☒ 3. 40 crore
 - ☐ 4. 20 crore

Q.24 Prakash starts from Point A and drives 30 km towards East. He then takes a right turn, drives 18 km, turns right and drives 17 km. He then takes a right turn and drives 9 km. He takes a final left turn, drives 13 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 10 km towards North
 - ☒ 2. 9 km towards North
 - ☐ 3. 9 km towards West
 - ☐ 4. 10 km towards East

Q.25 Which of the following will be the average velocity of the particle with initial velocity u and final velocity v in the given time interval?

- Ans**
- ☐ 1. $\frac{u - v}{2}$
 - ☐ 2. $u + v$
 - ☒ 3. $\frac{u + v}{2}$
 - ☐ 4. 0


Q.26 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.


JE-KF-LM


NI-OJ-PQ


- Ans**
- ☐ 1. OJ-PK-QS
 - ☐ 2. QL-RM-SU
 - ☒ 3. LG-MH-NO
 - ☐ 4. PK-QL-RT

Q.27 Which of the following reactions is NOT an example of oxidation?

Ans  1. $\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$

 2. $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$

 3. $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

 4. $2\text{Cu} + \text{O}_2 \rightarrow \text{CuO}$

Q.28 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only three boxes are kept below L. Only two boxes are kept between L and Z. Only A is kept immediately above B. X is kept at some place below Y and at some place above C.

Which box is kept at second position from the bottom?

Ans  1. Y


 2. X


 3. A


 4. C

Q.29 In order to pass in an examination, a student is required to get 975 marks out of the maximum aggregate marks. Priya got 870 marks and was declared failed by 7%. What is the maximum aggregate marks that a student can get in the examination?

Ans  1. 1000

 2. 1200

 3. 1500

 4. 1400

Q.30 How many key priorities are outlined in the Union Budget 2024-25 to achieve the objective of 'Viksit Bharat'?


Ans  1. Eight


 2. Ten


 3. Seven


 4. Nine

Q.31 Which of the following is an example of an object moving in uniform circular motion?

Ans  1. A bird flying in the sky


 2. A person walking on a sidewalk


 3. A satellite in a circular orbit around the earth.


 4. A car driving straight on a highway

Q.32 A bought an item for ₹384 and sold it for ₹480. B bought another item for ₹1,254 and sold it for ₹1,672. What is the ratio of the gain percentage of A to the gain percentage of B?

Ans  1. $\frac{15}{4}$

 2. $\frac{3}{4}$

 3. $\frac{15}{2}$

 4. $\frac{3}{2}$

Q.33 Which of the following substances is in solid form in the given reaction?

Sodium sulphate + barium chloride \rightarrow sodium chloride + barium sulphate

- Ans**
- ☐ 1. Barium chloride
 - ☒ 2. Barium sulphate
 - ☐ 3. Sodium sulphate
 - ☐ 4. Sodium chloride

Q.34 The ratio between the radius of the base and the height of a cylinder is 3 : 4. If its volume is 38808 cm^3 then, using $\pi = \frac{22}{7}$, find the diameter of the cylinder.

- Ans**
- ☐ 1. 21 cm
 - ☐ 2. 28 cm
 - ☐ 3. 14 cm
 - ☒ 4. 42 cm

Q.35 In a certain code language, 'gentle breeze rustles' is coded as 'jb eg lz', and 'breeze rustles softly' is coded as 'lz cw eg'. What is the code for 'softly' in the given code language?

- Ans**
- ☒ 1. cw
 - ☐ 2. eg
 - ☐ 3. lz
 - ☐ 4. jb

Q.36 A line segment is of length 5 cm 7 mm. Another line segment of length 9 cm 6 mm is joined to it in the same direction. The length of the combined line segment is:

- Ans**
- ☐ 1. 14 cm 3 mm
 - ☐ 2. 14 cm 6 mm
 - ☐ 3. 15 cm 7 mm
 - ☒ 4. 15 cm 3 mm

Q.37 In August 2024, Biochemist Govindarajan Padmanabhan was awarded which of the following awards?

- Ans**
- ☐ 1. Shanti Swarup Bhatnagar award
 - ☐ 2. Vigyan Yuva-Shanti Swarup Bhatnagar
 - ☐ 3. Vigyan Shri
 - ☒ 4. Vigyan Ratna Puraskar

Q.38 Which of the following metals is found in a free state in the earth's crust?

- Ans**
- ☐ 1. Aluminium
 - ☐ 2. Sodium
 - ☐ 3. Zinc
 - ☒ 4. Gold

Q.39 According to the reactivity series of metals, which metal pair is found in native state?

- Ans**
- ☐ 1. Calcium and magnesium
 - ☐ 2. Calcium and aluminium
 - ☒ 3. Gold and platinum
 - ☐ 4. Sodium and potassium

Q.40 What is the power of this combination of lens placed together when the power of the converging lens is 4.50 D and diverging lens is 3.00 D?

- Ans**
- ☒ 1. -13.5D
 - ☒ 2. +1.5D
 - ☒ 3. -1.5D
 - ☒ 4. -7.5D

Q.41 Express $0.\overline{512}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

- Ans**
- ☒ 1. $\frac{512}{999}$
 - ☒ 2. $\frac{52}{999}$
 - ☒ 3. $\frac{512}{99}$
 - ☒ 4. $\frac{502}{999}$

Q.42 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 1 4 3 0 2 2 4 6 3 7 2 4 8 4 0 3 3 4 2 4 0 7 0 0 4 9 2 9 9 0 (Right)

What is the sum of the 1st digit from the left and the 12th digit from the right?

- Ans**
- ☒ 1. 0
 - ☒ 2. 5
 - ☒ 3. 4
 - ☒ 4. 3

Q.43 If a machine does 500 J of work in 4 seconds, what is its power output?

- Ans**
- ☒ 1. 250 watt
 - ☒ 2. 2000 watt
 - ☒ 3. 125 watt
 - ☒ 4. 8000 watt


Q.44 Two pipes A and B together can fill a cistern in 4 hours. Had they been opened separately, then B would have taken 6 hours more than A to fill the cistern. How much time will be taken by A to fill the cistern separately?


- Ans**
- ☒ 1. 2 hours
 - ☒ 2. 6 hours
 - ☒ 3. 8 hours
 - ☒ 4. 1 hour


Q.45 Which of the following non-biodegradable substances may be inert and simply persist in the environment for a long time or may harm the various members of the eco-system?


- Ans**
- ☒ 1. Plastic made material
 - ☒ 2. Paper made material
 - ☒ 3. Clay made material
 - ☒ 4. Plant leaves made material

Q.46 If the volume of a cuboid is $3x^2 - 27$, then its possible dimensions are :


Ans  1. $3, x^2, -27x$


 2. $3, 3, 3$


 3. $3, x - 3, x + 3$


 4. $3, x^2, 27x$

Q.47 Which of the following best describes the relationship between distance, time and speed when a body is NOT accelerating?

Ans  1. $\text{speed} = \frac{\text{time}}{\text{distance}}$

 2. $\text{time} = \frac{\text{distance}}{\text{speed}}$

 3. $\text{distance} = \frac{\text{speed}}{\text{time}}$

 4. $\text{distance} = \frac{\text{time}}{\text{speed}}$


Q.48 Which of the following statements is/are NOT true about the principal focus of a spherical mirror?


i) It always lies on the principal axis.


ii) An incident ray passing through the focus after reflection becomes parallel to the principal axis.

iii) Principal focus is a point where all the incident rays after reflection from the mirror meet.


Ans  1. Only (i)


 2. Only (iii)


 3. Only (ii) and (iii)


 4. Only (i) and (ii)

Q.49 The atomic mass of an element is usually expressed in which of the following units?

Ans  1. Grams per mole (g/mol)

 2. Pounds

 3. Kilograms

 4. Atomic mass units (amu)

Q.50 In a certain code language,





$A + B$ means 'A is the sister of B',

$A - B$ means 'A is the husband of B',

$A \times B$ means 'A is the mother of B',





and $A \div B$ means 'A is the brother of B'.

How is P related to T if ' $P \times Q \div R - S \times T$ '?

- Ans**
-  1. Father's sister
 -  2. Father's mother
 -  3. Mother's mother
 -  4. Mother's sister

Q.51 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
-  1. RY – AS
 -  2. OV – XP
 -  3. NU – WO
 -  4. DI – PW

Q.52 What will come in the place of '?' in the following equation, if '+' and ' \times ' are interchanged?

$$54 \times 9 + 8 + 22 - 33 = ?$$

- Ans**
-  1. 41
 -  2. 37
 -  3. 39
 -  4. 42

Q.53 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

BEH, KNQ, TWZ, CFI, ?

- Ans**
-  1. LOR
 -  2. KNQ
 -  3. LNP
 -  4. KMO

Q.54 If 'J' stands for ' \times ', 'K' stands for '-', 'L' stands for '+' and 'M' stands for ' \div ', what will come in place of the question mark '?' in the following equation?

$$5 J 12 K 56 M 21 L 7 = ?$$

- Ans**
-  1. 17
 -  2. -13
 -  3. -3
 -  4. 7

Q.55 Kulhads are disposable cups made of clay. A little thought shows that making these kulhads on a large scale would result in:

- Ans**
- ☐ 1. Unhygienic of its use
 - ☒ 2. losing the fertile top-soil
 - ☐ 3. large remains collected in environment
 - ☐ 4. choking the sewage line

Q.56 The fourth proportional to 15, 10 and 12 is:

- Ans**
- ☐ 1. 12
 - ☐ 2. 10
 - ☐ 3. 6
 - ☒ 4. 8

Q.57 Two numbers are in the ratio 7 : 5. If their positive difference is 360, then the greater number between them is:

- Ans**
- ☒ 1. 1260
 - ☐ 2. 1040
 - ☐ 3. 900
 - ☐ 4. 1500

Q.58 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 3 0 3 5 7 7 9 4 4 8 3 5 0 2 0 9 5 1 9 2 8 5 4 6 3 2 8 1 5 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an even digit?

- Ans**
- ☐ 1. 4
 - ☐ 2. 3
 - ☒ 3. 2
 - ☐ 4. 0

Q.59 All information from our environment is detected by the specialised tips of some nerve cells and these receptors are usually located in our sense organs such as:

- Ans**
- ☐ 1. the inner ear
 - ☒ 2. the inner ear, the nose and the tongue
 - ☐ 3. the tongue
 - ☐ 4. the nose

Q.60 In which of the following months was Charaideo Maidam in Assam included in the UNESCO World Heritage Site list under the cultural category?

- Ans**
- ☐ 1. September 2024
 - ☐ 2. October 2024
 - ☐ 3. August 2024
 - ☒ 4. July 2024

Q.61 Simplify the given expression.

$$3 + 3 \div 3 \times 3 - 3$$

- Ans**
- ☐ 1. 0
 - ☐ 2. 1
 - ☐ 3. -3
 - ☒ 4. 3

Q.62 In which of the following countries did India win its first double team gold at the Chess Olympiad in September 2024?

- Ans**
- ☐ 1. China
 - ☐ 2. Indonesia
 - ☐ 3. Uzbekistan
 - ☒ 4. Hungary

Q.63 Two banks, A and B, offered loans at 5.5% and 6.5% per annum, respectively. Ramesh borrowed an amount of ₹3,00,000 from each bank. Find the positive difference between the amounts of simple interest paid to the two banks by Ramesh after 2 years.

- Ans**
- ☐ 1. ₹ 4,000
 - ☐ 2. ₹ 2,000
 - ☒ 3. ₹ 6,000
 - ☐ 4. ₹ 8,000

Q.64 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. EI-MH
 - ☒ 2. PT-XR
 - ☐ 3. GK-OJ
 - ☐ 4. NR-VQ

Q.65 According to the sign convention, the focal length of a convex lens is _____ and that of a concave lens is _____.

- Ans**
- ☐ 1. negative; negative
 - ☐ 2. positive; positive
 - ☒ 3. positive; negative
 - ☐ 4. negative; positive

Q.66 To achieve its target of becoming net carbon zero by 2035, Reliance Industries plans to replace transportation fuels with:

- Ans**
- ☐ 1. natural gas and biofuels
 - ☐ 2. solar and wind energy
 - ☒ 3. clean electricity and hydrogen
 - ☐ 4. biomass and nuclear energy

Q.67 Five-fourths of a number is greater than three-fourths of the number by 7. Find the number.

- Ans**
- ☐ 1. 8
 - ☒ 2. 14
 - ☐ 3. 12
 - ☐ 4. 10

Q.68 Which of the following in eukaryotes is separated from the cytoplasm by a double-layered membrane and it directs the life processes of the cell?

- Ans**
- ☒ 1. Nucleus
 - ☐ 2. Plastids
 - ☐ 3. Ribosome
 - ☐ 4. Endoplasmic reticulum

Q.69 If the position of an object is in between the principal focus and pole of a concave mirror, then the image formed will be:

- Ans**
- ☐ 1. real and diminished
 - ☐ 2. virtual and diminished
 - ☐ 3. real and enlarged
 - ☒ 4. virtual, erect and enlarged

Q.70 Two pipes, A and B, can fill a tank of 1000 litres in 5 hours and 6 hours, respectively. If they are opened together, how many hours will they take to fill an empty tank of 1800 litres?

- Ans**
- ☒ 1. $\frac{54}{11}$
 - ☐ 2. $\frac{45}{11}$
 - ☐ 3. $\frac{25}{11}$
 - ☐ 4. $\frac{52}{11}$

Q.71 In a certain code language, 'morning sun rises' is coded as 'xyq tdj zat', and 'sun rises brightly' is coded as 'tdj zat rfp'. What is the code for 'morning' in the given code language?

- Ans**
- ☐ 1. zat
 - ☐ 2. rfp
 - ☒ 3. xyq
 - ☐ 4. tdj

Q.72 How many isotopes of hydrogen element exist in nature?

- Ans**
- ☐ 1. 5
 - ☐ 2. 2
 - ☐ 3. 1
 - ☒ 4. 3

- Q.73** Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.
- Statement - Even though the students of school X have ranked among the top three in board exams for the past three years, the school has never received the best school award.
- Reasons:
- I. School X has high tuition fees.
- II. The best school award takes into consideration other activities along with academics.

Ans

- ☒ 1. Neither I nor II is a possible reason.
- ☒ 2. Only I is a possible reason.
- ☒ 3. Only II is a possible reason.
- ☒ 4. Both I and II are possible reasons.

- Q.74** The reproductive parts of angiosperms are located in the flower, where the female reproductive part is made of three parts, stigma, style and ovary and is known as:

Ans

- ☒ 1. stamen
- ☒ 2. undefined
- ☒ 3. petal
- ☒ 4. sepal

- Q.75** In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 27 :: 15 : Y

Ans

- ☒ 1. X = 11, Y = 35
- ☒ 2. X = 17, Y = 38
- ☒ 3. X = 17, Y = 35
- ☒ 4. X = 11, Y = 37

- Q.76** A man has invested ₹65,000 at a rate of $7\frac{1}{2}\%$ per annum simple interest for 6 years. Find the amount that he will receive after 6 years.

Ans

- ☒ 1. ₹95,750
- ☒ 2. ₹94,250
- ☒ 3. ₹28,750
- ☒ 4. ₹29,250

- Q.77** In $\triangle ABC$ if $\angle A = 50^\circ$ and $\angle B = 70^\circ$, find the measure of exterior angle A.

Ans

- ☒ 1. 130°
- ☒ 2. 140°
- ☒ 3. 60°
- ☒ 4. 30°

Q.78 The following observations are arranged in ascending order.

29, 32, 38, 50, x , $x + 2$, 72, 78, 84, 95

If the median is 63, then the value of x is:

- Ans
- ☐ 1. 50
 - ☐ 2. 31
 - ☐ 3. 63
 - ☒ 4. 62

Q.79 Consider a situation where a person is sitting in a car and is driving at a constant velocity in a straight line. If the car turns sharply to the left, the person will be pushed in which of the following directions?

- Ans
- ☐ 1. Left
 - ☐ 2. Backward
 - ☒ 3. Right
 - ☐ 4. Forward

Q.80 Who became the first Indian woman to win two gold medals at the 2024 Paralympic Games in Paris?

- Ans
- ☒ 1. Avani Lekhara
 - ☐ 2. Deepa Malik
 - ☐ 3. Pramod Bhagat
 - ☐ 4. Bhavinaben Patel

Q.81 In October 2024, Partha Sengupta was appointed as the MD and CEO of ____.

- Ans
- ☐ 1. Canara Bank
 - ☒ 2. Bandhan Bank
 - ☐ 3. State Bank of India
 - ☐ 4. ICICI Bank

Q.82 Which of the following contracts and relaxes to cause movement and contains special proteins?

- Ans
- ☒ 1. Muscles
 - ☐ 2. Cartilage
 - ☐ 3. Bone
 - ☐ 4. Blood

Q.83 The value of $(0.1 \times 0.001 \times 0.0001 \times 10^6)$ is:

- Ans
- ☐ 1. 1
 - ☐ 2. $\frac{1}{10}$
 - ☐ 3. 100
 - ☒ 4. $\frac{1}{100}$

Q.84 With an initial velocity of 10 m/s, an object is thrown vertically upwards. The maximum height attained by the object is _____. (Assume $g = 10\text{m/s}^2$)

- Ans**
- ☒ 1. 5 m
 - ☐ 2. 100 m
 - ☐ 3. 1 m
 - ☐ 4. 20 m

Q.85 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 5 3 @ # 1 & 9 + Ω 6 £ * \$ 2 % 8 4 7 (Right)

How many such numbers are there, each of which is immediately preceded by a symbol and also immediately followed by another symbol?

- Ans**
- ☐ 1. 1
 - ☐ 2. 2
 - ☐ 3. 0
 - ☒ 4. 4

Q.86 The Sir Creek dispute is a long-standing border dispute between India and which neighbouring country?

- Ans**
- ☐ 1. Bangladesh
 - ☐ 2. China
 - ☒ 3. Pakistan
 - ☐ 4. Nepal

Q.87 If 75% of x is 15 less than 15% of 1500, then the value of x is:

- Ans**
- ☒ 1. 280
 - ☐ 2. 150
 - ☐ 3. 300
 - ☐ 4. 120

Q.88 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DGJ, LOR, TWZ, BEH, ?

- Ans**
- ☒ 1. JMP
 - ☐ 2. JLN
 - ☐ 3. KNQ
 - ☐ 4. KMO

Q.89 Amita bought a laptop at a 20% discount on its marked price. If she paid ₹28,400 for the laptop, what was its marked price?

- Ans**
- ☐ 1. ₹33,300
 - ☐ 2. ₹32,600
 - ☐ 3. ₹36,100
 - ☒ 4. ₹35,500

Q.90 If blood :: connective tissue, then bones :: _____.

- Ans**
- ☒ 1. connective tissue
 - ☐ 2. nervous tissue
 - ☐ 3. epithelial tissue
 - ☐ 4. muscular tissue

Q.91 What is the physical state of non-metal element bromine?

- Ans**
- ☐ 1. Gaseous state
 - ☐ 2. Plasma state
 - ☐ 3. Solid state
 - ☒ 4. Liquid state

Q.92 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

33, 41, 57, 89, 153, ?

- Ans**
- ☐ 1. 269
 - ☐ 2. 297
 - ☐ 3. 253
 - ☒ 4. 281

Q.93 Which of the following helps in the absorption and upward movement of water and minerals dissolved in it from roots to the leaves?

- Ans**
- ☐ 1. Photosynthesis
 - ☐ 2. Translocation
 - ☐ 3. Respiration
 - ☒ 4. Transpiration

Q.94 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All museums are parks.

No park is a theatre.

Conclusions:

(I) No museum is a theatre.

(II) At least some parks are museums.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☒ 2. Both conclusions I and II follow
 - ☐ 3. Neither conclusion I nor II follows
 - ☐ 4. Only conclusion II follows

Q.95 The total amount of electric charge that flows through a circuit is 1200 C in 2 min. Then the amount of electric current that is drawn by the same electric circuit is:

- Ans**
- ☒ 1. 100 A
 - ☒ 2. 10 A
 - ☒ 3. 600 A
 - ☒ 4. 60 A

Q.96 The average of eight numbers is 14. The average of six of these numbers is 16. The average of the remaining two numbers is:

- Ans**
- ☒ 1. 16
 - ☒ 2. 12
 - ☒ 3. 8
 - ☒ 4. 4

Q.97 The smallest particle of an element that retains its properties is called a/an:

- Ans**
- ☒ 1. compound
 - ☒ 2. proton
 - ☒ 3. atom
 - ☒ 4. electron

Q.98 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 84 :: 11 : Y

- Ans**
- ☒ 1. X = 6, Y = 153
 - ☒ 2. X = 7, Y = 154
 - ☒ 3. X = 6, Y = 152
 - ☒ 4. X = 6, Y = 154

Q.99 Express $\sin 54^\circ + \cos 72^\circ$ in terms of Trigonometric ratios of angles between 0° and 45° .

- Ans**
- ☒ 1. $\cos 36^\circ + \cos 18^\circ$
 - ☒ 2. $\sin 36^\circ + \sin 18^\circ$
 - ☒ 3. $\sin 36^\circ + \cos 18^\circ$
 - ☒ 4. $\cos 36^\circ + \sin 18^\circ$

Q.100 Who among the following discovered the nucleus of an atom?

- Ans**
- ☒ 1. J Chadwick
 - ☒ 2. E Rutherford
 - ☒ 3. Neils Bohr
 - ☒ 4. JJ Thomson



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	23/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The atomic number of an element is determined by the number of:

- Ans
- ☒ 1. electrons
 - ☒ 2. protons
 - ☐ 3. neutrons
 - ☐ 4. both protons and neutrons

Q.2 In a certain code language, 'PLATE' is coded as '25693' and 'MASK' is coded as '3417' and 'KEPT' is coded as '4695'. What is the code for 'L' in the given code language?

- Ans
- ☒ 1. 2
 - ☐ 2. 5
 - ☐ 3. 4
 - ☐ 4. 9

Q.3 Two pipes A and B can fill a cistern in $37\frac{1}{2}$ minutes and 45 minutes, respectively. Both pipes are open. The cistern will be filled in just half an hour, if the B is turned off after:

- Ans
- ☒ 1. 9 min
 - ☐ 2. 5 min
 - ☐ 3. 10 min
 - ☐ 4. 15 min

Q.4 'Project Udbhav is an initiative aimed at rediscovering and integrating ancient Indian military knowledge from texts on statecraft, warfare, diplomacy and grand strategy into modern military practices.' Who launched Project Udbhav?

- Ans
- ☐ 1. Indian Navy and Defence Research and Development Organisation (DRDO)
 - ☐ 2. Army Training Command (ARTRAC) and Indian Air Force
 - ☒ 3. Indian Army and United Service Institution (USI)
 - ☐ 4. Ministry of Defence and National Defence Academy (NDA)

Q.5 _____ are found in the epidermis of a leaf.

- Ans**
- ☐ 1. Vascular bundle
 - ☐ 2. Aerenchyma
 - ☒ 3. Stomata
 - ☐ 4. Chlorenchyma

Q.6 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

TWP, SVO, RUN, QTM, ?

- Ans**
- ☐ 1. PLS
 - ☒ 2. PSL
 - ☐ 3. LSP
 - ☐ 4. LPS

Q.7 Which of the following represents the correct formula for calcium oxide?

- Ans**
- ☐ 1. Ca_2O
 - ☐ 2. CaO_2
 - ☐ 3. Ca_2O_3
 - ☒ 4. CaO

Q.8 The difference between two numbers is 46 and they are in the ratio 5 : 3. Find the smaller number.

- Ans**
- ☐ 1. 36
 - ☐ 2. 63
 - ☐ 3. 46
 - ☒ 4. 69

Q.9 A current of 1 A is drawn by a filament of an electric bulb. The number of electrons passing through a cross-section of the filament in 8 mins would be equal to _____.

(Given, charge of electron (e) is equal to 1.6×10^{-19} C)

- Ans**
- ☐ 1. 3×10^{20}
 - ☒ 2. 3×10^{21}
 - ☐ 3. 3×10^{19}
 - ☐ 4. 3×10^{22}

Q.10 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☒ 1. RM-OT
 - ☐ 2. LG-IM
 - ☐ 3. JE-GK
 - ☐ 4. SN-PT

Q.11 In an election between two candidates, one candidate got 38% of the votes and yet lost by 7200 votes. If all the votes polled were valid, then the total number of votes cast in the election was:

- Ans**
- ☐ 1. 13,800
 - ☐ 2. 13,000
 - ☐ 3. 16,200
 - ☒ 4. 30,000

Q.12 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

FRE, HTD, JVC, LXB, ?

- Ans**
- ☒ 1. NZA
 - ☐ 2. MZA
 - ☐ 3. OYA
 - ☐ 4. MYA

Q.13 What will come in the place of the question mark '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$10 \times 5 - 13 + 4 \div 3 = ?$$

- Ans**
- ☐ 1. 11
 - ☒ 2. 3
 - ☐ 3. 6
 - ☐ 4. 7

Q.14 If $2^K \times 4^{12} = 16^{11}$, then the value of K is:

- Ans**
- ☒ 1. 20
 - ☐ 2. 16
 - ☐ 3. 10
 - ☐ 4. 24

Q.15 In July 2024, Charaideo Maidam was included in the UNESCO World Heritage Site list in the cultural category. In which of the following states is it located?

- Ans**
- ☐ 1. West Bengal
 - ☐ 2. Bihar
 - ☐ 3. Odisha
 - ☒ 4. Assam

Q.16 The tissue which makes the plant hard and stiff and provides strength to the plant parts is the:

- Ans**
- ☒ 1. sclerenchyma
 - ☐ 2. chlorenchyma
 - ☐ 3. aerenchyma
 - ☐ 4. collenchyma

Q.17 B, C, D, E, F, G and K are sitting around a circular table, facing the centre. Only two people sit between F and K when counted from the right of F. Only two people sit between K and C. Only three people sit between F and D. B sits to the immediate left of G.

Who sits third to the left of E?

- Ans**
- ✓ 1. G
 - ✗ 2. F
 - ✗ 3. B
 - ✗ 4. K

Q.18 Which of the following is equal to 1 Ohm (If V and A are volt and ampere, respectively)?

- Ans**
- ✗ 1. $1V/2A$
 - ✗ 2. $1V * 1A$
 - ✓ 3. $1V/1A$
 - ✗ 4. $1A/1V$

Q.19 A constant force of 4 N acts on a box of mass 2 kg for a duration of 2 s. If its initial velocity is 2 m/s, then the final velocity of this box will be:

- Ans**
- ✓ 1. 6 m/s
 - ✗ 2. 2 m/s
 - ✗ 3. 3 m/s
 - ✗ 4. 4 m/s

Q.20 Which of the following statements is/are correct related to eco-system?

- (i) UV radiation is not damaging to organisms.
- (ii) Ozone at the higher levels of the atmosphere is a product of UV radiation acting on oxygen molecule.
- (iii) The amount of ozone in the atmosphere began to drop sharply in 1980.

- Ans**
- ✓ 1. Only (ii) and (iii)
 - ✗ 2. (i), (ii) and (iii)
 - ✗ 3. Only (i) and (ii)
 - ✗ 4. Only (i)

Q.21 Select the correct IUPAC names for CH_3COCH_3 and C_2H_5OH compounds, respectively.

- Ans**
- ✗ 1. Propanoic acid and ethanol
 - ✓ 2. Propanone and ethanol
 - ✗ 3. Propanone and methanol
 - ✗ 4. Ethanol and propanone

Q.22 A and B can do a piece of work in 6 days and 8 days, respectively. With the help of C, they completed the work in 3 days and earned ₹3,848. What was the share of C?

- Ans**
- ✓ 1. ₹481
 - ✗ 2. ₹1,693
 - ✗ 3. ₹1,443
 - ✗ 4. ₹861

Q.23 The chemical reaction $\text{Fe(s)} + \text{CuSO}_4\text{(aq)} \rightarrow \text{FeSO}_4\text{(aq)} + \text{Cu(s)}$ represents which type of reaction?

- Ans**
- ☐ 1. Combination reaction
 - ☐ 2. Combustion reaction
 - ☒ 3. Displacement reaction
 - ☐ 4. Double Displacement reaction

Q.24 Which of the following is an example of a mixture?

- Ans**
- ☐ 1. Salt (NaCl)
 - ☐ 2. Water (H₂O)
 - ☐ 3. Iron (Fe)
 - ☒ 4. Air

Q.25 Who presented the Union Budget 2024-25 in the Parliament on 23 July 2024?

- Ans**
- ☐ 1. Shri Ashwini Vaishnaw
 - ☒ 2. Ms. Nirmala Sitharaman
 - ☐ 3. Shri Shaktikanta Das
 - ☐ 4. Shri Bhupender Yadav

Q.26 A box full of dry fruits weighs 12.650 kg. If the weight of the dry fruits is 9 kg 800 g, the weight of the empty box is:

- Ans**
- ☐ 1. 2825 g
 - ☒ 2. 2850 g
 - ☐ 3. 2750 g
 - ☐ 4. 2725 g

Q.27 96 is divided into two parts in such a way that a seventh part of the first and a ninth part of the second are equal. Find the larger part.

- Ans**
- ☐ 1. 42
 - ☐ 2. 38
 - ☐ 3. 48
 - ☒ 4. 54

Q.28 The atomic number of phosphorus atom is:

- Ans**
- ☐ 1. 17
 - ☐ 2. 14
 - ☐ 3. 16
 - ☒ 4. 15

Q.29 IEMJ is related to GCKH in a certain way based on the English alphabetical order. In the same way, MIQN is related to KGOL. To which of the following options is PLTQ related, following the same logic?

- Ans**
- ☒ 1. NJRO
 - ☐ 2. JNOR
 - ☐ 3. JNRO
 - ☐ 4. NJOR

Q.30 Which of the following is divisible by 2, 3, and 5?

- Ans**
- ☐ 1. 2240
 - ☐ 2. 54332
 - ☒ 3. 3150
 - ☐ 4. 14175

Q.31 Seven boxes, A, B, C, D, E, F and G, are kept one over the other but not necessarily in the same order. F is kept second from the bottom. Only three boxes are kept between F and E. D is kept at one of the positions below F. Only A is kept between E and C. B is kept at one of the positions above E. How many boxes are kept between E and D?

- Ans**
- ☐ 1. 1
 - ☐ 2. 3
 - ☒ 3. 4
 - ☐ 4. 2

Q.32 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

351, 380, 413, 450, 491, ?

- Ans**
- ☒ 1. 536
 - ☐ 2. 530
 - ☐ 3. 512
 - ☐ 4. 541

Q.33 Chlorination of alkane is an example of:

- Ans**
- ☐ 1. addition reaction
 - ☐ 2. rearrangement reaction
 - ☐ 3. both addition and substitution chain reaction
 - ☒ 4. substitution reaction

Q.34 A right circular cylindrical tunnel of diameter 2 m and length 40 m is to be constructed from a sheet of iron. The area of the iron sheet required in m^2 , is:

- Ans**
- ☒ 1. 80π
 - ☐ 2. 160π
 - ☐ 3. 200π
 - ☐ 4. 40π

Q.35 A sum when invested at $12\frac{1}{2}\%$ simple interest per annum amounts to ₹17,500 after 2 years. What is the simple interest?

- Ans**
- ☐ 1. ₹3,700
 - ☐ 2. ₹3,450
 - ☐ 3. ₹3,650
 - ☒ 4. ₹3,500

Q.36 Plant cells change shape by changing the amount of _____ in them, resulting in swelling or shrinking, and therefore in changing shapes.

- Ans**
- ☐ 1. chlorophyll
 - ☐ 2. fat
 - ☒ 3. water
 - ☐ 4. carbon dioxide

Q.37 The phenomenon of scattering of light by the colloidal particles gives rise to:

- Ans**
- ☐ 1. delay in sunset
 - ☒ 2. Tyndall effect
 - ☐ 3. rainbow
 - ☐ 4. twinkling of stars

Q.38 What will be the atomicity of oxygen and phosphorous?

- Ans**
- ☐ 1. Diatomic and monoatomic
 - ☐ 2. Diatomic and diatomic
 - ☒ 3. Diatomic and tetra-atomic
 - ☐ 4. Diatomic and triatomic

Q.39 What should be subtracted from $\frac{-5}{6}$ to get 1?

- Ans**
- ☐ 1. $\frac{7}{6}$
 - ☐ 2. $\frac{-7}{6}$
 - ☐ 3. $\frac{-1}{6}$
 - ☒ 4. $\frac{-11}{6}$

Q.40 Which of the following options does NOT represent a characteristic of solids?

- Ans**
- ☐ 1. Solids have a definite shape.
 - ☐ 2. Solids have negligible compressibility.
 - ☐ 3. Solids have fixed volume.
 - ☒ 4. Solids have indistinct boundaries.

Q.41 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$14 \text{ A } 2 \text{ B } 6 \text{ D } 20 \text{ C } 5 = ?$$

- Ans**
- ☐ 1. 30
 - ☐ 2. 25
 - ☐ 3. 28
 - ☒ 4. 22

Q.42 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 65 :: 15 : Y

- Ans**
- ☒ 1. X = 19, Y = 85
 - ☒ 2. X = 12, Y = 75
 - ☒ 3. X = 12, Y = 80
 - ☒ 4. X = 19, Y = 80

Q.43 5 cm ஆரம் மற்றும் 7 cm உயரம் கொண்ட திண்ம உருளையின் ஒரு முனையினுள், 3 cm ஆரம் மற்றும் 2 cm ஆழம் கொண்ட ஒரு உருளை வடிவ குழிவானது உருவாக்கப்படுகிறது. எனில் உருவாக்கப்பட்டு, கிடைக்கபெற்ற திண்மத்தின் மொத்த புறப்பரப்பளவை (cm^2 இல்) கண்டறியவும்.

- Ans**
- ☒ 1. 126π
 - ☒ 2. 107π
 - ☒ 3. 82π
 - ☒ 4. 132π

Q.44 What is the unit of refractive index?

- Ans**
- ☒ 1. Unitless
 - ☒ 2. m/s
 - ☒ 3. m/s^2
 - ☒ 4. m^3

Q.45 பின்வரும் கூற்றுகளில் எது/எவை, சுற்றுச்சூழல் அமைப்பு குறித்து சரியானது/சரியானவை?

- (i) மக்காத பொருள் சுற்றுச்சூழல் அமைப்பின் பல்வேறு உறுப்பினர்களுக்கு தீங்கு விளைவிக்கிறது.
- (ii) மக்காத பொருட்கள் உயிரியல் செயல்முறைகளால் சிதைவடைகின்றன.
- (iii) மக்காத பொருட்கள் சுற்றுச்சூழலில் எப்போதும் நிலைக்காது.

- Ans**
- ☒ 1. (i) மற்றும் (ii) மட்டும்
 - ☒ 2. (ii) மற்றும் (iii) மட்டும்
 - ☒ 3. (i) மட்டும்
 - ☒ 4. (i), (ii) மற்றும் (iii)

Q.46 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 7 2 1 5 7 6 8 9 7 6 4 9 8 1 6 5 9 5 8 6 2 6 9 5 4 9 6 3 0 3 (Right)

What is the sum of the 1st digit from the left and the 7th digit from the right?

- Ans**
- ☒ 1. 10
 - ☒ 2. 14
 - ☒ 3. 12
 - ☒ 4. 13

Q.47 On _____ December 2023, the National Level Programme on Anganwadi-Cum-Crèche released the Standard Operating Procedure (SOP) for the scheme in New Delhi.

- Ans**
- ☐ 1. 23rd
 - ☐ 2. 27th
 - ☐ 3. 29th
 - ☒ 4. 21st

Q.48 Which of the following is/are NOT related to the phenomenon of the universal law of gravitation?

- (A) The motion of the moon around the earth.
- (B) The tides caused by the moon.
- (C) The motion of electron around the nucleus.

- Ans**
- ☒ 1. Only (C)
 - ☐ 2. (A) and (B)
 - ☐ 3. (B) and (C)
 - ☐ 4. Only (B)

Q.49 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 2 9 7 2 1 5 9 6 8 6 0 1 1 7 8 4 7 5 0 9 3 3 9 0 2 5 0 7 1 5 (Right)

What is the sum of the 12th digit from the left and the 7th digit from the right?

- Ans**
- ☐ 1. 4
 - ☐ 2. 3
 - ☐ 3. 0
 - ☒ 4. 1

Q.50 A bought an item for ₹384 and sold it for ₹576. B bought another item for ₹1,254 and sold it for ₹1,672. What is the ratio of the gain percentage of A to the gain percentage of B?

- Ans**
- ☒ 1. $\frac{3}{2}$
 - ☐ 2. $\frac{3}{4}$
 - ☐ 3. $\frac{5}{3}$
 - ☐ 4. $\frac{5}{2}$

Q.51 If $\operatorname{cosec} 2\theta = \sec(\theta - 30)^\circ$, then find the measure of θ (in degrees).

- Ans**
- ☒ 1. 40
 - ☐ 2. 25
 - ☐ 3. 45
 - ☐ 4. 35

Q.52 Sometimes, when there is a lack of oxygen in our muscle cells, the pyruvate by anaerobic respiration is converted into:

- Ans**
- ☒ 1. ethyl alcohol
 - ☒ 2. methyl alcohol
 - ☒ 3. acetic acid
 - ☒ 4. lactic acid

Q.53 Ferrous sulphate decomposes to which of the following substances?

- Ans**
- ☒ 1. Ferric oxide (Fe_2O_3), sulphur dioxide (SO_2) and sulphur trioxide (SO_3)
 - ☒ 2. Ferric oxide (Fe_2O_3) and sulphur dioxide (SO_2) only
 - ☒ 3. Ferric oxide (Fe_2O_3) only
 - ☒ 4. Ferric oxide (Fe_2O_3) and sulphur trioxide (SO_3) only

Q.54 The energy possessed by a ball of mass 5 kg when it is raised to a height of 5 m above the ground is (take $g = 10 \text{ m/s}^2$):

- Ans**
- ☒ 1. 10 J
 - ☒ 2. 2.5 J
 - ☒ 3. 2 J
 - ☒ 4. 250 J

Q.55 இந்த கேள்வியில், ஒரு அறிக்கையைத் தொடர்ந்து I மற்றும் II என எண்ணிடப்பட்ட இரண்டு நடவடிக்கைகள் கொடுக்கப்பட்டுள்ளது. அறிக்கையில் உள்ள அனைத்தும் உண்மை என்று நீங்கள் கருத வேண்டும் மற்றும் அறிக்கையில் கொடுக்கப்பட்டுள்ள தகவலின் அடிப்படையில், தர்க்கரீதியாக எந்த நடவடிக்கை(கள்) பின்பற்றுகிறது/கின்றன என்பதைத் தீர்மானிக்கவும்.

அறிக்கை:

ஒரு நிறுவனத்தில் ஊழியர்களின் அதிகரிப்பு இருந்தபோதிலும், ஒரு டஜன் வழக்கமான நிரல்களை நடத்தத் தவறியதற்காகவும், ஆய்வுகள் மற்றும் ஆராய்ச்சிக்கான ஒரு திடமான செயல் திட்டத்தை உருவாக்கத் தவறியதற்காகவும், அந்த நிறுவனமானது குழுவின் ஆய்வுக்கு உட்படுத்தப்பட்டுள்ளது.

நடவடிக்கைகள்:

- I. நடைமுறை சாத்தியமுள்ள செயல் திட்டத்தை செயல்படுத்த, நிறுவனத்தின் மேலான நோக்கங்கள் மறுவரையறை செய்யப்பட வேண்டும்.
- II. திட்டமிடப்பட்ட நிரல்ககள் நிறைவேற்றப்படுவதைத் தடுக்கும் காரணிகள் பற்றிய அறிக்கையை நிறுவனம் வழங்க வேண்டும்.

- Ans**
- ☒ 1. I மற்றும் II இரண்டும் பின்பற்றுகின்றன
 - ☒ 2. II மட்டும் பின்பற்றுகிறது
 - ☒ 3. I மட்டும் பின்பற்றுகிறது
 - ☒ 4. I அல்லது II ஆகிய எதுவும் பின்பற்றவில்லை

Q.56 Evaluate the given expression.

$$\left(\frac{1}{64}\right)^{(-1/3)}$$

- Ans**
- ☐ 1. 2
 - ☐ 2. 4^{-1}
 - ☐ 3. 2^{-1}
 - ☒ 4. 4

Q.57 Which of the following were found as dominant traits by Mendel in his experiment with pea plants?

- Ans**
- ☒ 1. Tall plant and round seed
 - ☐ 2. Short plant and round seed
 - ☐ 3. Short plant and wrinkled seed
 - ☐ 4. Tall plant and wrinkled seed

Q.58 KPNS is related to QVTY in a certain way based on the English alphabetical order. In the same way, HMKP is related to NSQV. To which of the following options is DIGL related, following the same logic?

- Ans**
- ☐ 1. OJMR
 - ☐ 2. JORM
 - ☐ 3. OJRM
 - ☒ 4. JOMR

Q.59 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 4 9 6 8 1 3 9 4 9 8 8 4 3 9 8 5 7 2 6 5 6 9 2 8 4 8 9 5 5 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 5
 - ☐ 2. 0
 - ☒ 3. 4
 - ☐ 4. 3

Q.60 Gopi starts from Point A and drives 100 km towards East. He then takes a left turn, drives 55 km, turns left and drives 75 km. He then takes a left turn and drives 45 km. He takes a final right turn, drives 25 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 8 km towards South
 - ☐ 2. 8 km towards North
 - ☐ 3. 10 km towards North
 - ☒ 4. 10 km towards South

Q.61 For the first time in the General Elections 2024, which facility has been extended pan-India for only senior citizens and Persons with Disabilities?

- Ans**
- ☐ 1. Online voting
 - ☒ 2. Home voting
 - ☐ 3. Postal voting
 - ☐ 4. Early voting

Q.62 In the digestive system, which of the following releases hydrochloric acid, a protein digesting enzyme called pepsin, and mucus?

- Ans**
- ☐ 1. Pancreas
 - ☐ 2. Gall bladder
 - ☒ 3. Gastric glands
 - ☐ 4. Salivary glands

Q.63 Simplify the following expression:

$$9994 \times 10006$$

- Ans**
- ☐ 1. 99999976
 - ☐ 2. 9999924
 - ☒ 3. 99999964
 - ☐ 4. 91999924

Q.64 Two people drive towards each other from two places which are 56 km apart. The speed of the first person is 12 km/h and speed of the other is 13 km/h. After how long will they be 6 km apart if they start driving together?

- Ans**
- ☐ 1. 1 hour 30 minutes
 - ☒ 2. 2 hours
 - ☐ 3. 1 hour
 - ☐ 4. 2 hours 10 minutes

Q.65 Who was awarded the Vigyan Ratna - 2024 for contributions in the field of Biological Sciences?

- Ans**
- ☐ 1. Dr. Ramesh Sharma
 - ☒ 2. Prof. Govindarajan Padmanabhan
 - ☐ 3. Dr. Swati Nayak
 - ☐ 4. Dr. Aditi Sen De

Q.66 Anu is two years older than Kanu, who is twice as old as Tanu. If the total of their ages is 32, then what is the age of Kanu?

- Ans**
- ☐ 1. 8 years
 - ☐ 2. 7 years
 - ☒ 3. 12 years
 - ☐ 4. 14 years

Q.67 Hydrophobic end and hydrophilic end of soap molecule:

- Ans**
- ☐ 1. interacts with hydrocarbons and interacts with base, respectively
 - ☐ 2. interacts with water and interacts with hydrocarbons, respectively
 - ☒ 3. interacts with hydrocarbons and interacts with water, respectively
 - ☐ 4. interacts with water and interacts with acid, respectively

Q.68 What is the value of 1 kWh in Joule(J)?

- Ans**
- ☐ 1. 3.6×10^5
 - ☐ 2. 3.6×10^{-5}
 - ☒ 3. 3.6×10^6
 - ☐ 4. 3.6

Q.69 In a college entrance test, the average marks obtained by all 30 boys of the class is 5 less than the average marks obtained by all 20 girls of the class. If the average marks of the whole class are 25, then find the ratio of average marks of boys to that of girls.

- Ans**
- ☐ 1. 41 : 32
 - ☒ 2. 23 : 28
 - ☐ 3. 32 : 41
 - ☐ 4. 28 : 23

Q.70 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. AGM
 - ☐ 2. DJP
 - ☒ 3. MUI
 - ☐ 4. SYE

Q.71 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some files are photos.

All photos are pictures.

Conclusions:

(I) No pictures are files.

(II) Some pictures are files.

- Ans**
- ☒ 1. Only conclusion (II) follows
 - ☐ 2. Only conclusion (I) follows
 - ☐ 3. Both conclusions (I) and (II) follow
 - ☐ 4. Neither conclusion (I) nor (II) follows

Q.72 If A earns $33\frac{1}{3}\%$ more than B, then B earns less than A by:

- Ans**
- ☒ 1. 25%
 - ☐ 2. $16\frac{2}{3}\%$
 - ☐ 3. $33\frac{1}{3}\%$
 - ☐ 4. 50%

Q.73 Which of the following organisms is commonly referred to as bread mould?

- Ans**
- ☐ 1. Spirogyra
 - ☐ 2. Planaria
 - ☒ 3. Rhizopus
 - ☐ 4. Yeast

Q.74 In which simple multi-cellular organism does sporangia develop on hyphae and spore formation occurs in sporangia?

- Ans**
- ☐ 1. Yeast
 - ☐ 2. Amoeba
 - ☐ 3. Leishmania
 - ☒ 4. Rhizopus

Q.75 The roots of a plant always grow downwards while the shoots usually grow upwards and away from the earth. This upward and downward growth of shoots and roots is known as:

- Ans**
- ☒ 1. geotropism
 - ☐ 2. hydrotropism
 - ☐ 3. phototropic movement
 - ☐ 4. chemotropism

Q.76 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only one person sits between L and E when counted from the left of E. G sits third to the right of N. M sits third to the left of F. G sits to the immediate right of M. D is not an immediate neighbour of M. How many people sit between D and E when counted from the right of D?

- Ans**
- ☐ 1. Four
 - ☐ 2. Two
 - ☒ 3. Three
 - ☐ 4. One

Q.77 The 38th Maharashtra State Junior Athletics Championships was held in _____ .

- Ans**
- ☐ 1. Nashik
 - ☒ 2. Pune
 - ☐ 3. Mumbai
 - ☐ 4. Nagpur

Q.78 There are dead tissues in the _____ .

- Ans**
- ☐ 1. banana peel
 - ☐ 2. orange peel
 - ☐ 3. guava peel
 - ☒ 4. coconut husk





Q.79 In a certain code language, 'metro city transport' is coded as 'qi de pu' and 'train national transport' is coded as 'la qi ti'. What is the code for 'transport' in the given code language?

- Ans**
- ☐ 1. pu
 - ☐ 2. de
 - ☐ 3. la
 - ☒ 4. qi





Q.80 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)





X : 59 :: 20 : Y

- Ans**
-  1. X = 15, Y = 80
 -  2. X = 16, Y = 80
 -  3. X = 16, Y = 79
 -  4. X = 15, Y = 79




Q.81 Which statement is true for solid matter?

- Ans**
-  1. Solids do not have a definite shape, distinct boundary and fixed volume.
 -  2. Solids have only definite shape, but not fixed volume.
 -  3. Solids have only definite shape, but not distinct boundary.
 -  4. Solids have a definite shape, distinct boundary and fixed volume.

Q.82 All of the following are signals that sexual maturation is taking place, EXCEPT:

- Ans**
-  1. different patterns of hair growth
 -  2. increased size and shape of breast or penis
 -  3. girls begin to menstruate at around this time
 -  4. blue colour of eyes

Q.83 Find the fourth proportional of 24, 8 and 9.

- Ans**
-  1. 9
 -  2. 24
 -  3. 3
 -  4. 8

Q.84 The 8th edition of India-Kazakhstan Joint Military Exercise KAZIND-2024 was held in _____.

- Ans**
-  1. Pune, Maharashtra
 -  2. Shillong, Meghalaya
 -  3. Auli, Uttarakhand
 -  4. Jaisalmer, Rajasthan

Q.85 An object with a mass of 10 kg is moving with an initial velocity of 3 m/s and its final velocity becomes 5 m/s. Then the change in its kinetic energy is:

- Ans**
-  1. 160 J
 -  2. 40 J
 -  3. 50 J
 -  4. 80 J

Q.86 Which of the following is specialised for conducting information via electrical impulses from one part of the body to another?

- Ans**
- ☒ 1. Neuron
 - ☐ 2. Spinal cord
 - ☐ 3. Alveoli
 - ☐ 4. Glomerulus

Q.87 Find the simple interest on ₹800 at 7% per month in 9 months.

- Ans**
- ☐ 1. ₹514
 - ☐ 2. ₹524
 - ☐ 3. ₹534
 - ☒ 4. ₹504

Q.88 In a certain code language,

'A + B' means 'A is the sister of B',

'A – B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is M related to P if 'K ÷ L – M + N x O + P'?

- Ans**
- ☐ 1. Sister
 - ☐ 2. Mother
 - ☐ 3. Daughter
 - ☒ 4. Mother's sister

Q.89 Consider a long conducting wire carrying a current. Which of the following statements is NOT true?

- Ans**
- ☐ 1. The strength of the magnetic field increases if we increase the current.
 - ☐ 2. The magnetic field decreases as we move away from the wire.
 - ☐ 3. The magnetic field will reverse the direction if we reverse the current.
 - ☒ 4. We can use Fleming's left-hand rule to determine the direction of magnetic field.

Q.90 What price should a shopkeeper mark on an article, which costs him ₹136, to gain 20% after allowing a discount of 15%?

- Ans**
- ☐ 1. ₹162
 - ☐ 2. ₹216
 - ☐ 3. ₹224
 - ☒ 4. ₹192

Q.91 An object A with a mass m and velocity v has a kinetic energy of 100 J. Then the kinetic energy of an object B with a mass of $2m$ and velocity v is:

- Ans**
- ☒ 1. 50 J
 - ☒ 2. 200 J
 - ☒ 3. 400 J
 - ☒ 4. 300 J

Q.92 Who among the following became India's youngest Olympic medallist by winning a bronze in wrestling at the 2024 Paris Paralympics?

- Ans**
- ☒ 1. Aman Sehrawat
 - ☒ 2. Vinod Kumar
 - ☒ 3. Praveen Kumar
 - ☒ 4. Sumit Antil

Q.93 Which of the following statements is true about the free fall of an object under gravitational force?

- Ans**
- ☒ 1. The acceleration experienced by an object is independent of its mass.
 - ☒ 2. The acceleration experienced by an object is opposite to the direction of motion.
 - ☒ 3. The acceleration experienced by an object depends on its mass.
 - ☒ 4. The velocity of the object remains constant during free fall.

Q.94 The mode of the observations 2, 6, 3, 9, 5, 6, 7, 8, 4, 6, 10, 6 and 11 is:

- Ans**
- ☒ 1. 6
 - ☒ 2. 7
 - ☒ 3. 11
 - ☒ 4. 10

Q.95 If the thrust experienced by an object of area 1000 cm^2 is 50 N, then the pressure exerted on the object is:

- Ans**
- ☒ 1. 500 Pa
 - ☒ 2. 20 Pa
 - ☒ 3. 5 Pa
 - ☒ 4. 30 Pa

Q.96 In August 2024, who among the following was awarded the M.S. Swaminathan Award for Environment Protection 2024?

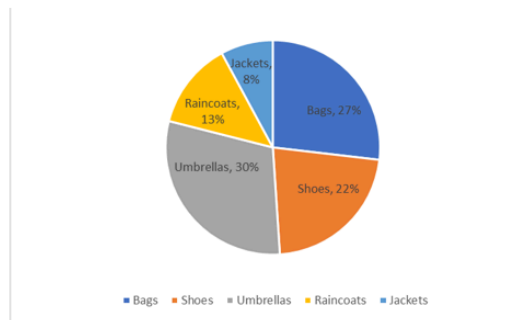
- Ans**
- ☒ 1. Rajendra Singh
 - ☒ 2. Sunita Narain
 - ☒ 3. Anant Darshan Shankar
 - ☒ 4. Sundar Lal Bahuguna

Q.97 Which of the following is the most reactive metal in the reactivity series?

- Ans**
- ☒ 1. Gold
 - ☒ 2. Zinc
 - ☒ 3. Potassium
 - ☒ 4. Sodium

Q.98 Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of sales of the different products of Company X in the year 2022.



If the total number of items sold by the company was 1000 in 2022, what was the total number of raincoats and jackets sold by the company in the year?

- Ans**
- ☐ 1. 200
 - ☐ 2. 230
 - ☐ 3. 180
 - ☒ 4. 210

Q.99 If A, B, C and D, the measures of the four angles of a quadrilateral, are in the ratio 3 : 5 : 4 : 6, then the value of $3A + 2B$ is:

- Ans**
- ☐ 1. 340°
 - ☐ 2. 360°
 - ☒ 3. 380°
 - ☐ 4. 330°

Q.100 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All laptops are speakers.

All speakers are mics.

Conclusions:

(I) At least some speakers are laptops.

(II) All laptops are mics.

- Ans**
- ☒ 1. Both conclusions I and II follow
 - ☐ 2. Neither conclusion I nor II follows
 - ☐ 3. Only conclusion II follows
 - ☐ 4. Only conclusion I follows

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	23/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The Union Budget 2024-25 outlines a comprehensive strategy to achieve 'Viksit Bharat' by focusing on _____ key priorities that aim to create abundant opportunities for all citizens. Together, these initiatives are designed to propel India towards a developed nation status.

- Ans**
- ☒ 1. five
 - ☒ 2. eight
 - ☒ 3. nine
 - ☒ 4. ten

Q.2 In a certain code language, 'WIFE' is coded as '1852' and 'FIRE' is coded as '7258'. What is the code for 'R' in the given code language?

- Ans**
- ☒ 1. 7
 - ☒ 2. 2
 - ☒ 3. 5
 - ☒ 4. 8

Q.3 Find the fourth proportional of 15, 25 and 12.

- Ans**
- ☒ 1. 20
 - ☒ 2. 30
 - ☒ 3. 15
 - ☒ 4. 25

Q.4 To move an object on a horizontal table, one needs to apply:

- Ans**
- ☒ 1. unbalanced force
 - ☒ 2. an equal amount of perpendicular forces on the object in both upward and downward directions
 - ☒ 3. balanced force
 - ☒ 4. only a single force perpendicular to the object

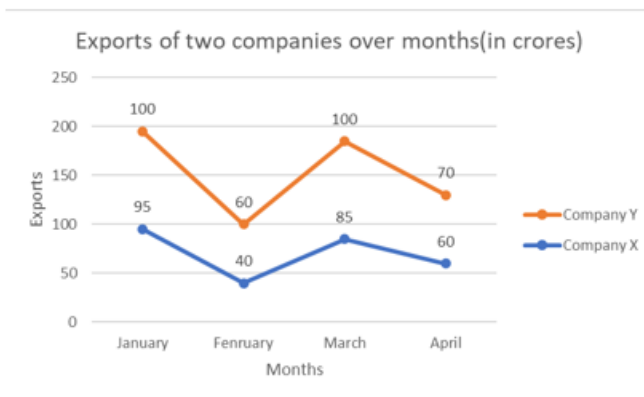
Q.5 What is the primary difference between the particles of a solid and those of a gas?

- Ans**
- ☐ 1. Solid particles have more energy than gas particles.
 - ☐ 2. Solid particles are made of different elements than gas particles.
 - ☒ 3. Solid particles are more closely packed than gas particles.
 - ☐ 4. Solid particles move more freely than gas particles.

Q.6 JGLI is related to NKPM in a certain way based on the English alphabetical order. In the same way, PMRO is related to TQVS. To which of the following options is MJOL related, following the same logic?

- Ans**
- ☐ 1. QNPS
 - ☐ 2. NQPS
 - ☒ 3. QNSP
 - ☐ 4. NQSP

Q.7 Study the following chart and answer the question that follows.



What is the total exports by Company X and Y in months of January and March?

- Ans**
- ☐ 1. 385 crore
 - ☐ 2. 375 crore
 - ☐ 3. 365 crore
 - ☒ 4. 380 crore

Q.8 The value of $\frac{11}{18} + \frac{7}{-27}$ is:

- Ans**
- ☐ 1. $-\frac{19}{27}$
 - ☐ 2. $-\frac{19}{54}$
 - ☒ 3. $\frac{19}{54}$
 - ☐ 4. $\frac{19}{27}$

Q.9 For a candidate to clear an examination, he/she must score 55% marks. If he/she gets 120 marks and fails by 78 marks, the total marks of the examination is:

- Ans**
- ☐ 1. 300
 - ☐ 2. 320
 - ☐ 3. 400
 - ☒ 4. 360

Q.10 Which hormone is present in greater concentration in areas of rapid cell division and promote cell division?

- Ans**
- ☐ 1. Absciscic acid
 - ☐ 2. Gibberellins
 - ☒ 3. Cytokinin
 - ☐ 4. Auxins

Q.11 At what rate (in percentage) per annum on simple interest will a sum of money double itself in 8 years?

- Ans**
- ☐ 1. 6.25%
 - ☐ 2. 2.5%
 - ☐ 3. 5.6%
 - ☒ 4. 12.5%

Q.12 Which of the following statements is correct related to male reproductive system?

- Ans**
- ☐ 1. Testes are located in the abdominal cavity.
 - ☐ 2. Formation of sperm takes place in seminal vessel.
 - ☒ 3. Testes secrete testosterone hormone.
 - ☐ 4. Sperm formation requires higher temperature than the normal body temperature.

Q.13 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 9 1 1 5 7 8 0 4 5 9 9 4 6 9 4 1 6 6 8 1 4 3 5 0 2 1 9 8 6 1 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 5
 - ☐ 2. 2
 - ☐ 3. 1
 - ☐ 4. 3

Q.14 What is the value of power if a man does 50 J of work in 10 s ?

- Ans**
- ☐ 1. 0.5 W
 - ☐ 2. 50 W
 - ☐ 3. 500 W
 - ☒ 4. 5 W

Q.15 The number of solutions to the pair of linear equations $5x - 3y = 7$ and $7x + 4y = 18$ is:

- Ans**
- ☐ 1. three
 - ☒ 2. one
 - ☐ 3. infinite
 - ☐ 4. none

Q.16 What is the full form of CNG and LPG, respectively?

- Ans**
- ☒ 1. Compressed Neutral Gas and Liquefied Pressured Gas
 - ☒ 2. Compressed Natural Gas and Liquefied Petroleum Gas
 - ☒ 3. Compressed Natural Gas and Liquefied Pressured Gas
 - ☒ 4. Compressed Neutral Gas and Liquefied Petroleum Gas

Q.17 The carbohydrates which are not used immediately are stored in the form of _____, which serves as the internal energy reserve to be used as and when required by the plant.

- Ans**
- ☒ 1. glucose
 - ☒ 2. cellulose
 - ☒ 3. starch
 - ☒ 4. glycogen

Q.18 As per the Hurun India rich list 2024, who replaced Reliance Industries chairman Mukesh Ambani?

- Ans**
- ☒ 1. Nikesh Arora
 - ☒ 2. Gautam Adani
 - ☒ 3. Nithin Kamath
 - ☒ 4. Jayshree Ullal

Q.19 What historic achievement did Manu Bhaker accomplish at the 2024 Paris Olympics?

- Ans**
- ☒ 1. First Indian female shooter to win an Olympic gold
 - ☒ 2. First Indian to win an Olympic medal in shooting
 - ☒ 3. First athlete of independent India to win two Olympic medals in a single edition
 - ☒ 4. First athlete to win medals in both individual and team events

Q.20 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GIN, JLQ, MOT, PRW, ?

- Ans**
- ☒ 1. ZUS
 - ☒ 2. SZU
 - ☒ 3. ZSU
 - ☒ 4. SUZ

Q.21 Select the INCORRECT pair.

- Ans**
- ☒ 1. Rice – digested in our body
 - ☒ 2. Protein – digested in our body
 - ☒ 3. Plastic – does not breakdown by the action of bacteria
 - ☒ 4. Coal – digested in our body

Q.22 Which body part in the human body is composed of stratified squamous epithelium?

- Ans**
- ☒ 1. Oesophagus
 - ☒ 2. Skin
 - ☒ 3. Lining of the kidney tubules
 - ☒ 4. Lining of the intestine

Q.23 According to the Bohr's model, what is the maximum number of electrons for the second energy level?

- Ans**
- ☒ 1. 8
 - ☐ 2. 2
 - ☐ 3. 4
 - ☐ 4. 6

Q.24 Which of the following is a property of liquids?

- Ans**
- ☐ 1. Liquids are rigid.
 - ☐ 2. Liquids have fixed shape.
 - ☐ 3. Liquids have no fixed volume.
 - ☒ 4. The rate of diffusion of liquids is higher than that of solids.

Q.25 Modes of reproduction in various organisms depend on the _____.

- Ans**
- ☐ 1. respiratory pigments of the organisms
 - ☐ 2. nervous system of the organisms
 - ☐ 3. nutritive strategy of the organisms
 - ☒ 4. body design of the organisms

Q.26 The sum of the squares of the sides of a rhombus is 1600 cm^2 . What is the perimeter of the rhombus?

- Ans**
- ☒ 1. 80 cm
 - ☐ 2. 40 cm
 - ☐ 3. 20 cm
 - ☐ 4. 60 cm

Q.27 A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

- Ans**
- ☐ 1. 4 hours
 - ☐ 2. 3 hours 15 min
 - ☐ 3. 4 hours 15 min
 - ☒ 4. 3 hours 45 min

Q.28 Cotton clothes are preferred in summer season because:

- Ans**
- ☐ 1. cotton does not absorb sweat
 - ☐ 2. cotton is unable to expose sweat to the atmosphere for evaporation
 - ☒ 3. cotton is a good absorber of water and exposes sweat to atmosphere for evaporation
 - ☐ 4. cotton is a bad absorber of water and exposes sweat to atmosphere for evaporation

Q.29 Consider the following statements about a mixture and determine which of the statements is/are correct.

1. A mixture has a variable composition.
2. In compounds, the composition of each new substance is always fixed.
3. A mixture shows the properties of the constituent substances.

Ans

- ☐ 1. Only 1 and 2
- ☒ 2. 1, 2 and 3
- ☐ 3. Only 1
- ☐ 4. Only 2 and 3

Q.30 As of October 2024 , India is the home to ____ UNESCO World Heritage Sites.

Ans

- ☐ 1. 53
- ☐ 2. 33
- ☐ 3. 63
- ☒ 4. 43

Q.31 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 87 :: 14 : Y

Ans

- ☐ 1. X = 8, Y = 154
- ☒ 2. X = 8, Y = 153
- ☐ 3. X = 9, Y = 153
- ☐ 4. X = 9, Y = 155

Q.32 The average of two numbers is M. If one number is N, then the other number is:

Ans

- ☐ 1. 2M
- ☐ 2. $M - N$
- ☐ 3. 2N
- ☒ 4. $2M - N$

Q.33 The term _____ refers to the densely packed kidney filtration unit.

Ans

- ☐ 1. Neurone
- ☒ 2. Nephron
- ☐ 3. Capillary
- ☐ 4. Glomerulus

Q.34 In a certain code language,

$A + B$ means 'A is the wife of B',

$A - B$ means 'A is the brother of B',

$A \times B$ means 'A is the father of B',

and $A \div B$ means 'A is the sister of B'.

How is P related to T if ' $P + Q - R \times S \div T$ '?

- Ans**
- ☐ 1. Mother's brother's wife
 - ☐ 2. Father's sister
 - ☒ 3. Father's brother's wife
 - ☐ 4. Mother

Q.35 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

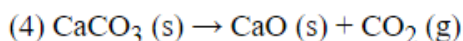
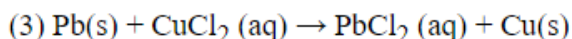
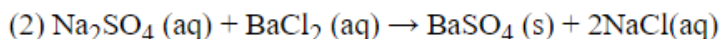
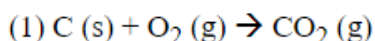
X : 72 :: 22 : Y

- Ans**
- ☐ 1. X = 18, Y = 96
 - ☒ 2. X = 12, Y = 132
 - ☐ 3. X = 18, Y = 132
 - ☐ 4. X = 12, Y = 110

Q.36 Which of the following transports food, carbon dioxide and nitrogenous wastes in a dissolved form?

- Ans**
- ☐ 1. Lymph
 - ☒ 2. Plasma
 - ☐ 3. Blood platelets
 - ☐ 4. Red blood corpuscles

Q.37 Which of the following is/are the example/s of double displacement reaction?



- Ans**
- ☐ 1. 1 and 4 only
 - ☐ 2. 1, 2 and 3 only
 - ☒ 3. Only 2
 - ☐ 4. 2 and 3 only

Q.38 Many nerve fibres are bound together by which tissue and make up a nerve?

- Ans**
- ☐ 1. Vascular tissue
 - ☒ 2. Connective tissue
 - ☐ 3. Epithelial tissue
 - ☐ 4. Meristematic tissue

Q.39 Pipe A is 3 times faster than pipe B. Both pipes together fill a tank in 36 min. How much time will pipe A alone take to fill the tank?

- Ans**
- ☐ 1. 156 min
 - ☐ 2. 80 min
 - ☒ 3. 48 min
 - ☐ 4. 100 min

Q.40 The pollen needs to be transferred from the stamen to the stigma. If this transfer of pollen occurs in the same flower, this phenomenon is known as:

- Ans**
- ☐ 1. spore formation
 - ☒ 2. self-pollination
 - ☐ 3. cross-pollination
 - ☐ 4. fertilisation

Q.41 The value of $\tan A + \frac{1}{\tan A}$ is:

- Ans**
- ☐ 1. $\operatorname{cosec} A \cot A$
 - ☒ 2. $\operatorname{cosec} A \sec A$
 - ☐ 3. $\cos A \sec A$
 - ☐ 4. $\operatorname{cosec} A \sin A$

Q.42 An amount is distributed among A, B and C in the ratio of 5: 7: 15. If B's share is ₹1,400 out of the total amount, then the total amount is:

- Ans**
- ☐ 1. ₹8,100
 - ☐ 2. ₹4,200
 - ☐ 3. ₹2,700
 - ☒ 4. ₹5,400

Q.43 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement: The bee population in the region has been steadily declining due to the widespread use of pesticides in agriculture.

Courses of Action:

- I. Introduce regulations that restrict the use of certain pesticides during peak pollination seasons.
- II. Establish urban beekeeping programmes to artificially boost the bee population and pollination efforts.

- Ans**
- ☐ 1. Only I follows
 - ☐ 2. Neither I nor II follows
 - ☐ 3. Only II follows
 - ☒ 4. Both I and II follow

Q.44 If the diameter and the height of a cylinder are 10 cm and 10.5 cm, respectively, then using $\pi = \frac{22}{7}$, find the volume of the cylinder.

- Ans**
- ☒ 1. 825 cm^3
 - ☐ 2. 985 cm^3
 - ☐ 3. 785 cm^3
 - ☐ 4. 888 cm^3

Q.45 At what rate (in percentage) per annum will a sum of money double itself in 16 years on simple interest?

- Ans**
- ☐ 1. 12.5%
 - ☐ 2. 5.6%
 - ☒ 3. 6.25%
 - ☐ 4. 2.5%

Q.46 Six people—Adam, Brad, Clara, David, Emily and Farah—are sitting in a straight line, facing north. Only one person sits to the left of Clara. Only one person sits between Clara and Brad. David sits second to the right of Emily. Adam is neither an immediate neighbour of Clara nor sits at the extreme end of the line.

Q. Who sits at the extreme right end of the line?

- Ans**
- ☐ 1. David
 - ☐ 2. Emily
 - ☐ 3. Brad
 - ☒ 4. Farah

Q.47 Which of the following terms defines the ability of metals to be drawn into thin wires?

- Ans**
- ☒ 1. Ductility
 - ☐ 2. Neither malleability nor ductility
 - ☐ 3. Both malleability and ductility
 - ☐ 4. Malleability

Q.48 Chami Murmu, an Indian environmental activist, was awarded the Padma Shri in 2024 for her work in founding the _____, which has planted over 3 million trees in Jharkhand.

- Ans**
- ☐ 1. Green India Mission
 - ☐ 2. Prakriti Raksha Abhiyan
 - ☒ 3. Sahayogi Mahila Bagraisai
 - ☐ 4. Van Mahotsav Foundation

Q.49 Seven people, A, B, D, L, X, Y and Z, are sitting in a row, facing north. Only five people sit between B and L. Z sits to the immediate left of L. Only one person sits between Z and D. A sits at some place to the left of Y but at some place to the right of X. Who sits third from the left end of the row?

- Ans**
- ☐ 1. Y
 - ☐ 2. X
 - ☐ 3. D
 - ☒ 4. A

Q.50 One atmosphere is equal to _____.

- Ans**
- ✓ 1. 1.01×10^5 Pa
 - ✗ 2. 1.01×10^6 Pa
 - ✗ 3. 1.01×10^{-5} Pa
 - ✗ 4. 1.01×10^{-6} Pa

Q.51 Why did the Government of India remove the 'monument of national importance' status from the statue of John Nicholson?

- Ans**
- ✗ 1. It was considered irrelevant to India's independence struggle.
 - ✗ 2. The statue was in a deteriorating condition.
 - ✓ 3. It was linked to British colonial legacy.
 - ✗ 4. The statue was found to be historically inaccurate.

Q.52 In a certain code language, 'over the top' is written as 'ak ot yh' and 'the rock is ' is coded as 'ot gb tk '. How is 'the' coded in the given language?

- Ans**
- ✗ 1. sy
 - ✓ 2. ot
 - ✗ 3. ql
 - ✗ 4. mr

Q.53 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

TX-VS-WY

UY-WT-XZ

- Ans**
- ✓ 1. OS-QN-RT
 - ✗ 2. IM-KH-LO
 - ✗ 3. LP-NK-OR
 - ✗ 4. FJ-HE-IL

Q.54 The third edition of the joint military exercise 'AUSTRALIND' is being conducted between the armies of which two countries?

- Ans**
- ✗ 1. India and Japan
 - ✓ 2. India and Australia
 - ✗ 3. India and New Zealand
 - ✗ 4. India and Singapore

Q.55 Simplify the given expression.

$$5 + 9 - 9 \div 3 \times 4$$

- Ans**
- ✓ 1. 2
 - ✗ 2. 6
 - ✗ 3. 3
 - ✗ 4. 5

Q.56 Which of the following are small-sized in animal cells while in plant cells these are very large in size?

- Ans**
- ✓ 1. Vacuoles
 - ✗ 2. Lysosomes
 - ✗ 3. Golgi apparatus
 - ✗ 4. Plastids

Q.57 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No car is a bus.

No bus is a plane.

Conclusions:

(I) No bus is a car.

(II) No car is a plane.

- Ans**
- ✓ 1. Only conclusion I follows
 - ✗ 2. Both conclusions I and II follow
 - ✗ 3. Neither conclusion I nor II follows
 - ✗ 4. Only conclusion II follows

Q.58 Among all the seven-coloured lights, which colour deviates the most after falling on a prism?

- Ans**
- ✗ 1. Yellow
 - ✗ 2. Indigo
 - ✓ 3. Violet
 - ✗ 4. Red

Q.59 $(x - y)(x + y)(x^2 + y^2)(x^4 + y^4)$ is equal to :

- Ans**
- ✗ 1. $x^{16} - y^{16}$
 - ✓ 2. $x^8 - y^8$
 - ✗ 3. $x^{16} + y^{16}$
 - ✗ 4. $x^8 + y^8$

Q.60 Simplify the given expression.

$$3 + 6 \times (5 + 4) \div 3 - 7$$

- Ans**
- ✗ 1. 11
 - ✓ 2. 14
 - ✗ 3. 15
 - ✗ 4. 16

Q.61 Which of the following statements is/are correct related to transportation?

- (i) Arteries are the vessels which carry blood away from the heart to various organs of the body.
- (ii) The arteries have thin and elastic walls.
- (iii) Veins have valves that ensure that blood flows only in one direction.

Ans

- ☐ 1. Only (i)
- ☒ 2. Only (i) and (iii)
- ☐ 3. (i), (ii) and (iii)
- ☐ 4. Only (i) and (ii)

Q.62 Two trains 135 m and 155 m in length, respectively, are running in opposite directions, one at the rate of 80 km/h and the other at the rate of 65 km/h. In how much time will they be completely clear of each other from the moment they meet?

Ans

- ☐ 1. 7.5 sec
- ☐ 2. 6.8 sec
- ☐ 3. 6.5 sec
- ☒ 4. 7.2 sec

Q.63 An organism simply splits into two equal halves during cell division. What is it known as?

Ans

- ☐ 1. Regeneration
- ☐ 2. Spore formation
- ☐ 3. Budding
- ☒ 4. Binary fission

Q.64 In which of the following states was the 4th Asmita Khelo India National Judo League/Ranking Judo Tournament 2024-25 held?

Ans

- ☐ 1. Madhya Pradesh
- ☒ 2. Kerala
- ☐ 3. Karnataka
- ☐ 4. Jharkhand

Q.65 Select the INCORRECT statement from the following options.

Ans

- ☐ 1. The kinetic energy of an object increases with the increase of its mass.
- ☒ 2. The kinetic energy is the energy possessed by an object due to its position.
- ☐ 3. The kinetic energy is the energy possessed by an object due to its motion.
- ☐ 4. The kinetic energy of an object increases with the increase of its velocity.

Q.66 An object weighs 60 N when measured on the Earth. What would be its weight when measured on the moon?
(Given, acceleration due to gravity (g) of the moon is 1/6 th of the g of the earth)

Ans

- ☐ 1. 70 N
- ☒ 2. 10 N
- ☐ 3. 40 N
- ☐ 4. 60 N

Q.67 Starting from rest, Raju attains a velocity of 24 m/s in a minute with his bicycle. The acceleration of the bicycle is:

- Ans**
- ☐ 1. 0 m/s^2
 - ☐ 2. 0.6 m/s^2
 - ☒ 3. 0.4 m/s^2
 - ☐ 4. 0.2 m/s^2

Q.68 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. CEG
 - ☐ 2. JLN
 - ☒ 3. FUT
 - ☐ 4. TVX

Q.69 How are three resistances 3Ω , 4Ω , and 6Ω connected in combination, so that their total resistance will be 13Ω ?

- Ans**
- ☐ 1. 3Ω in series with 6Ω and 4Ω in parallel
 - ☐ 2. All in parallel
 - ☒ 3. All in series
 - ☐ 4. Does not depend on any combination

Q.70 While subtracting -2 from $\frac{-3}{10}$, the resultant value is:

- Ans**
- ☒ 1. $1\frac{7}{10}$
 - ☐ 2. $1\frac{3}{10}$
 - ☐ 3. $1\frac{4}{5}$
 - ☐ 4. $1\frac{3}{5}$

Q.71 Which of the following expressions gives the correct formula for mass by mass percentage of a solution?

- Ans**
- ☐ 1. $((\text{Mass of solvent})/(\text{Mass of solution})) \times 100$
 - ☐ 2. $((\text{Volume of solute})/(\text{Mass of solution})) \times 100$
 - ☐ 3. $((\text{Mass of solute})/(\text{Volume of solution})) \times 100$
 - ☒ 4. $((\text{Mass of solute})/(\text{Mass of solution})) \times 100$

Q.72 Which of the following reactions is an example of decomposition reaction?

- Ans**
- ☐ 1. Burning of natural gas
 - ☐ 2. Formation of water from $\text{H}_2(\text{g})$ and $\text{O}_2(\text{g})$
 - ☐ 3. Burning of coal
 - ☒ 4. Silver chloride turns grey in sunlight

Q.73 The smallest 3-digit natural number that is completely divisible by 8 and 12 is:

- Ans**
- ☐ 1. 144
 - ☐ 2. 108
 - ☐ 3. 124
 - ☒ 4. 120

Q.74 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 % 8 4 5 3 @ # 1 * \$ 7 & 9 + Ω 6 £ (Right)

How many such numbers are there, each of which is immediately preceded by another number and also immediately followed by a symbol?

- Ans**
- ☐ 1. 2
 - ☐ 2. 0
 - ☐ 3. 3
 - ☒ 4. 1

Q.75 Which of the following points always lie(s) on the principal axis of a spherical mirror?

- i)Principal Focus
- ii)Point of incidence
- iii)Pole

- Ans**
- ☒ 1. Both (i) and (iii)
 - ☐ 2. Only (i)
 - ☐ 3. Only (iii)
 - ☐ 4. Both (ii) and (iii)

Q.76 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All apples are mangoes.

Some mangoes are lemons.

Conclusions:

(I) At least some mangoes are apples.

(II) Some apples are lemons.

- Ans**
- ☐ 1. Only conclusion II follows
 - ☐ 2. Neither conclusion I nor II follows
 - ☐ 3. Both conclusions I and II follow
 - ☒ 4. Only conclusion I follows

Q.77 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. EZU
 - ☒ 2. FAW
 - ☐ 3. WRM
 - ☐ 4. XSN

Q.78 If a train travelling with a velocity of 20 m/s undergoes a uniform acceleration of 4 m/s^2 , what is the value of its velocity in 5 seconds?

- Ans**
- ☒ 1. 40 m/s
 - ☐ 2. 80 m/s
 - ☐ 3. 16 m/s
 - ☐ 4. 60 m/s

Q.79 Electromagnetic Induction was discovered by:

- Ans**
- ☐ 1. Einstein
 - ☐ 2. Edison
 - ☒ 3. Faraday
 - ☐ 4. Newton

Q.80 Seven boxes, A, B, C, D, E, F and G, are kept one over the other but not necessarily in the same order. Only C is kept above D. Only two boxes are kept between D and F. Only G is kept below A. B is not kept immediately above F. Which box is kept fourth from the top ?

- Ans**
- ☐ 1. B
 - ☒ 2. E
 - ☐ 3. D
 - ☐ 4. H

Q.81 What will come in the place of '?' in the following equation, if '-' and 'x' are interchanged and '+' and '÷' are interchanged?

$$23 \times 13 - 7 \div 14 + 7 = ?$$

- Ans**
- ☐ 1. -56
 - ☐ 2. -76
 - ☐ 3. -92
 - ☒ 4. -66

Q.82 Select the correct equation(s) that relate(s) the final and initial velocity of a freely falling object with respect to time.

(A) $s = ut + 2at^2$

(B) $v = u + \frac{1}{2}at$

(C) $(v - u) = at$

- Ans**
- ☐ 1. Only (A)
 - ☐ 2. (A) and (B)
 - ☐ 3. (B) and (C)
 - ☒ 4. Only (C)

Q.83 Which of the following tissues is present in stems, around vascular bundles, in the veins of leaves and the hard covering of seeds and nuts?

- Ans**
- ☐ 1. Apical meristem
 - ☐ 2. Parenchyma
 - ☒ 3. Sclerenchyma
 - ☐ 4. Epidermis

Q.84 Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 9 + % 8 4 5 3 @ \$ 7 & Ω 6 # 1 * £ (Right)

How many such symbols are there, each of which is immediately preceded by another symbol and also immediately followed by a number?

- Ans**
- ☐ 1. 1
 - ☐ 2. 4
 - ☐ 3. 2
 - ☒ 4. 3

Q.85 If the mode of a data exceeds its mean by 16.2, then the mode exceeds the median by _____. (Use empirical formula to find the answer.)

- Ans**
- ☐ 1. 12.4
 - ☒ 2. 10.8
 - ☐ 3. 8.25
 - ☐ 4. 10.2

Q.86 A retailer permits a trade discount of 15%, followed by a cash discount of 20%, on an article. The net percentage of discount is:

- Ans**
- ☒ 1. 32%
 - ☐ 2. 31%
 - ☐ 3. 33%
 - ☐ 4. 34%

Q.87 If an object with a mass of 0.1 kg moves with a uniform velocity of $2ms^{-1}$, its kinetic energy is _____.

- Ans**
- ☐ 1. 0.1 joule
 - ☐ 2. 0.4 joule
 - ☐ 3. 0.05 joule
 - ☒ 4. 0.2 joule

Q.88 Out of an earning of ₹720, Rama spends 65%. How much does she save?

- Ans**
- ☐ 1. ₹316
 - ☒ 2. ₹252
 - ☐ 3. ₹350
 - ☐ 4. ₹390

Q.89 Who took the oath as the new Chief Minister of Haryana in the Assembly Election 2024?

- Ans**
- ☐ 1. Shri Om Prakash Chautala
 - ☐ 2. Shri Dushyant Chautala
 - ☐ 3. Shri Manohar Lal Khattar
 - ☒ 4. Shri Nayab Singh Saini

Q.90 When the selling price of a TV is ₹18,700, the shopkeeper incurs a loss of 15%. What should be the selling price of that TV so as to gain 15%?

- Ans**
- ☐ 1. ₹43,200
 - ☒ 2. ₹25,300
 - ☐ 3. ₹19,800
 - ☐ 4. ₹34,200

Q.91 If 'A' stands for '—', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '+', what will come in place of the question mark '?' in the following equation?

$$23\text{ D }18\text{ C }3\text{ B }5\text{ A }17 = ?$$

- Ans**
- ☐ 1. 26
 - ☐ 2. 46
 - ☒ 3. 36
 - ☐ 4. 56

Q.92 Silver ornaments become black after some time because silver reacts with _____ present in the air.

- Ans**
- ☐ 1. oxygen
 - ☐ 2. nitrogen
 - ☒ 3. sulphur
 - ☐ 4. carbon dioxide

Q.93 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

859, 768, 677, 586, 495, ?

- Ans**
- ☐ 1. 388
 - ☐ 2. 426
 - ☒ 3. 404
 - ☐ 4. 462

Q.94 Anu is two years older than Kanu, who is twice as old as Tanu. If the total of their ages is 32, then what is the difference in age of Anu and Tanu?

- Ans**
- ☐ 1. 14 years
 - ☒ 2. 8 years
 - ☐ 3. 7 years
 - ☐ 4. 12 years

Q.95 PQRS is a trapezium in which $QR \parallel PS$ and $PR = RS$. If $\angle PQR = 96^\circ$ and $\angle QPR = 34^\circ$, then what is the measure of $\angle PRS$?

- Ans**
- ☐ 1. 75°
 - ☐ 2. 70°
 - ☒ 3. 80°
 - ☐ 4. 65°

Q.96 The Lunar Polar Exploration Mission (LUPEX) is a planned collaborative lunar mission involving which two space agencies?

- Ans**
- ☐ 1. NASA and ESA
 - ☒ 2. ISRO and JAXA
 - ☐ 3. ISRO and NASA
 - ☐ 4. JAXA and CNSA

Q.97 C_2H_2 , C_2H_4 , and C_2H_6 belong to which group of hydrocarbons?

- Ans**
- ☐ 1. Alkane, alkyne, and alkene hydrocarbons, respectively
 - ☐ 2. Alkane, alkene, and alkyne hydrocarbons, respectively
 - ☐ 3. Alkene, alkyne, and alkane hydrocarbons, respectively
 - ☒ 4. Alkyne, alkene, and alkane hydrocarbons, respectively

Q.98 The focal length of a spherical mirror is 12 cm, then the radius of curvature of this mirror will be:

- Ans**
- ☐ 1. 3cm
 - ☒ 2. 24cm
 - ☐ 3. 2cm
 - ☐ 4. 6cm

Q.99 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

FJN, IMQ, LPT, OSW, ?

- Ans**
- ☐ 1. SUY
 - ☒ 2. RVZ
 - ☐ 3. RUY
 - ☐ 4. RUZ

Q.100 Pranay starts from Point A and drives 45 km towards North. He then takes a right turn, drives 35 km, turns right and drives 75 km. He then takes a right turn and drives 25 km. He takes a final right turn, drives 30 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 10 km towards North
 - ☐ 2. 10 km towards South
 - ☐ 3. 10 km towards East
 - ☒ 4. 10 km towards West

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	23/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 A resistor whose value $R = 10 \Omega$ is connected to a 10-volt battery. What will be the power P and the amount of heat H generated in one minute?

- Ans**
- ☒ 1. $P = 100 \text{ W}, H = 6000 \text{ J}$
 - ☒ 2. $P = 1 \text{ W}, H = 60 \text{ J}$
 - ☒ 3. $P = 20 \text{ W}, H = 1200 \text{ J}$
 - ☒ 4. $P = 10 \text{ W}, H = 600 \text{ J}$

Q.2 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) # 1 * £ 5 3 2 9 + % 8 4 6 @ \$ 7 & Ω (Right)

How many such symbols are there, each of which is immediately preceded by a number and also immediately followed by another symbol?





- Ans**
- ☒ 1. 5
 - ☒ 2. 3
 - ☒ 3. 2
 - ☒ 4. 4

Q.3 Decomposition of limestone to quick lime and carbon dioxide is an example of which of the following types of reaction?

- Ans**
- ☒ 1. Reduction reaction
 - ☒ 2. Thermal decomposition
 - ☒ 3. Photochemical decomposition
 - ☒ 4. Oxidation reaction

Q.4 Which of the following statements is/are correct about reduction?

- a) Loss of oxygen
- b) Gain of hydrogen
- c) Gain of oxygen
- d) Loss of hydrogen

Ans  1. Only a and d
 2. Only a and b
 3. Only b and c
 4. Only d

Q.5 In a certain code language, 'PIER' is coded as '1524' and 'RILE' is coded as '5321'. What is the code for 'P' in the given code language?

Ans  1. 2
 2. 4
 3. 1
 4. 5

Q.6 Which of the following substances experiences the least change in shape when subjected to a change in pressure?

Ans  1. Plasma
 2. Liquid
 3. Gas
 4. Solid

Q.7 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. Only two people sit between F and K when counted from the right of F. Only two people sit between K and C. Only three people sit between F and D. B sits to the immediate left of L.

Who sits third to the left of E?

Ans  1. B
 2. L
 3. F
 4. K

Q.8 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All laptops are mobiles.





Some mobiles are televisions.

All televisions are radios.

Conclusions:

(I) Some radios are televisions.

(II) All televisions are mobiles.

Ans  1. Neither conclusion (I) nor (II) follows.
 2. Both conclusions (I) and (II) follow.
 3. Only conclusion (I) follows.
 4. Only conclusion (II) follows.

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Q.9 Two numbers are in the ratio 7 : 5. If their sum is 360, then the difference between them will be:

- Ans
- ☐ 1. 80
 - ☐ 2. 70
 - ☐ 3. 90
 - ☒ 4. 60

Q.10 Which of the following statements is correct about transport in plants?

- Ans
- ☐ 1. The phloem moves water and minerals obtained from the soil.
 - ☒ 2. Plants have low energy needs and use relatively slow transport systems.
 - ☐ 3. The xylem transports products of photosynthesis from the leaves where they are synthesised to other parts of the plant.
 - ☐ 4. In herbs and shrubs, the distances over which transport systems have to operate are very large.

Q.11 Who among the following has been appointed as the new chief of BrahMos Aerospace (November 2024)?

- Ans
- ☐ 1. Dr. Riaz Syed
 - ☒ 2. Dr. Jaiteerth Raghavendra Joshi
 - ☐ 3. Dr. Vinay Agarwwal
 - ☐ 4. Dr. Murali Nethi

Q.12 Evaluate the given expression.

$$\left(\frac{1}{4}\right)^{(-1/2)}$$

- Ans
- ☐ 1. $\frac{1}{16}$
 - ☒ 2. 2
 - ☐ 3. $\frac{1}{2}$
 - ☐ 4. $\sqrt{2}$

Q.13 1.25% of ₹1,600 is:

- Ans
- ☐ 1. ₹5
 - ☐ 2. ₹25
 - ☒ 3. ₹20
 - ☐ 4. ₹17.50

Q.14 A solution contains 20 g of common salt in 280 g of water. What is the concentration in terms of mass by mass percentage of the solution?

- Ans
- ☐ 1. 0.66%
 - ☐ 2. 11.1%
 - ☐ 3. 66.6%
 - ☒ 4. 6.66%

Q.15 Which of the following would help a few variants of bacteria in a population living in temperate waters to survive and grow further, if the water temperature were to be increased by global warming?

- Ans**
- ☒ 1. Resistant to heat
 - ☐ 2. Resistant to cold waves
 - ☐ 3. Resistant to water
 - ☐ 4. Resistant to wind pressure

Q.16 Which law states that the current flowing through a conductor is directly proportional to the voltage applied across it, provided the temperature and other physical conditions remain constant?

- Ans**
- ☐ 1. Joule's law
 - ☒ 2. Ohm's law
 - ☐ 3. Faraday's law
 - ☐ 4. Newton's law

Q.17 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 9 + Ω 6 £ * S 1 & 8 4 7 2 % 5 3 @ # (Right)

How many such numbers are there, each of which is immediately preceded by a symbol and also immediately followed by another number?

- Ans**
- ☐ 1. 1
 - ☒ 2. 2
 - ☐ 3. 3
 - ☐ 4. 0

Q.18 Vandita scored an overall average of 80% marks in five subjects taken together, viz. Hindi, Science, Maths, English and Sanskrit, wherein the maximum marks of each subject were 105. How many marks did Vandita score in Science if she scored 89 marks in Hindi, 92 marks in Sanskrit, 98 marks in Maths and 81 marks in English?

- Ans**
- ☐ 1. 70
 - ☐ 2. 75
 - ☒ 3. 60
 - ☐ 4. 65

Q.19 Which of the following pigments is present in the red blood corpuscles of human beings?

- Ans**
- ☐ 1. Xanthophyll
 - ☐ 2. Chlorophyll
 - ☒ 3. Haemoglobin
 - ☐ 4. Melanin

Q.20 The ratio of milk to water in 10 litres of a mixture is 3 : 2. The quantity of water in the mixture is:

- Ans**
- ☐ 1. 6 litres
 - ☐ 2. 10 litres
 - ☐ 3. 5 litres
 - ☒ 4. 4 litres

Q.21 The value of $\frac{9}{-16} + \frac{-5}{-12}$ is:

- Ans
- ☐ 1. $\frac{4}{28}$
 - ☐ 2. $\frac{-4}{28}$
 - ☐ 3. $\frac{-7}{24}$
 - ☒ 4. $\frac{-7}{48}$

Q.22 Under 'PM Vishwakarma Yojana' benefits 2024 a loan of ₹ _____ is given at 5% interest.

- Ans
- ☐ 1. 2,00,000
 - ☐ 2. 4,00,000
 - ☐ 3. 5,00,000
 - ☒ 4. 3,00,000

Q.23 If future shoot hidden in a germinating seed is called plumule, then future root of the germinating seed would be _____.

- Ans
- ☐ 1. cotyledon
 - ☐ 2. sepal
 - ☐ 3. petal
 - ☒ 4. radicle

Q.24 Face cream belongs to which type of colloid form?

- Ans
- ☐ 1. Solid
 - ☐ 2. Foam
 - ☐ 3. Gel
 - ☒ 4. Emulsion

Q.25 A student took iron nails and dipped them in solution 'X' for twenty minutes. After some time he noticed that the colour of the iron nails became brownish.

Identify solution 'X' in which the nail was dipped.

- Ans
- ☐ 1. Iron sulphate
 - ☒ 2. Copper sulphate
 - ☐ 3. Lead sulphate
 - ☐ 4. Zinc sulphate

Q.26 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DBL, IEN, NHP, SKR, ?

- Ans
- ☒ 1. XNT
 - ☐ 2. YMT
 - ☐ 3. YNT
 - ☐ 4. SMX

Q.27 A pair of parallel lines is intersected by a transversal such that $\angle 1$ and $\angle 2$ form a pair of alternate interior angles. If $m\angle 1 = 75^\circ$, what is the measure of $\angle 2$?

- Ans**
- ☒ 1. 75°
 - ☐ 2. 105°
 - ☐ 3. 65°
 - ☐ 4. 15°

Q.28 What sum will earn a simple interest of ₹1,056 in 3 years at 16% per year rate of interest?

- Ans**
- ☒ 1. ₹2,200
 - ☐ 2. ₹1,600
 - ☐ 3. ₹2,000
 - ☐ 4. ₹1,800

Q.29 If the mode of the following data is 6, then find the value of k.

2, 4, 6, 7, 5, 6, 10, 6, 7, $2k + 1$, 9, 7, 13

- Ans**
- ☐ 1. 3
 - ☐ 2. 3.5
 - ☐ 3. 2
 - ☒ 4. 2.5

Q.30 According to the Statistical Appendix of the Economic Survey 2023-24, what was India's Infant Mortality Rate (IMR) in 2020?

- Ans**
- ☒ 1. 28 per 1000 live births
 - ☐ 2. 30 per 1000 live births
 - ☐ 3. 42 per 1000 live births
 - ☐ 4. 34 per 1000 live births

Q.31 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 83 :: 17 : Y

- Ans**
- ☐ 1. X = 11, Y = 119
 - ☐ 2. X = 12, Y = 119
 - ☐ 3. X = 11, Y = 118
 - ☒ 4. X = 12, Y = 118

Q.32 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$25 + 15 - 9 + 10 \times 5 = ?$$

- Ans**
- ☐ 1. 55
 - ☐ 2. 82
 - ☒ 3. 28
 - ☐ 4. -22

Q.33 The mean and mode of a set of data are 58.7 and 61.1, respectively. Find the median of the data, using the empirical formula.

- Ans**
- ✓ 1. 59.5
 - ✗ 2. 55.2
 - ✗ 3. 54.6
 - ✗ 4. 55.8

Q.34 What kind of energy is acquired by a stretched rubber band?

- Ans**
- ✗ 1. Light energy
 - ✗ 2. Kinetic energy
 - ✓ 3. Potential energy
 - ✗ 4. Thermal energy

Q.35 What will be the amount after 1 year if a sum of ₹7,500 is invested at 8% compound interest per annum, compounded half-yearly?

- Ans**
- ✗ 1. ₹8,300
 - ✓ 2. ₹8,112
 - ✗ 3. ₹8,220
 - ✗ 4. ₹8,140

Q.36 Find the correct number of atoms for a glucose molecule.

- Ans**
- ✗ 1. 6
 - ✓ 2. 24
 - ✗ 3. 12
 - ✗ 4. 18

Q.37 Simplify the following expression:

$$\frac{5.32 \times 5.32 - 3.64 \times 3.64}{1.68}$$

- Ans**
- ✗ 1. 8.99
 - ✓ 2. 8.96
 - ✗ 3. 8.94
 - ✗ 4. 8.86

Q.38 Ginny starts from point A and drives 7 km towards the North. She takes two simultaneous left turns and drives 3 km and 4 km, respectively. She then takes a right turn and drives 2 km. She takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should she drive to reach Point A again? (All turns are 90 degrees only unless specified.)

- Ans**
- ✗ 1. 3 km East
 - ✗ 2. 3 km West
 - ✗ 3. 4 km East
 - ✓ 4. 5 km East

Q.39 Manish bought an electronic gadget with a 25% discount on the MRP. He made a profit of ₹600 by selling it for ₹18,600. The marked price of the electronic gadget was:

- Ans**
- ☐ 1. ₹24,200
 - ☒ 2. ₹24,000
 - ☐ 3. ₹25,600
 - ☐ 4. ₹22,000

Q.40 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

10, 18, 38, 74, 150, ?

- Ans**
- ☐ 1. 274
 - ☒ 2. 298
 - ☐ 3. 300
 - ☐ 4. 280

Q.41 In a situation where we are injured and start bleeding, the bleeding could lead to a loss of pressure that could reduce the efficiency of the pumping system. To avoid this, which cells mainly help to clot blood at the injury point?

- Ans**
- ☒ 1. Blood platelets
 - ☐ 2. White blood corpuscles
 - ☐ 3. Lymph
 - ☐ 4. Red blood corpuscles

Q.42 The force exerted by an object perpendicular to the surface is called:

- Ans**
- ☐ 1. pressure
 - ☒ 2. thrust
 - ☐ 3. weight
 - ☐ 4. buoyancy

Q.43 What similarities do plastids share with mitochondria?

- Ans**
- ☐ 1. Both contain chlorophyll.
 - ☒ 2. Both contain their own DNA and ribosomes.
 - ☐ 3. Both produce ATPs.
 - ☐ 4. Both are present only in plant cells.

Q.44 In its October 2024 meeting, the RBI Monetary Policy Meeting kept the _____ unchanged at 6.5%.

- Ans**
- ☐ 1. cash reserve ratio
 - ☐ 2. bank rate
 - ☐ 3. statutory liquidity ratio
 - ☒ 4. repo rate

Q.45 Radhika's teacher is 60 years old. He is 20 years older than twice Radhika's age. Radhika's age is:

- Ans**
- ☐ 1. 25 years
 - ☐ 2. 15 years
 - ☒ 3. 20 years
 - ☐ 4. 30 years

Q.46 What is the value of the radius of the earth?

- Ans**
- ☐ 1. 7400 km
 - ☒ 2. 6400 km
 - ☐ 3. 8400 km
 - ☐ 4. 5400 km

Q.47 The oesophagus and the lining of the mouth are also covered with:

- Ans**
- ☐ 1. cuboidal epithelium
 - ☒ 2. squamous epithelium
 - ☐ 3. ciliated columnar epithelium
 - ☐ 4. glandular epithelium

Q.48 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. WZC
 - ☐ 2. NQT
 - ☒ 3. TWY
 - ☐ 4. YBE

Q.49 The value of


$(1 + \cot^2 \theta)(1 + \cos \theta)(1 - \cos \theta) - (1 - \sin \theta)(1 + \sin \theta)(1 + \tan^2 \theta)$ is: (θ lies in first quadrant)


- Ans**
- ☒ 1. 0
 - ☐ 2. 1
 - ☐ 3. 4
 - ☐ 4. 2


Q.50 Solid CO_2 gets converted directly into gaseous state on decrease of pressure to:


- Ans**
- ☒ 1. 1 atmosphere
 - ☐ 2. 5 atmosphere
 - ☐ 3. 20 atmosphere
 - ☐ 4. 10 atmosphere

Q.51 Which of the following is INCORRECTLY matched related to the excretory system of humans?


Ans  1. Urethra – a pair


 2. Urinary bladder – unpaired


 3. Ureter – a pair


 4. Kidney – a pair

Q.52 In a certain code system, 'sparkling stars twinkle' is coded as 'lajv epvz apxv', and 'stars twinkle brightly' is coded as 'epvz rkpx apxv'. What is the code for 'brightly' in the given code language?


Ans  1. epvz


 2. lajv


 3. apxv


 4. rkpx

Q.53 An electric bulb is connected to a 200 V generator. The current drawn by the bulb is 0.1 A. What is the power of the bulb?


Ans  1. 10 W


 2. 20 W


 3. 2 W


 4. 200 W

Q.54 Which of the following changes is NOT specific to teenage?


Ans  1. Thinner hair on legs and arms


 2. Increase in height


 3. Thick hair in armpits


 4. Increase in breast size

Q.55 Which gas is given out when metals react with dilute hydrochloric acid?


Ans  1. Chlorine


 2. Nitrogen


 3. Oxygen


 4. Hydrogen

Q.56 What is the overall Sustainable Development Goal (SDG) score for India for the year 2023-24 as reported by NITI Aayog?


Ans  1. 71


 2. 75


 3. 65


 4. 80

Q.57 A constant force F acts on a box of mass 10 kg for a duration of 2 s. It increases the object's velocity from 6 m/s to 10 m/s. The magnitude of the applied force F is:

Ans  1. 25 N

 2. 50 N

 3. 20 N

 4. 40 N

Q.58 Four sandstone replicas of the iconic Konark wheels from the Konark Temple have been installed at (the) _____.

- Ans**
- ☐ 1. Red Fort
 - ☐ 2. India Gate
 - ☐ 3. Qutub Minar
 - ☒ 4. Rashtrapati Bhavan's Cultural Centre and Amrit Udyan

Q.59 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explains the event/observation/information given in the statement.

Statement - Even though Town B has a rich history and many ancient landmarks, it is not a popular tourist destination.

I. The town has poor public transportation and limited accommodation options.

II. Town B is located near a popular beach destination.

- Ans**
- ☐ 1. Both I and II are possible reasons
 - ☐ 2. Only II is a possible reason
 - ☒ 3. Only I is a possible reason
 - ☐ 4. Neither I nor II is a possible reason

Q.60 Which statement is correct for unsaturated hydrocarbons?

- Ans**
- ☐ 1. Methane, ethane and butane are unsaturated hydrocarbons.
 - ☐ 2. Alkane, alkenes and alkynes are unsaturated hydrocarbons.
 - ☒ 3. Alkenes and alkynes are unsaturated hydrocarbons.
 - ☐ 4. Cyclo pentane and hexane are unsaturated hydrocarbons.

Q.61 The Readjustment of Representation of Scheduled Tribes in Assembly Constituencies of the State of Goa Bill, 2024, was introduced in the Lok Sabha on _____.

- Ans**
- ☐ 1. 15 September 2024
 - ☐ 2. 5 October 2024
 - ☐ 3. 8 August 2024
 - ☒ 4. 5 August 2024

Q.62 Which hormone helps in development of the female sex organs and regulates the menstrual cycle?

- Ans**
- ☐ 1. Adrenaline
 - ☐ 2. Thyroxin
 - ☒ 3. Oestrogen
 - ☐ 4. Testosterone

Q.63 Simplify the given expression.

$$20 + \{10 - 5 + (7 - 3)\}$$

- Ans**
- ☐ 1. 27
 - ☐ 2. 28
 - ☐ 3. 26
 - ☒ 4. 29

Q.64 Which metals produce hydrogen gas when treated with very dilute nitric acid?

- Ans**
- ✓ 1. Magnesium (Mg) and manganese (Mn)
 - ✗ 2. Copper (Cu) and cobalt (Co)
 - ✗ 3. Manganese (Mn) and cobalt (Co)
 - ✗ 4. Magnesium (Mg) and copper (Cu)

Q.65 A cistern has two taps attached to it. Tap B can empty the cistern in 45 minutes. But Tap A can fill the cistern in just 30 minutes. Rohit started both taps unknowingly but realised his mistake after 30 minutes. He immediately closed Tap B. Now after this, in how much time will the cistern be filled?

- Ans**
- ✗ 1. 15 min
 - ✓ 2. 20 min
 - ✗ 3. 30 min
 - ✗ 4. 45 min

Q.66 What determines the colour of scattered light in the Tyndall effect?

- Ans**
- ✗ 1. The angle of refraction of the emerging light.
 - ✗ 2. The distance between the source of light and the scattering particles.
 - ✓ 3. The size of the scattering particles.
 - ✗ 4. The angle of incidence of the incoming light.

Q.67 Vaibhav ranked 7th from the top and 32nd from the bottom in his class. How many students are there in the class?

- Ans**
- ✗ 1. 36
 - ✓ 2. 38
 - ✗ 3. 39
 - ✗ 4. 37

Q.68 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

JTQ, HRS, FPU, DNW, ?

- Ans**
- ✗ 1. BMZ
 - ✗ 2. ALZ
 - ✓ 3. BLY
 - ✗ 4. ZAL

Q.69 Rays of the Sun converge at a point of 30 cm in front of a concave mirror. Where should the object be placed so that the size of the image is equal to the size of the object?

- Ans**
- ✓ 1. 60 cm in front of the mirror
 - ✗ 2. Between 30 and 60 cm in front of the mirror
 - ✗ 3. More than 30 cm in front of the mirror
 - ✗ 4. 30 cm in front of the mirror

Q.70 In an electric bulb, the electrical energy is converted into _____ energy.

- Ans**
- ✗ 1. Sound
 - ✗ 2. Wind
 - ✗ 3. Potential
 - ✓ 4. Light

Q.71 The HCF of 2410 and 2700 is:

- Ans**
- ☐ 1. 5
 - ☐ 2. 1
 - ☒ 3. 10
 - ☐ 4. 2

Q.72 When we eat something we like, our mouth waters by a fluid called saliva. In this situation, which enzymes break starch into simple sugar?

- Ans**
- ☒ 1. Amylase enzymes
 - ☐ 2. Pancreatic enzymes
 - ☐ 3. Trypsin enzymes
 - ☐ 4. Pepsin enzymes

Q.73 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some shirts are pants.

Some pants are coats.

Conclusions:

(I) Some pants are not shirts.

(II) Some shirts are coats.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☐ 2. Only conclusion II follows
 - ☒ 3. Neither conclusion I nor II follows
 - ☐ 4. Only conclusion I follows

Q.74 Ali, Bob, Carol, Dave, Elma and Frank are sitting around a circular table facing the centre. Ali sits second to the left of Bob. Carol sits third to the right of Bob. Dave sits to the immediate left of Carol. Elma sits to the immediate left of Bob.

How many people sit between Elma and Frank when counted from the right of Elma ?

- Ans**
- ☐ 1. Two
 - ☐ 2. Zero
 - ☒ 3. One
 - ☐ 4. Three

Q.75 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

PU-RN-ST

SX-UQ-VW

- Ans**
- ☐ 1. HM-JF-KN
 - ☐ 2. QV-SO-TW
 - ☐ 3. EJ-GC-HK
 - ☒ 4. KP-MI-NO

Q.76 Select the INCORRECT statement related to tropism.

- Ans**
- ✓ 1. Phototropism – movement towards water
 - ✗ 2. Chemotropism – movement towards chemical
 - ✗ 3. Hydrotropism – movement towards water
 - ✗ 4. Geotropism – in response to the pull of earth or gravity

Q.77 Which of the following sports personalities received the Padma Shri in 2024 for their contribution to sports?

- Ans**
- ✗ 1. Manika Batra
 - ✗ 2. PV Sindhu
 - ✓ 3. Joshna Chinappa
 - ✗ 4. Vinesh Phogat

Q.78 Which of the following is INCORRECT about parenchyma?

- Ans**
- ✓ 1. It allows the bending of various parts of a plant like tendrils and stems of climbers without breaking.
 - ✗ 2. The cells of parenchyma are living cells and are usually loosely arranged.
 - ✗ 3. It consists of relatively unspecialised cells with thin cell walls.
 - ✗ 4. In aquatic plants, large air cavities are present in parenchyma to help them float.

Q.79 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 1 6 6 2 4 9 3 5 3 7 1 8 5 2 7 8 1 8 4 5 1 5 7 6 9 2 9 (Right)

How many such even digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an odd digit?

- Ans**
- ✗ 1. 2
 - ✗ 2. 4
 - ✗ 3. 3
 - ✓ 4. 5

Q.80 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✓ 1. KUP
 - ✗ 2. UZE
 - ✗ 3. BGL
 - ✗ 4. PUZ

Q.81 What is the initial speed of any object if it is dropped from a height of 50 m?

- Ans**
- ✗ 1. 20 m/s
 - ✓ 2. 0
 - ✗ 3. 25 m/s
 - ✗ 4. 50 m/s

Q.82 If A means +, B means −, C means ×, D means ÷, then what will come in place of the question mark (?) in the following equation?

$$14 \text{ D } 2 \text{ A } 10 \text{ B } 3 \text{ C } 5 = ?$$

- Ans**
- ☒ 1. 1
 - ☒ 2. 3
 - ☒ 3. 2
 - ☒ 4. 0

Q.83 A spherical mirror diverges a beam of light, which is incident on it. Which of the following statement(s) about the mirror is/are true?

- i) The mirror used is convex.
- ii) The mirror has positive focal length.
- iii) The image formed by this mirror can be seen on a screen.

- Ans**
- ☒ 1. Both (ii) and (iii)
 - ☒ 2. Only (i)
 - ☒ 3. Both (i) and (ii)
 - ☒ 4. Only (iii)

Q.84 _____ bagged Santosh Trophy title by beating Goa by 1-0 in the final of the 77th National Football Championship at the Golden Jubilee Stadium, on 9 March 2024.

- Ans**
- ☒ 1. Services
 - ☒ 2. West Bengal
 - ☒ 3. Kerala
 - ☒ 4. Mizoram

Q.85 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

$$X : 30 :: 12 : Y$$

- Ans**
- ☒ 1. $X = 9, Y = 36$
 - ☒ 2. $X = 10, Y = 42$
 - ☒ 3. $X = 10, Y = 39$
 - ☒ 4. $X = 9, Y = 39$

Q.86 Who has taken over as the 26th Director General of the Indian Coast Guard?

- Ans**
- ☒ 1. Rajendra Singh
 - ☒ 2. KN Satyanand
 - ☒ 3. Paramesh Sivamani
 - ☒ 4. Radhakrishnan S

Q.87 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is T related to W if 'T ÷ U x V + W - X'?

- Ans**
- ✓ 1. Brother
 - ✗ 2. Father
 - ✗ 3. Father's father
 - ✗ 4. Father's brother

Q.88 The sum of the two numbers is 58 and one of them exceeds the other by 18. Find the greater number.

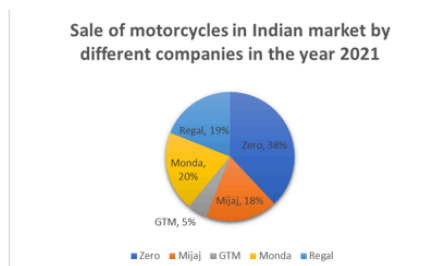
- Ans**
- ✗ 1. 30
 - ✗ 2. 36
 - ✗ 3. 40
 - ✓ 4. 38

Q.89 How many numbers between 11 and 90 are divisible by 7?

- Ans**
- ✗ 1. 12
 - ✗ 2. 10
 - ✗ 3. 13
 - ✓ 4. 11

Q.90 Study the following pie-chart and answer the question that follows.

The following pie-chart shows the breakup of the percentage sale of motorcycles by different companies in India the year 2021.



If the total motorcycles sold in India in the year 2021 was 25,00,000, then what was the number of motorcycles sold by GTM in India in the year 2021?

- Ans**
- ✗ 1. 2,00,000
 - ✗ 2. 1,75,000
 - ✓ 3. 1,25,000
 - ✗ 4. 1,50,000

Q.91 Which of the following is absent in cells of meristematic tissue?

- Ans**
- ☐ 1. Cytoplasm
 - ☐ 2. Cell walls
 - ☒ 3. Vacuoles
 - ☐ 4. Nuclei

Q.92 Mr. Saxena bought some pens at the rate of ₹150 per dozen. He sold them for ₹15 each. What is his profit/loss percentage?

- Ans**
- ☒ 1. 20% profit
 - ☐ 2. 18.5% profit
 - ☐ 3. 28% loss
 - ☐ 4. 37.5% loss

Q.93 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

EA-GC-IK

HD-JF-LN

- Ans**
- ☒ 1. KG-MI-OQ
 - ☐ 2. LG-NI-OQ
 - ☐ 3. LG-MI-OR
 - ☐ 4. KG-NI-OR

Q.94 The area of a square is 4096 sq cm. Find the ratio of the breadth and the length of a rectangle whose length is twice the side of the square and breadth is 24 cm less than the side of the square.

- Ans**
- ☒ 1. 5 : 16
 - ☐ 2. 18 : 5
 - ☐ 3. 7 : 16
 - ☐ 4. 5 : 32

Q.95 A policeman and a thief start from the same place and walk at the rate of 5 km/h and 5.5 km/h, respectively. How much time will they take to be 9.5 km apart, if they walk in the same direction?

- Ans**
- ☐ 1. 17 hrs
 - ☐ 2. 4 hrs 15 min
 - ☐ 3. 2 hrs 55 min
 - ☒ 4. 19 hrs

Q.96 Which of the following statements is/are correct?

- (i) Suspension is a heterogeneous mixture.
- (ii) The particles of a suspension scatter a beam of light passing through it and make its path visible.
- (iii) The solute particles settle down when a suspension is left undisturbed, that is, a suspension is unstable.

- Ans**
- ☒ 1. i, ii and iii
 - ☐ 2. Only i and ii
 - ☐ 3. Only i
 - ☐ 4. Only ii and iii

Q.97 Pipes A and B can fill a tank for 8 hours and 10 hours, respectively, and pipe C can empty the full tank in 12 hours. All three pipes are opened together, but pipe A is closed after 4 hours. In how many hours will the remaining part of tank be filled?

- Ans**
- ☐ 1. 30
 - ☐ 2. 22
 - ☐ 3. 24
 - ☒ 4. 26

Q.98 The area (in cm^2) of an equilateral triangle whose height is 6 cm, is:

- Ans**
- ☐ 1. $\frac{9\sqrt{3}}{4}$
 - ☐ 2. $6\sqrt{3}$
 - ☐ 3. $\frac{3\sqrt{3}}{2}$
 - ☒ 4. $12\sqrt{3}$

Q.99 Which of the following statements is NOT correct?

- Ans**
- ☐ 1. The speed of light in the given medium is different for different colours,
 - ☐ 2. The incident ray, refracted ray and normal to the surface at incidence lie in the same plane.
 - ☒ 3. The angle of incidence and refraction are equal.
 - ☐ 4. The speed of light in different media is different.

Q.100 Which of the following is the correct formula for ethyne?

- Ans**
- ☐ 1. C_2H_4
 - ☐ 2. C_2H_6
 - ☒ 3. C_2H_2
 - ☐ 4. CH_4

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	24/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 7 0 6 0 6 7 7 2 7 6 1 5 0 1 9 2 9 2 2 6 5 9 2 4 0 0 7 7 3 8 (Right)

What is the sum of the 5th digit from the left and the 10th digit from the right?

- Ans**
- ☒ 1. 9
 - ☒ 2. 13
 - ☒ 3. 10
 - ☒ 4. 11

Q.2 A fruit vendor bought 800 apples for ₹4,800. He spent ₹800 on transportation. For how much should he sell each apple to get a profit of ₹10 on each apple?

- Ans**
- ☒ 1. ₹32
 - ☒ 2. ₹76
 - ☒ 3. ₹12
 - ☒ 4. ₹17

Q.3 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EGK, HJN, KMQ, NPT, ?

- Ans**
- ☒ 1. SQW
 - ☒ 2. QWS
 - ☒ 3. QSW
 - ☒ 4. SWQ

Q.4 A pair of parallel lines is intersected by a transversal such that $\angle 1$ and $\angle 2$ form a pair of interior angles on the same side of the transversal. If $m\angle 1 = 65^\circ$, what is the measure of $\angle 2$?

- Ans**
- ☒ 1. 95°
 - ☒ 2. 65°
 - ☒ 3. 115°
 - ☒ 4. 145°

Q.5 The motion of a freely falling body is an example of a:

- Ans**
- ✓ 1. uniformly accelerated motion
 - ✗ 2. non-uniformly accelerated motion
 - ✗ 3. uniform speed motion
 - ✗ 4. uniform velocity motion

Q.6 Ramesh has invested ₹1,232 at 6% p.a. simple interest in a bank. What amount will he get after 3 years?

- Ans**
- ✗ 1. ₹1,448.76
 - ✓ 2. ₹1,453.76
 - ✗ 3. ₹1,485.80
 - ✗ 4. ₹1,416.80

Q.7 The Defence Budget for the Financial Year 2024-25 constitutes what percentage of the total Union Budget?

- Ans**
- ✗ 1. 14.8%
 - ✗ 2. 11.2%
 - ✗ 3. 10.5%
 - ✓ 4. 12.90%

Q.8 In a common salt/sodium chloride (NaCl), ions of which element is positively charged and negatively charged, respectively?

- Ans**
- ✓ 1. Na ions are positively charged, and Cl ions are negatively charged.
 - ✗ 2. Cl ions are positively charged, and Na ions are negatively charged.
 - ✗ 3. Ions of both Na and Cl are negatively charged.
 - ✗ 4. Ions of both Na and Cl are positively charged.

Q.9 Which of the following statements is/are correct regarding the effects of changes in pressure on the states of matter?

Statement I: Applying pressure and reducing temperature can liquefy gases.

Statement II: Solid carbon dioxide is stored under high pressure.

- Ans**
- ✗ 1. Neither statement I nor II is correct.
 - ✗ 2. Only statement I is correct.
 - ✗ 3. Only statement II is correct.
 - ✓ 4. Both statements I and II are correct.

Q.10 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ✗ 1. JN-IM
 - ✗ 2. RV-QU
 - ✓ 3. MQ-LO
 - ✗ 4. PT-OS

Q.11 What sum of money will amount to ₹1,116 at 4% per annum simple interest in 6 years?

- Ans**
- ☐ 1. ₹800
 - ☒ 2. ₹900
 - ☐ 3. ₹700
 - ☐ 4. ₹1,000

Q.12 The sum of the first five prime numbers is:

- Ans**
- ☐ 1. 18
 - ☐ 2. 11
 - ☒ 3. 28
 - ☐ 4. 26

Q.13 _____ broke the national record at the 2024 Portland Track Festival.

- Ans**
- ☒ 1. Gulveer Singh
 - ☐ 2. Avinash Sable
 - ☐ 3. Muhammad Anas
 - ☐ 4. Jyoshna Sabar

Q.14 Which city of India was host of ITU's prestigious World Telecom Standardization Assembly (WTSA 2024)?

- Ans**
- ☐ 1. Jaipur
 - ☐ 2. Kolkata
 - ☒ 3. New Delhi
 - ☐ 4. Chandigarh

Q.15 Unit of pressure is:

- Ans**
- ☐ 1. Newton/meter
 - ☐ 2. Newton
 - ☐ 3. Angstrom
 - ☒ 4. Pascal

Q.16 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 8 3 2 3 8 8 4 7 9 6 2 3 3 8 2 6 6 2 5 6 4 7 9 7 7 6 7 8 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 3
 - ☒ 2. 0
 - ☐ 3. 1
 - ☐ 4. 2

Q.17 If glucose :: six-carbon molecule, then pyruvate :: _____.

- Ans**
- ☐ 1. four-carbon molecule
 - ☐ 2. five-carbon molecule
 - ☐ 3. two-carbon molecule
 - ☒ 4. three-carbon molecule

Q.18 $\sec^2 A + (\operatorname{cosec}^2 A - 1) - (1 + \tan^2 A) + \cot^2 A =$ _____.

- Ans
- ✓ 1. $2\cot^2 A$
 - ✗ 2. 1
 - ✗ 3. $\sec^2 A$
 - ✗ 4. 0

Q.19 An object of height 30 cm is placed in front of a concave lens and an image of height 10 cm is formed. The magnification of the lens is:

- Ans
- ✓ 1. $1/3$
 - ✗ 2. -20
 - ✗ 3. 3
 - ✗ 4. 20

Q.20 Inside a bar magnet, the direction of magnetic field lines is from its:

- Ans
- ✓ 1. South pole to its North pole
 - ✗ 2. always perpendicular to the North pole
 - ✗ 3. North pole to its South pole
 - ✗ 4. always perpendicular to the South pole

Q.21 Study the following table and answer the question.

The table depicts the number of Apples sold by shops A and B to males and females on Monday

Shops	Number of apples sold to males	Number of apples sold to females
A	16	26
B	64	73

What is the difference between the number of apples sold by shops A and B to females?

- Ans
- ✓ 1. 47
 - ✗ 2. 50
 - ✗ 3. 48
 - ✗ 4. 45

Q.22 If the price of milk is 15% more than that of water, then the price of water is approximately what percentage less than that of milk?

- Ans
- ✗ 1. 5%
 - ✗ 2. 7.5%
 - ✗ 3. 10.50%
 - ✓ 4. 13.04%

Q.23 The perimeter of a rhombus is 148 cm, and one of its diagonals is 24 cm. The area in cm^2 of the rhombus is:

- Ans**
- ☒ 1. 875
 - ☒ 2. 840
 - ☒ 3. 770
 - ☒ 4. 700

Q.24 The value of $36^2 \div 9^2 + 4^2$ is:

- Ans**
- ☒ 1. 49
 - ☒ 2. 36
 - ☒ 3. 25
 - ☒ 4. 32

Q.25 Match the following columns I and II.

Column I	Column II
A. Placenta	i. Nutrition
B. Fallopian tube	ii. Fertilization
C. Uterus	iii. Implantation

- Ans**
- ☒ 1. A-ii, B-i, C-iii
 - ☒ 2. A-iii, B-ii, C-i
 - ☒ 3. A-i, B-iii, C-ii
 - ☒ 4. A-i, B-ii, C-iii

Q.26 Muscles present in our limbs move when we want them to and stop when we so decide. Such muscles are called:

- Ans**
- ☒ 1. voluntary muscles
 - ☒ 2. involuntary muscles
 - ☒ 3. cardiac muscles
 - ☒ 4. unstriated muscles

Q.27 A shopkeeper offered successive discounts of 10% and 15% on an article with the marked price of ₹28,000. Find the selling price of the article.

- Ans**
- ☒ 1. ₹21,240
 - ☒ 2. ₹22,140
 - ☒ 3. ₹21,420
 - ☒ 4. ₹21,402

Q.28 A, B, and C alone can do a piece of work in 9, 12 and 18 days, respectively. They all started the work together, but A left after 3 days. In how many days, was the total work completed?

- Ans**
- ☒ 1. $\frac{5}{2}$
 - ☒ 2. $\frac{24}{5}$
 - ☒ 3. 2
 - ☒ 4. $\frac{9}{5}$

Q.29 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

15 A 3 B 9 D 2 C 4 = ?

- Ans**
- ☒ 1. 6
 - ☒ 2. 8
 - ☒ 3. 2
 - ☒ 4. 11

Q.30 Which party formed the government in Odisha after the 2024 Assembly elections?

- Ans**
- ☒ 1. Janata Dal (United)
 - ☒ 2. Bharatiya Janata Party
 - ☒ 3. Aam Aadmi Party (AAP)
 - ☒ 4. Indian National Congress

Q.31 The present ages of the two people are 46 years and 60 years, respectively. If after 'k' years, the ratio of their ages is 4:5, then the value of 'k' is:

- Ans**
- ☒ 1. 12
 - ☒ 2. 10
 - ☒ 3. 11
 - ☒ 4. 13

Q.32 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

GL-IF-JM

JO-LI-MP

- Ans**
- ☒ 1. KP-MJ-NO
 - ☒ 2. NS-PM-QR
 - ☒ 3. LQ-NK-OP
 - ☒ 4. MR-OL-PS

Q.33 Who chairs the Defence Acquisition Council (DAC)?

- Ans**
- ☒ 1. President Droupadi Murmu
 - ☒ 2. National Security Advisor Ajit Doval
 - ☒ 3. Prime Minister Narendra Modi
 - ☒ 4. Defence Minister Rajnath Singh

Q.34 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only four boxes are kept between A and Z. Only B is kept above A. Only two boxes are kept between L and Y. C is kept immediately above X. Y is not kept immediately above C.

Which box is kept fourth from the top?

- Ans**
- ☒ 1. C
 - ☐ 2. L
 - ☐ 3. A
 - ☐ 4. X

Q.35 A gas can be liquefied by _____.

- Ans**
- ☐ 1. low pressure and high temperature
 - ☐ 2. low pressure and low temperature
 - ☒ 3. high pressure and low temperature
 - ☐ 4. high pressure and high temperature

Q.36 In August 2024, the Mukhyamantri Mahila Samman Yojana was launched by which of the following states?

- Ans**
- ☐ 1. Bihar
 - ☐ 2. Madhya Pradesh
 - ☒ 3. Jharkhand
 - ☐ 4. Odisha

Q.37 The image formed by a concave mirror is real, inverted and with the same size as the object. The position of the object is kept:

- Ans**
- ☐ 1. far away from the centre of curvature
 - ☒ 2. at the centre of curvature
 - ☐ 3. between the focus and the centre of curvature
 - ☐ 4. at the focus

Q.38 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explains the event/observation/information given in the statement.

Statement - Despite having a highly skilled workforce, Company A has not been profitable for the past three years.

I. The company is located in a region where the cost of functioning is extremely high.

II. The CEO of Company A is a well-known philanthropist.

- Ans**
- ☒ 1. Only I is a possible reason
 - ☐ 2. Only II is a possible reason
 - ☐ 3. Neither I nor II is a possible reason
 - ☐ 4. Both I and II are possible reasons

Q.39 Which of the following options is correct in the relation between mass and inertia?

- Ans**
- ☐ 1. The data provided here is not adequate to draw any conclusion.
 - ☐ 2. Inertia is inversely proportional to mass.
 - ☒ 3. Inertia is proportional to mass.
 - ☐ 4. Inertia is independent of mass.

Q.40 Which of the following phenomena is the reason behind wearing cotton clothes in summer?

- Ans**
- ☐ 1. Sublimation
 - ☐ 2. Condensation
 - ☒ 3. Evaporation
 - ☐ 4. Fusion

Q.41 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. F sits second to the left of C. Only E sits between K and F. B sits third to the left of E. D is not an immediate neighbour of B. Who sits fourth to the right of L?

- Ans**
- ☒ 1. D
 - ☐ 2. C
 - ☐ 3. E
 - ☐ 4. F

Q.42 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 6 3 0 4 7 5 5 6 8 3 6 6 9 6 1 1 0 8 7 8 5 0 4 0 3 2 1 3 0 6 (Right)

What is the sum of the 12th digit from the left and the 2nd digit from the right?

- Ans**
- ☐ 1. 7
 - ☐ 2. 5
 - ☒ 3. 6
 - ☐ 4. 4

Q.43 A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find D's share.

- Ans**
- ☒ 1. ₹360
 - ☐ 2. ₹160
 - ☐ 3. ₹240
 - ☐ 4. ₹480

Q.44 Which of the following is an example of an ionic compound?

- Ans**
- ☐ 1. Glucose
 - ☐ 2. Sugar
 - ☒ 3. Table salt
 - ☐ 4. Turmeric

Q.45 Which of the following constant values given in the options is equal to the universal gravitational constant 'G'?

- Ans**
- ☐ 1. $9.1 \times 10^{-31} kg$
 - ☐ 2. $9.8 ms^{-2}$
 - ☒ 3. $6.7 \times 10^{-11} Nm^2 kg^{-2}$
 - ☐ 4. $1.6 \times 10^{-19} C$

Q.46 Select the option that completes the given sentence correctly.

The pH scale is used to measure the level of _____ of a solution.

- Ans**
- ☐ 1. pollution
 - ☒ 2. acidity or basicity
 - ☐ 3. density
 - ☐ 4. volume

Q.47 Formation of the mixture is a _____ change whereas formation of a compound is a _____ change, respectively.

- Ans**
- ☐ 1. physical, physical
 - ☒ 2. physical, chemical
 - ☐ 3. chemical, chemical
 - ☐ 4. chemical, physical

Q.48 Two people drive towards each other from two places which are 56 km apart. The speed of the first person is 13 km/h and speed of the other is 14 km/h. After how long will they be 2 km apart if they start driving together?

- Ans**
- ☒ 1. 2 hours
 - ☐ 2. 2 hours 10 minutes
 - ☐ 3. 1 hour 30 minutes
 - ☐ 4. 1 hour

Q.49 The 15th edition of the annual art fair was held in _____, with over 100 exhibitors and an inaugural section on Design Initiatives.

- Ans**
- ☒ 1. New Delhi
 - ☐ 2. Chennai
 - ☐ 3. Surat
 - ☐ 4. Kolkata

Q.50 In a certain code language,

'A + B' means 'A is the sister of B',

'A – B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is V related to T if 'S + T – U x V – W + X'?

- Ans**
- ☐ 1. Father
 - ☐ 2. Brother
 - ☒ 3. Son
 - ☐ 4. Son's son

Q.51 In a certain code language, 'BEAR' is coded as '7912' and 'EARN' is coded as '1296'. What is the code for 'N' in the given code language?

- Ans**
- ☐ 1. 1
 - ☒ 2. 6
 - ☐ 3. 9
 - ☐ 4. 2

Q.52 Which of the following endocrine glands secretes growth hormone?

- Ans**
- ☐ 1. Adrenal
 - ☒ 2. Pituitary
 - ☐ 3. Pancreas
 - ☐ 4. Thyroid

Q.53 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. No one sits to the right of Y. Only three people sit between Y and C. Only two people sit between C and Z. B sits third to the left of X. L sits to the immediate right of X.

How many people sit between A and Z?

- Ans**
- ☐ 1. One
 - ☒ 2. Three
 - ☐ 3. Two
 - ☐ 4. Four

Q.54 What will come in the place of '?' in the following equation, if '×' and '÷' are interchanged and '−' and '+' are interchanged?

$$12 \times 12 \div 12 - 12 + 15 = ?$$

- Ans**
- ☐ 1. 69
 - ☐ 2. 99
 - ☒ 3. 9
 - ☐ 4. 39

Q.55 A ball is dropped from the top of a tower. At the midpoint of the motion of the ball, the energy possessed by the ball is:

- Ans**
- ☐ 1. Kinetic
 - ☐ 2. Sound
 - ☐ 3. Potential
 - ☒ 4. Both Potential and Kinetic

Q.56 Find the circumference of a circle that circumscribes a square of side 7 cm.

$$\left(\text{Use } \pi = \frac{22}{7} . \right)$$

- Ans**
- ☐ 1. 44 cm
 - ☒ 2. $22\sqrt{2}$ cm
 - ☐ 3. 22 cm
 - ☐ 4. $44\sqrt{2}$ cm

Q.57 The phenomenon of scattering of light by the colloidal particles gives rise to:

- Ans**
- ☐ 1. rainbow
 - ☐ 2. delay in sunset
 - ☐ 3. twinkling of stars
 - ☒ 4. Tyndall effect

Q.58 Uma swims in a 60 m long pool. She covers 120 m in one minute by swimming from one end to the other and back along the same straight path. The average velocity of Uma is:

- Ans**
- ☐ 1. 3 m/s
 - ☐ 2. 2 m/s
 - ☐ 3. 1 m/s
 - ☒ 4. 0 m/s

Q.59 Select the INCORRECT pair.

- Ans**
- ☐ 1. Plastic glass – non-biodegradable
 - ☒ 2. Kulhad – non-biodegradable
 - ☐ 3. Paper cup – biodegradable
 - ☐ 4. Vegetable – biodegradable

Q.60 Pipe R can empty a full tank in 30 hours. But two pipes P and Q can fill the tank in 15 hours and 10 hours, respectively. Ram unknowingly opened all three taps. After 2 hours Shyam realised it and closed Pipe R. Due to this mistake how much time more would it take to fill the tank?

- Ans**
- ☐ 1. 1 hour 20 min
 - ☒ 2. 24 min
 - ☐ 3. 2 hours 15 min
 - ☐ 4. 18 min

Q.61 The traffic lights at three different crossings turn red after every 30 sec, 45 sec and 60 sec, respectively. If they all turn red simultaneously at 8:30 a.m., then at what time will they again turn red simultaneously?

- Ans**
- ☐ 1. 8:34 a.m.
 - ☒ 2. 8:33 a.m.
 - ☐ 3. 8:35 a.m.
 - ☐ 4. 8:38 a.m.

Q.62 The mean proportional of 25 and 36 is:

- Ans**
- ☐ 1. 36
 - ☐ 2. 60
 - ☐ 3. 25
 - ☒ 4. 30

Q.63 What is the name of the phenomenon that causes white light to split into seven colours as it passes through a glass prism?

- Ans**
- ☐ 1. Diffraction
 - ☐ 2. Refraction
 - ☐ 3. Scattering
 - ☒ 4. Dispersion

Q.64 In which of the following life processes is the creation of a DNA copy, a basic event?

- Ans**
- ☒ 1. Respiration
 - ☒ 2. Reproduction
 - ☒ 3. Circulation
 - ☒ 4. Excretion

Q.65 Which of the following is the dispersed phase of butter?

- Ans**
- ☒ 1. Only liquid
 - ☒ 2. Only solid
 - ☒ 3. Both solid and liquid
 - ☒ 4. Only gas

Q.66 Benji starts from Point A and drives 70 km towards South. He then takes a right turn, drives 20 km, turns right and drives 35 km. He then takes a left turn and drives 15 km. He takes a final right turn, drives 35 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☒ 1. 20 km towards East
 - ☒ 2. 30 km towards East
 - ☒ 3. 15 km towards East
 - ☒ 4. 35 km towards East

Q.67 Evaluate the given expression.

$$\{15 \times 32 \div 2 \times 5\} \div 75$$

- Ans**
- ☒ 1. 14
 - ☒ 2. 18
 - ☒ 3. 12
 - ☒ 4. 16

Q.68 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

$$X : 38 :: 9 : Y$$

- Ans**
- ☒ 1. $X = 14, Y = 28$
 - ☒ 2. $X = 14, Y = 30$
 - ☒ 3. $X = 15, Y = 48$
 - ☒ 4. $X = 15, Y = 28$

Q.69 In a certain code language, 'travel know places' is coded as 'mh ca lu' and 'travel makes tourist' is coded as 'by ai ca'. What is the code for 'travel' in the given code language?

- Ans**
- ☐ 1. by
 - ☐ 2. mh
 - ☐ 3. lu
 - ☒ 4. ca

Q.70 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All legs are hands.

Some legs are ears.

Conclusions:

(I) Some hands are ears.

(II) Some ears are legs.

- Ans**
- ☐ 1. Only conclusion II follows
 - ☐ 2. Only conclusion I follows
 - ☐ 3. Neither conclusion I nor II follows
 - ☒ 4. Both conclusions I and II follow

Q.71 Plant cells have cell walls because _____.

- Ans**
- ☒ 1. they defend plant cells from a variety of external effects
 - ☐ 2. they do not have proper genetic material
 - ☐ 3. they do not have cytoplasm
 - ☐ 4. they are required for photosynthesis

Q.72 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(2, 8, 32)

(5, 20, 80)

- Ans**
- ☐ 1. (9, 36, 124)
 - ☒ 2. (9, 36, 144)
 - ☐ 3. (9, 36, 142)
 - ☐ 4. (9, 39, 144)

Q.73 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. BEH
 - ☐ 2. RUX
 - ☐ 3. FIL
 - ☒ 4. CEG

Q.74 In human beings, air is taken into the body through the nostrils and from here the air passes through the throat and into the lungs. Which of the following ensures that the air-passage does NOT collapse in the throat?

- Ans**
- ✓ 1. Rings of cartilage
 - ✗ 2. Nostrils large pores
 - ✗ 3. Nostrils large hairs
 - ✗ 4. Size of mouth cavity

Q.75 Which of the following options should come in place of the question mark (?) in the given series?

7 20 59 176 ? 1580

- Ans**
- ✓ 1. 527
 - ✗ 2. 510
 - ✗ 3. 557
 - ✗ 4. 517

Q.76 The average of the first 10 natural numbers is:

- Ans**
- ✗ 1. 5
 - ✗ 2. 6
 - ✓ 3. 5.5
 - ✗ 4. 6.5

Q.77 In which of the following organisms can individuals change sex, indicating that sex is NOT genetically determined?

- Ans**
- ✗ 1. Lizards
 - ✓ 2. Snails
 - ✗ 3. Ostriches
 - ✗ 4. Frogs

Q.78 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some doors are locks.

No lock is a key.

Conclusions:

(I) No door is a key.

(II) Some locks are doors.

- Ans**
- ✗ 1. Neither conclusion I nor II follows
 - ✗ 2. Both conclusions I and II follow
 - ✗ 3. Only conclusion I follows
 - ✓ 4. Only conclusion II follows

Q.79 Which of the following is correct about fertilisation in plants?

Ans ☒ 1.

The male germ-cell produced by pollen grain fuses with the female gamete present in the ovule.

☐ 2.

The male germ-cell produced by pollen grain fuses with the female gamete present in the stigma.

☐ 3.

The male germ-cell produced by the ovary fuses with the female gamete present in the ovule.

☐ 4.

The male germ-cell produced by the ovule fuses with the female gamete present in the pollen tube.

Q.80 Which of the following holds for the parallel combination of resistors?

Ans ☒ 1. The total resistance is always less than the smallest resistance.

☐ 2. The total resistance is equal to the highest resistance.

☐ 3. The total resistance is always greater than the smallest resistance.

☐ 4. The total resistance is equal to the smallest resistance.

Q.81 If 30% of a number exceeds 20% of it by 12, then the number is:

Ans ☐ 1. 200

☒ 2. 120

☐ 3. 150

☐ 4. 180

Q.82 Testes are located outside the abdominal cavity in scrotum because sperm formation requires:

Ans ☒ 1. lower temperature than the normal body temperature

☐ 2. higher temperature than the normal body temperature

☐ 3. normal body temperature

☐ 4. higher body temperature

Q.83 Who is the second Indian chess player to breach the 2800 ELO rating barrier in classical chess as on December 2024?

Ans ☐ 1. Praggnanandhaa Rameshbabu

☐ 2. Gukesh D

☐ 3. Pentala Harikrishna

☒ 4. Arjun Erigaisi

Q.84 When you look at the front side of a table spoon, an inverted image of yours is formed. The front side of table spoon works as a:

Ans ☒ 1. concave mirror

☐ 2. convex mirror

☐ 3. concave lens

☐ 4. plane mirror

Q.85 Which of the following is a dominant trait in the experiments done by Mendel on garden pea?

- Ans**
- ☐ 1. Green seeds
 - ☐ 2. Wrinkled seeds
 - ☒ 3. Round seeds
 - ☐ 4. Short plants

Q.86 What was the theme of The Climate Conference 2024 held on 12 January 2024 in Mumbai, Maharashtra?

- Ans**
- ☐ 1. "Empowering India's Climate Action"
 - ☒ 2. "Decoding the Green Transition for India"
 - ☐ 3. "Towards a Greener Future: India's Roadmap"
 - ☐ 4. "Innovating for Sustainable India"

Q.87 The product $(a + b)(a - b)(a^2 - ab + b^2)(a^2 + ab + b^2)$ is equal to :

- Ans**
- ☐ 1. $a^3 - b^3$
 - ☐ 2. $a^3 + b^3$
 - ☐ 3. $a^6 + b^6$
 - ☒ 4. $a^6 - b^6$

Q.88 Select the INCORRECT pair related to digestive glands and their enzymes.

- Ans**
- ☒ 1. Salivary gland – trypsin
 - ☐ 2. Gastric gland – pepsin
 - ☐ 3. Liver – bile juice
 - ☐ 4. Pancreas – pancreatic juice

Q.89 The chemical reaction that carries hydrogenation of vegetable oils in the presence of Ni catalyst is called:

- Ans**
- ☒ 1. addition reaction
 - ☐ 2. elimination reaction
 - ☐ 3. combustion reaction
 - ☐ 4. rearrangement reaction

Q.90 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

CAN, FDP, IGR, LJT, ?

- Ans**
- ☒ 1. OMV
 - ☐ 2. LMV
 - ☐ 3. LNV
 - ☐ 4. LNR

Q.91 The following observations are arranged in ascending order.

29, 32, 48, 50, x , $2x + 3$, 72, 78, 84, 95

If the median is 63, then the value of x is:

- Ans**
- ☐ 1. 63
 - ☐ 2. 62
 - ☐ 3. 51
 - ☒ 4. 41

Q.92 The difference in the measures of two complementary angles is 18° . Find the measure of the smaller angle.

- Ans**
- ☒ 1. 36°
 - ☐ 2. 34°
 - ☐ 3. 38°
 - ☐ 4. 35°

Q.93 The greatest natural number by which the product of three consecutive even natural numbers is always divisible is:

- Ans**
- ☐ 1. 16
 - ☒ 2. 48
 - ☐ 3. 24
 - ☐ 4. 96

Q.94 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

ID-LG-OQ

LG-OJ-RT

- Ans**
- ☐ 1. MI-QL-TU
 - ☐ 2. MI-QK-TV
 - ☒ 3. NI-QL-TV
 - ☐ 4. NI-QK-TU

Q.95 Which of the following is a unit of pressure?





- Ans**
- ☐ 1. Newton
 - ☐ 2. Cubic metre
 - ☒ 3. Pascal
 - ☐ 4. Kelvin

Q.96 Which of the following is an example of reduction reaction?





- Ans**
- ☐ 1. Conversion of copper into copper oxide
 - ☒ 2. Conversion of copper oxide into copper
 - ☐ 3. Conversion of ethanol into acetic acid
 - ☐ 4. Conversion of carbon into carbon dioxide

Q.97 Which of the following statements about the principal focus of a spherical mirror is/are correct?





- (a) It always lies midway between the pole and the centre of curvature.
- (b) Its position depends on the size of the mirror.
- (c) It always lies at the centre of curvature.

Ans  1. (b) and (c)
 2. Only (a)
 3. (a) and (b)
 4. Only (c)

Q.98 Which of the following parts of the plant is used in vegetative propagation?

Ans  1. Root and flowers
 2. Fruits and leaves
 3. Leaves and stem
 4. Fruits and flowers

Q.99 According to the reactivity series, which chemical reaction is possible?

Ans  1. $\text{Zn} + \text{CuCl}_2 \rightarrow \text{ZnCl}_2 + \text{Cu}$
 2. $3\text{Cu} + \text{FeCl}_3 \rightarrow 3\text{CuCl}_2 + \text{Fe}$
 3. $\text{Cu} + \text{ZnCl}_2 \rightarrow \text{CuCl}_2 + \text{Zn}$
 4. $3\text{Ag} + \text{AlCl}_3 \rightarrow 3\text{AgCl} + \text{Al}$

Q.100 In July 2024, the 46th session of the World Heritage Committee was held in which of the following locations?

Ans  1. New Delhi
 2. Jaipur
 3. Bengaluru
 4. Indore

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	24/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Which of the following are parts of the male reproductive system?

- Ans
- ☒ 1. Uterus and Vagina
 - ☒ 2. Fallopian tube and penis
 - ☒ 3. Vas deferens and scrotum
 - ☒ 4. Vas deferens and oviduct

Q.2 In 2024, the Union Cabinet approved the continuation of three umbrella schemes merged into a unified central sector scheme under the Department of Science and Technology (DST). What is the name of this unified scheme?

- Ans
- ☒ 1. Science Bharat
 - ☒ 2. Vigyan Manthan
 - ☒ 3. Vigyan Dhara
 - ☒ 4. Technology for Tomorrow

Q.3 The gravitational force between two objects:

- Ans
- ☒ 1. only depends on the masses of the objects
 - ☒ 2. depends on the masses of the objects and the distance between them
 - ☒ 3. does not depend on either the masses of the objects or the distance between them
 - ☒ 4. only depends on the distance between the objects

Q.4 Swarna borrowed a sum of ₹12,000 from Jayshree at a rate of 10% per annum on compound interest, compounded annually. Find the total amount paid by Swarna after 2 years to clear all the dues.

- Ans
- ☒ 1. ₹14,520
 - ☒ 2. ₹14,890
 - ☒ 3. ₹14,620
 - ☒ 4. ₹14,980

Q.5 Which of the following factors decreases the rate of evaporation?

- Ans
- ☐ 1. Increase in temperature
 - ☐ 2. Increase in wind speed
 - ☐ 3. Increase in surface area
 - ☒ 4. Increase in humidity

Q.6 The rate of change of momentum is proportional to the applied unbalanced:

- Ans
- ☒ 1. force
 - ☐ 2. torque
 - ☐ 3. angular momentum
 - ☐ 4. moment of inertia

Q.7 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

TO-RM-PQ

WR-UP-ST

- Ans
- ☐ 1. SN-QL-OR
 - ☐ 2. XS-VQ-TW
 - ☒ 3. UP-SN-QR
 - ☐ 4. VQ-TO-RU

Q.8 The first law of motion is known as the:

- Ans
- ☐ 1. law of linear momentum
 - ☒ 2. law of inertia
 - ☐ 3. law of torque
 - ☐ 4. law of angular momentum

Q.9 The square root of 6084 is:

- Ans
- ☐ 1. 64
 - ☐ 2. 76
 - ☒ 3. 78
 - ☐ 4. 82

Q.10 _____ plays a crucial role in the long-term survival of species.

- Ans
- ☐ 1. Growth and development
 - ☐ 2. Fragmentation
 - ☒ 3. Variation
 - ☐ 4. Reproduction

Q.11 What will come in the place of '?' in the following equation, if '×' and '−' are interchanged and '+' and '÷' are interchanged?

$$15 \times 5 - 56 + 28 \div 3 = ?$$

- Ans**
- ☒ 1. 62
 - ☒ 2. 8
 - ☒ 3. −13
 - ☒ 4. 25

Q.12 B, C, D, E, F, G and K are sitting around a circular table, facing the centre. B sits third to the left of E. F sits second to the left of C. Only E sits between K and F. D is not an immediate neighbour of B.

How many people sit between G and F when counted from the right of G?

- Ans**
- ☒ 1. Two
 - ☒ 2. Three
 - ☒ 3. One
 - ☒ 4. Four

Q.13 On simple interest, a certain sum of money amounts to ₹1,400 in 2 years and to ₹2,000 in 5 years. Find the rate of interest per annum.

- Ans**
- ☒ 1. 16.67%
 - ☒ 2. 11.11%
 - ☒ 3. 25%
 - ☒ 4. 20%

Q.14 As of 28 August 2024, how many years has the Pradhan Mantri Jan Dhan Yojana (PMJDY) completed since its launch?

- Ans**
- ☒ 1. 12 years
 - ☒ 2. 10 years
 - ☒ 3. 8 years
 - ☒ 4. 5 years

Q.15 When a decomposition reaction of Limestone is carried out by heating, it is called _____.

- Ans**
- ☒ 1. combination reaction
 - ☒ 2. thermal decomposition
 - ☒ 3. double displacement reaction
 - ☒ 4. exothermic reaction

Q.16 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. YFM
 - ☒ 2. GNU
 - ☒ 3. BGT
 - ☒ 4. KRY

Q.17 In a parallelogram ABCD, the length of the line joining the midpoints of AD and AC is 2 units. If the perimeter of the parallelogram is 26 units, then find the length of AD.

- Ans**
- ☐ 1. 8 units
 - ☐ 2. 4 units
 - ☐ 3. 6 units
 - ☒ 4. 9 units

Q.18 Which of the following plant cells have large membranous organelles that help in photosynthesis?

- Ans**
- ☐ 1. Nucleus
 - ☐ 2. Golgi body
 - ☐ 3. Lysosomes
 - ☒ 4. Plastids

Q.19 19 people are standing in a row facing North. Drisha is 17th from the right end while Vani is 9th from the left end. How many people are there between Drisha and Vani?

- Ans**
- ☐ 1. 8
 - ☐ 2. 2
 - ☐ 3. 3
 - ☒ 4. 5

Q.20 The sum of two numbers is 42 and one of them exceeds the other by 18. Find the greater number.

- Ans**
- ☐ 1. 32
 - ☐ 2. 24
 - ☐ 3. 28
 - ☒ 4. 30

Q.21 Which of the following statements is NOT correct?

- Ans**
- ☐ 1. The power of concave lens is negative.
 - ☒ 2. Larger the focal length, larger the power.
 - ☐ 3. Larger the focal length, smaller is the power.
 - ☐ 4. The power of convex lens is positive.

Q.22 Which of the following statements is/are correct related to eco-system?

- (i) Food we eat is digested by various enzymes in our body.
- (ii) Enzyme is specific in their action.
- (iii) Specific enzymes are needed for the breakdown of a particular substance.

- Ans**
- ☐ 1. Only (i) and (ii)
 - ☐ 2. Only (ii) and (iii)
 - ☐ 3. Only (i)
 - ☒ 4. (i), (ii) and (iii)


Q.23 Which of the following is NOT a property of a colloidal solution?


Ans  1.

The components of a colloidal solution are only the dispersed phase and the dispersion medium.

 2.

A colloid is big enough to scatter a beam of light passing through it and make its path visible.

 3. The size of the particles of a colloid is very large.

 4. A colloid is a heterogeneous mixture.

Q.24 The HCF of 16, 20 and 24 is:

Ans  1. 8


 2. 4


 3. 2


 4. 6

Q.25 Two trains, 125 m and 165 m in length, respectively, are running in opposite directions, one at the rate of 80 km/h and the other at the rate of 65 km/h. In how many seconds will they be completely clear of each other from the moment they meet?


Ans  1. 7.2 sec


 2. 7.5 sec


 3. 6.5 sec


 4. 6.8 sec

Q.26 What is the energy consumed when 1 watt of power is used for 1 hour?

Ans  1. 1 kilowatt hour

 2. 1 watt hour

 3. 6 kilowatt hour

 4. 60 watt hour


Q.27 If 'A' stands for '×', 'B' stands for '+', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$12 \text{ D } 15 \text{ B } 3 \text{ C } 6 \text{ A } 5 = ?$$

Ans  1. 34

 2. 36


 3. 37


 4. 31


Q.28 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?


(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

$$X : 108 :: 9 : Y$$

Ans  1. $X = 16, Y = 145$

 2. $X = 14, Y = 81$

 3. $X = 12, Y = 81$

 4. $X = 12, Y = 126$

Q.29 The temperature at which a liquid starts boiling at atmospheric pressure is known as _____.

- Ans**
- ☐ 1. triple point
 - ☒ 2. boiling point
 - ☐ 3. melting point
 - ☐ 4. fusion point

Q.30 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

VYR, TWP, RUN, PSL, ?

- Ans**
- ☐ 1. NJQ
 - ☒ 2. NQJ
 - ☐ 3. JNQ
 - ☐ 4. JQN

Q.31 The floor of an office has dimensions $5\text{ m} \times 3\text{ m}$. The cost of painting the walls is ₹8,640 at the rate of ₹60/m². Find the height of the room (in m).

- Ans**
- ☐ 1. 9.5
 - ☐ 2. 8.5
 - ☐ 3. 8
 - ☒ 4. 9

Q.32 Identify the body part that does NOT contain involuntary muscles.

- Ans**
- ☐ 1. Lungs
 - ☒ 2. Biceps
 - ☐ 3. Stomach
 - ☐ 4. Heart

Q.33 Select the correct statement related to sexual reproduction in flowering plants.

- Ans**
- ☐ 1. After fertilisation, ovary develops into a seed.
 - ☐ 2. After fertilisation, ovule develops into fruit.
 - ☒ 3. On a suitable stigma pollen tubes grow out of the pollen grain and travel through the style and reach the ovary.
 - ☐ 4. After fertilisation, an embryo is formed without any division in zygote.

Q.34 In a certain code language,

'A + B' means 'A is the mother of B',

'A – B' means 'A is the son of B',

'A x B' means 'A is the husband of B'

and 'A ÷ B' means 'A is the brother of B'.

How is A related to X if 'X – Y x Z + A ÷ B'?

- Ans**
- ☒ 1. Father's father
 - ☒ 2. Son
 - ☒ 3. Brother
 - ☒ 4. Father

Q.35 Who is the author of the book '2024: The Election that Surprised India'?

- Ans**
- ☒ 1. Rajdeep Sardesai
 - ☒ 2. Prannoy Roy
 - ☒ 3. Barkha Dutt
 - ☒ 4. Arnab Goswami

Q.36 A constant force is acting on a body of mass 2 kg for 4 s and its velocity changes from 8 m/s to 12 m/s. The magnitude of the applied force is:

- Ans**
- ☒ 1. 3 N
 - ☒ 2. 1 N
 - ☒ 3. 2 N
 - ☒ 4. 4 N

Q.37 The sides of a rectangle are in the ratio 5 : 3 and its perimeter is 112 cm. The area of this rectangle is:

- Ans**
- ☒ 1. 735 cm²
 - ☒ 2. 595 cm²
 - ☒ 3. 620 cm²
 - ☒ 4. 695 cm²


Q.38 Which pair in the reactivity series represents the most and least reactive metal pairs?

- Ans**
- ☒ 1. Sodium and gold
 - ☒ 2. Potassium and gold
 - ☒ 3. Magnesium and gold
 - ☒ 4. Calcium and gold

Q.39 Which of the following statements about Thomson's model of an atom is INCORRECT?

Ans  1.

The negative and positive charges are not equal in magnitude. So, the atom as a whole is not electrically neutral.

 2. An atom consists of a positively charged sphere and the electrons are embedded in it.


 3.


The positive charge in the atom is spread all over like the red edible part of a watermelon, while the electrons are studded in the positively charged sphere, like the seeds in the watermelon.


 4.


The negative and positive charges are equal in magnitude. So, the atom as a whole is electrically neutral.

Q.40 When an object of mass 'm' falls freely to the ground from a height 'h', at what point is the object's kinetic energy maximum?


Ans  1. At one-fourth way through the fall.


 2. At halfway through the fall.


 3. When it is about to hit the ground.


 4. At the start of the fall.

Q.41 Which tissue is a distinctive feature of complex plants, one that has made possible their survival in the terrestrial environment?


Ans  1. Vascular tissue


 2. Connective tissue


 3. Epithelial tissue


 4. Meristematic tissue

Q.42 Which of the following is a common drawback of using soap in hard water?


Ans  1. Soap loses its colour in hard water.


 2. Soap creates too much lather.


 3. Formation of soap scum due to the reaction with calcium and magnesium ions.


 4. Soap dissolves too quickly in hard water.

Q.43 In which of the following phenomena is solid state directly transformed into gaseous state without changing into liquid state?

Ans  1. Deposition


 2. Sublimation

 3. Fusion


 4. Solidification

Q.44 Which of the following parts of a plant does NOT take part in vegetative propagation?

Ans  1. Stem

 2. Root

 3. Flower

 4. Leaves

Q.45 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. VQ-TX
 - ☐ 2. ID-GK
 - ☒ 3. LG-JM
 - ☐ 4. RM-PT

Q.46 Which of the following is the rod-shaped structure found in the nucleus only when the cell is about to divide?

- Ans**
- ☒ 1. Chromosomes
 - ☐ 2. Chromatin
 - ☐ 3. Mitochondria
 - ☐ 4. Lysosomes

Q.47 P, Q and R can fill a tank in 9 hours, 18 hours and 12 hours, respectively. They start the work i.e. filling the tank, with P working on hour 1, Q working on hour 2 and R working on hour 3, and then continuing with this cycle till the work is completed. How many hours will be needed to complete this work in this manner?

- Ans**
- ☐ 1. 16 hours
 - ☐ 2. 11 hours
 - ☒ 3. 12 hours
 - ☐ 4. 15 hours

Q.48 Carbon monoxide reacts with hydrogen molecule to yield which of the following compounds?

- Ans**
- ☐ 1. $\text{CH}_4(\text{g}) + \text{O}_2(\text{g})$
 - ☐ 2. $\text{C}(\text{S}) + \text{H}_2\text{O}(\text{l})$
 - ☒ 3. $\text{CH}_3\text{OH}(\text{l})$
 - ☐ 4. $\text{H}_2\text{O}(\text{l})$

Q.49 The mean proportion between the numbers a and b is 6. Which of the following pairs of numbers can be the values of a and b?

- Ans**
- ☐ 1. 16 and 4
 - ☒ 2. 12 and 3
 - ☐ 3. 10 and 6
 - ☐ 4. 12 and 16

Q.50 TRIFED was established in 1987 under the Ministry of Tribal Affairs to:

- Ans**
- ☒ 1. facilitate the marketing of tribal products and empower tribal people
 - ☐ 2. promote industrial development in tribal areas
 - ☐ 3. promote the education of tribal children
 - ☐ 4. provide financial aid to tribal individuals

Q.51 Which of the following statements is true with respect to regeneration?

- Ans**
- ☐ 1. Regeneration and reproduction are the same process with different names in all organisms.
 - ☒ 2. Regeneration is not the same as reproduction.
 - ☐ 3. No organism on earth has the ability to regenerate.
 - ☐ 4. Regeneration gives rise to a totally new organism.

Q.52 If $1^2 + 2^2 + 3^2 + \dots + 10^2 = 385$, then $3^2 + 6^2 + 9^2 + \dots + 30^2$ is equal to

- Ans**
- ☐ 1. 2310
 - ☐ 2. 1155
 - ☐ 3. 770
 - ☒ 4. 3465

Q.53 Which of the following is true regarding the principal axis of a spherical mirror?

- Ans**
- ☐ 1. It is located at the edge of the mirror.
 - ☒ 2. It is normal to the mirror at its pole.
 - ☐ 3. It intersects the surface of the mirror at an angle of 45 degrees.
 - ☐ 4. It is parallel to the surface of the mirror.

Q.54 Which technique is useful for the separation of colloidal particles?

- Ans**
- ☐ 1. Filtration technique
 - ☒ 2. Centrifugation technique
 - ☐ 3. Recrystallisation technique
 - ☐ 4. Sublimation technique

Q.55 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 5 4 1 6 2 7 3 8 7 4 6 1 4 9 7 3 9 9 8 4 2 4 3 0 2 8 3 7 3 (Right)

What is the sum of the 12th digit from the left and the 2nd digit from the right?

- Ans**
- ☒ 1. 13
 - ☐ 2. 14
 - ☐ 3. 12
 - ☐ 4. 15

Q.56 There are two sections A and B of a class, consisting of 18 and 22 students, respectively. If the average weight of section A is 40 kg and that of section B is 35 kg, find the average weight of the whole class.

- Ans**
- ☐ 1. 38.25 kg
 - ☒ 2. 37.25 kg
 - ☐ 3. 38.5 kg
 - ☐ 4. 37.5 kg

Q.57 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All belts are watches.

No belt is a tie.

Conclusions:

(I) No watch is a tie.

(II) At least some watches are belts.

- Ans**
- ☒ 1. Only conclusion I follows
 - ☒ 2. Only conclusion II follows
 - ☒ 3. Neither conclusion I nor II follows
 - ☒ 4. Both conclusions I and II follow

Q.58 Which of the following terms is used for the impurities found in ores mining ?

- Ans**
- ☒ 1. Gangue
 - ☒ 2. Roasting
 - ☒ 3. Anode mud
 - ☒ 4. Calcinations

Q.59 Study the given table and answer the question that follows.

The table depicts the kilograms of rice consumed by Ravi and Kapil in the month of June and July.

	Rice consumed in June (in kg)	Rice consumed in July (in kg)
Ravi	9	12
Kapil	8	10

What is the difference between the total amount of rice consumed by Ravi and Kapil in the month of July and June?

- Ans**
- ☒ 1. 5 kg
 - ☒ 2. 3 kg
 - ☒ 3. 7 kg
 - ☒ 4. 6 kg

Q.60 Who won India's first-ever medal in the men's 50m Rifle 3-Positions final at the Paris 2024 Olympics?

- Ans**
- ☒ 1. Divyansh Singh Panwar
 - ☒ 2. Arjun Babuta
 - ☒ 3. Anish Bhanwala
 - ☒ 4. Swapnil Kusale

Q.61 Who among the following launched ADITI 2.0 challenges and DISC 12 to foster innovation, entrepreneurship and 'Aatmanirbharta' in defence during DefConnect 4.0 on 7 October 2024?

- Ans**
- ☒ 1. Shri Amit Shah
 - ☒ 2. Shri Narendra Modi
 - ☒ 3. Shri Rajnath Singh
 - ☒ 4. Shri Shaktikanta Das

Q.62 In a certain code language, 'We Are Happy' is written as 'Bi Hi Mi', 'They Are Sad' is written as 'Di Mi Si' and 'Happy And Sad' is written as 'Si Gi Bi'. How is 'We' written in the given language?

- Ans**
- ☐ 1. Bi
 - ☐ 2. Si
 - ☐ 3. Mi
 - ☒ 4. Hi

Q.63 Identify the INCORRECT statement related to transportation in plants.

- a. Phloem helps in mineral and water absorption from the soil.
- b. Root hair increases the root's surface area for water and mineral absorption.
- c. Special vascular tissue in plants transports water and nutrients from the soil.
- d. Roots and leaves are joined by a continuous network of xylem channels.

- Ans**
- ☐ 1. Only d
 - ☐ 2. c and d
 - ☒ 3. Only a
 - ☐ 4. b and c

Q.64 Deepthi Jeevanji set a new world record in the women's T20 400-m event at the:

- Ans**
- ☒ 1. World Para Athletics Championships
 - ☐ 2. World Para Badminton Championships
 - ☐ 3. World Para Swimming Championships
 - ☐ 4. World Para Table Tennis Championships

Q.65 The atomic mass of an atom is primarily determined by the number of:

- Ans**
- ☐ 1. neutrons
 - ☐ 2. electrons
 - ☒ 3. nucleons
 - ☐ 4. protons

Q.66 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).





(Left) 9 3 9 2 2 1 9 0 6 0 2 5 1 0 2 5 3 8 8 9 6 5 4 0 0 6 0 2 5 3 (Right)

What is the sum of the 3rd digit from the left and the 3rd digit from the right?

- Ans**
- ☐ 1. 9
 - ☐ 2. 12
 - ☒ 3. 11
 - ☐ 4. 10

Q.67 Which of the listed cellular organelles is/are found exclusively in plant cells?

- a. Mitochondria
- b. Plastids
- c. Golgi apparatus
- d. Vacuoles
- e. Cell wall
- f. Lysosomes

Ans  1. a and c
 2. b, d and e
 3. f
 4. c and d




Q.68 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 7 8 9 6 7 7 5 8 9 2 5 5 9 5 5 9 5 4 6 7 2 8 3 5 8 3 9 7 9 (Right)

How many such even digits are there, each of which is immediately preceded by an even digit and also immediately followed by an odd digit?

Ans  1. 3
 2. 0
 3. 2
 4. 1





Q.69 If $x : 6 :: 6 : y$, then the value of \sqrt{xy} is:

Ans  1. 6
 2. 16
 3. 4
 4. 8

Q.70 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

LH-KG-JI

VR-UQ-TS

Ans  1. UP-SN-RQ
 2. TP-SO-RQ
 3. UP-SO-RT
 4. TP-SN-RT

Q.71 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

429, 534, 452, 557, 475, ?

- Ans**
- ☐ 1. 574
 - ☐ 2. 555
 - ☒ 3. 580
 - ☐ 4. 592

Q.72 If the price of rice is 30% less than that of wheat, then the price of wheat is approximately what percentage more than that of rice?

- Ans**
- ☐ 1. 45%
 - ☐ 2. 40.65%
 - ☒ 3. 42.86%
 - ☐ 4. 37.5%

Q.73 Which of the following is correct about the relationship between power and focal length of a lens?

- Ans**
- ☐ 1. Power is inversely proportional to square of the focal length.
 - ☒ 2. Power is inversely proportional to focal length.
 - ☐ 3. Power is directly proportional to focal length.
 - ☐ 4. Power is directly proportional to square of the focal length.

Q.74 If $a + \frac{1}{a} = 7$, then $a^2 + \frac{1}{a^2} = ?$

- Ans**
- ☐ 1. 48
 - ☐ 2. 44
 - ☒ 3. 47
 - ☐ 4. 46

Q.75 The greatest natural number, which exactly divides the product of any four consecutive natural numbers is:

- Ans**
- ☐ 1. 120
 - ☐ 2. 6
 - ☒ 3. 24
 - ☐ 4. 12

Q.76 Jimmy starts from point A and drives 6 km towards the South. He then takes two simultaneous left turns and drives 4 km and 6 km, respectively. He then takes a final right turn and drives 4 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees only unless specified.)

- Ans**
- ☐ 1. 6 km West
 - ☐ 2. 6 km South
 - ☐ 3. 4 km west
 - ☒ 4. 8 km West

Q.77 A large tanker can be filled by two pipes A and B in 60 minutes and 40 minutes, respectively. How many minutes will it take to fill the tanker from empty state, if B is used for half the time and A and B fill it together for the other half?

- Ans**
- ☐ 1. 27.5 min
 - ☒ 2. 30 min
 - ☐ 3. 15 min
 - ☐ 4. 20 min

Q.78 In which of the following months in 2024 did the Sahitya Akademi organise a two-day Birth Centenary Symposium on 'Prabhjot Kaur and Colonel Narinder Pal Singh'?

- Ans**
- ☒ 1. September
 - ☒ 2. October
 - ☒ 3. March
 - ☒ 4. January

Q.79 Which of the following expressions is correct?

1. Mode – median = 2 (median – mean)

2. Median = $\frac{\text{Mode} + \text{median}}{2}$

3. Mode = 2 Median – mean

4. Mean = $\frac{2\text{Median} - \text{mode}}{2}$

- Ans**
- ☒ 1. 2
 - ☒ 2. 3
 - ☒ 3. 1
 - ☒ 4. 4

Q.80 Simplify the following expression:

$$\frac{\sin \theta}{1 - \cos \theta} + \frac{1 - \cos \theta}{\sin \theta}$$

- Ans**
- ☒ 1. $2 \sec \theta$
 - ☒ 2. $2 \operatorname{cosec} \theta$
 - ☒ 3. $2 \cos \theta$
 - ☒ 4. $2 \sin \theta$

Q.81 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No statue is a book.

No book is a copy.

Conclusions:

(I) No copy is a statue.

(II) Some books are statues.

- Ans**
- ☒ 1. Neither conclusion (I) nor (II) follows
 - ☒ 2. Only conclusion (I) follows
 - ☒ 3. Only conclusion (II) follows
 - ☒ 4. Both conclusions (I) and (II) follow

Q.82 The marked price of a fan is ₹620. Due to off season, a discount of 15% is allowed. The selling price of the fan is:

- Ans**
- ☐ 1. ₹547
 - ☒ 2. ₹527
 - ☐ 3. ₹537
 - ☐ 4. ₹427

Q.83 Considering magnetic field lines, which of the following statements is NOT true?

- Ans**
- ☐ 1. The relative strength of magnetic field exists and can be shown by the degree of closeness of the field lines.
 - ☒ 2. If magnetic field lines are parallel and equidistant, they represent zero field strength.
 - ☐ 3. Magnetic field lines are closed curves.
 - ☐ 4. The direction of the magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points.

Q.84 Who is the Goldman Environmental Prize winner of 2024?

- Ans**
- ☐ 1. Ajay Banga
 - ☐ 2. Karpoori Thakur
 - ☒ 3. Alok Shukla
 - ☐ 4. Gary Ruvkun

Q.85 In a certain code language, 'whispering wind dances' is coded as 'snxk rkwg vzod', and 'wind dances gracefully' is coded as 'snxk vzod lwon'. What is the code for 'gracefully' in the given code language?

- Ans**
- ☐ 1. rkwg
 - ☒ 2. lwon
 - ☐ 3. snxk
 - ☐ 4. vzod

Q.86 Which government passed the Aparajita Women and Child Bill, 2024, in September 2024?

- Ans**
- ☐ 1. Delhi
 - ☐ 2. Punjab
 - ☐ 3. Uttar Pradesh
 - ☒ 4. West Bengal

Q.87 The two isotopic forms of chlorine, with masses 35 u and 37 u, are found in which of the following ratios in nature?

- Ans**
- ☒ 1. 3 : 1
 - ☐ 2. 1 : 5
 - ☐ 3. 1 : 1
 - ☐ 4. 1 : 3

Q.88 In this question, two statements, I and II, have been given. These statements may be independent causes, or effects of independent causes or a common cause. One of the statements may be the effect of the other statement. Read both the statements and select the correct answer.

I. Consumption of sugar has been found out as the main reason for people having diabetes

II. People are avoiding having foods with more sugar content

- Ans**
- ☒ 1. I is the cause and II is its possible effect
 - ☐ 2. Both I and II are independent causes
 - ☐ 3. II is the cause and I is its possible effect
 - ☐ 4. Both I and II are effects of independent causes

Q.89 Which of the following is/are correct about non-biodegradable substances?

A. These substances are not broken down through biological processes.

B. These substances persist in the environment for a short period.

C. These substances may harm the various members of the ecosystem.

- Ans**
- ☐ 1. A, B and C
 - ☐ 2. Only B
 - ☐ 3. Both B and C
 - ☒ 4. Both A and C

Q.90 Which of the following is NOT a prime number?

- Ans**
- ☐ 1. 71
 - ☐ 2. 31
 - ☒ 3. 91
 - ☐ 4. 61

Q.91 Ishan is younger than Surya by 3 years. If the ages of Ishan and Surya are in the ratio 5 : 8, then how old is Surya?

- Ans**
- ☐ 1. 10 years
 - ☐ 2. 7 years
 - ☒ 3. 8 years
 - ☐ 4. 5 years

Q.92 How many types of endoplasmic reticulum are there in cells?

- Ans**
- ☐ 1. Five
 - ☐ 2. Three
 - ☐ 3. Four
 - ☒ 4. Two

Q.93 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. Only two people sit to the left of A. Only three people sit between A and Y. L sits second to the right of A. Only two people sit between L and Z. C sits at some place to the right of B but at some place to the left of X.

How many people sit to the right of C?

- Ans**
- ☐ 1. Two
 - ☐ 2. Four
 - ☒ 3. Three
 - ☐ 4. One

Q.94 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 116 :: 16 : Y

- Ans**
- ☐ 1. X = 13, Y = 145
 - ☐ 2. X = 11, Y = 143
 - ☒ 3. X = 13, Y = 143
 - ☐ 4. X = 13, Y = 144

Q.95 Suppose a number of rays parallel to the principal axis are falling on a concave mirror, then all the reflected rays will intersect:

- Ans**
- ☒ 1. at the principal focus
 - ☐ 2. in between the pole and infinity
 - ☐ 3. at the pole
 - ☐ 4. at infinity

Q.96 An object of height 30 cm is placed in front of a concave lens and an image of height 10 cm is formed. The magnification of the lens is:

- Ans**
- ☐ 1. 20
 - ☒ 2. $\frac{1}{3}$
 - ☐ 3. -20
 - ☐ 4. 3

Q.97 The work done (in Joule) by a constant force of 10 N on an object that is displaced by an amount D meter in the direction of the force is:

- Ans**
- ☐ 1. 0
 - ☐ 2. -10D
 - ☒ 3. +10D
 - ☐ 4. D

Q.98 Amita's income in 2019 was ₹21,000. She gets an increment of 10% every year. What was her income in 2021?

- Ans**
- ☐ 1. ₹29,100
 - ☐ 2. ₹26,530
 - ☒ 3. ₹25,410
 - ☐ 4. ₹23,100

Q.99 A man sold a shirt for ₹960, at a loss of 4%. He sold a sweater for ₹840 at a profit of 20%. Find his net profit or loss.

- Ans**
- ☐ 1. Profit, ₹123
 - ☐ 2. Loss, ₹123
 - ☐ 3. Loss, ₹100
 - ☒ 4. Profit, ₹100

Q.100 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DZM, GYL, JXK, MWJ, ?

- Ans**
- ☐ 1. OVI
 - ☐ 2. ORI
 - ☐ 3. RVI
 - ☒ 4. PVI

2024/12/26-22:27:25



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	24/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

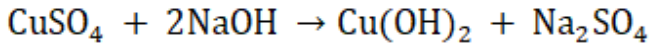
Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The following equation is an example of which type of reaction?



- Ans
- ☒ 1. Neutralisation reaction
 - ☒ 2. Combination reaction
 - ☒ 3. Double displacement reaction
 - ☒ 4. Combustion reaction

Q.2 $75 \times 75 - 2 \times 75 \times 25 + 25 \times 25$ is equal to:

- Ans
- ☒ 1. 10000
 - ☒ 2. 6250
 - ☒ 3. 7500
 - ☒ 4. 2500

Q.3 Two pipes A and B can fill a tank in 15 minutes and 20 minutes, respectively. Both the pipes are opened together but after 4 minutes, pipe A is turned off. What is the total time required to fill the tank?

- Ans
- ☒ 1. 12 min 30 sec
 - ☒ 2. 10 min 20 sec
 - ☒ 3. 14 min 40 sec
 - ☒ 4. 11 min 45 sec

Q.4 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. A is kept immediately above B. Z is kept immediately above C. Only X is kept above Y. Only two boxes are kept above A. Z is not kept at third position from the bottom.

How many boxes are kept between L and X?

- Ans
- ☒ 1. One
 - ☒ 2. Four
 - ☒ 3. Two
 - ☒ 4. Three

Q.5 Involuntary actions including blood pressure, salivation and vomiting are controlled by:

- Ans**
- ☐ 1. only the spinal cord
 - ☒ 2. the medulla in the hind-brain
 - ☐ 3. the cerebellum in the fore-brain
 - ☐ 4. only the heart

Q.6 A cart is moving with a uniform velocity and a retarding force F is applied in the opposite direction to stop the cart. The work done by the force is:

- Ans**
- ☐ 1. positive
 - ☐ 2. zero
 - ☐ 3. undetermined
 - ☒ 4. negative

Q.7 How many seconds will a train of 100 m long take to cross a bridge of 150 m long if the speed of the train is 36 km/h?

- Ans**
- ☐ 1. 20
 - ☒ 2. 25
 - ☐ 3. 18
 - ☐ 4. 30

Q.8 Animals like hydra and planaria can be cut into any number of pieces and each piece grows into a complete organism. This is known as:

- Ans**
- ☒ 1. regeneration
 - ☐ 2. binary fission
 - ☐ 3. budding
 - ☐ 4. fragmentation

Q.9 Which of the following forces is responsible for the tides, due to the Moon and the Sun?

- Ans**
- ☐ 1. Electromagnetic force
 - ☐ 2. Nuclear force
 - ☒ 3. Gravitation force
 - ☐ 4. Electrostatic force

Q.10 If the radius of a circle is decreased by 50%, its area is reduced by:

- Ans**
- ☐ 1. 33.33%
 - ☐ 2. 25%
 - ☒ 3. 75%
 - ☐ 4. 50%

Q.11 If A means +, B means $-$, C means \times , D means \div , then what will come in place of the question mark (?) in the following equation?

$$25 \text{ B } 3 \text{ C } 4 \text{ A } 30 \text{ D } 6 = ?$$

- Ans**
- ☐ 1. 20
 - ☐ 2. 17
 - ☐ 3. 19
 - ☒ 4. 18

Q.12 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. T is not an immediate neighbour of P. Only 3 people sit between P and R when counted from the right of P. V sits immediately to the left of S. Q sits 2nd to the left of R. Who sits 2nd to the left of T?

- Ans**
- ☐ 1. P
 - ☐ 2. S
 - ☐ 3. V
 - ☒ 4. U

Q.13 What will come in the place of '?' in the following equation, if '×' and '÷' are interchanged and '−' and '+' are interchanged?

$$7 \div 3 + 15 - 28 \times 7 = ?$$

- Ans**
- ☒ 1. 10
 - ☐ 2. 100
 - ☐ 3. 70
 - ☐ 4. 40

Q.14 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 8 9 7 1 4 1 5 7 5 8 9 6 1 0 6 2 4 6 1 1 9 0 3 1 8 9 4 3 1 7 (Right)

What is the sum of the 8th digit from the left and the 1st digit from the right?

- Ans**
- ☐ 1. 17
 - ☐ 2. 16
 - ☒ 3. 14
 - ☐ 4. 11

Q.15 An athlete is moving with uniform speed in a circular track of radius R, and he completes one round in t s. The speed of the athlete is:

- Ans**
- ☐ 1. $\frac{\pi R}{t}$
 - ☒ 2. $\frac{2\pi R}{t}$
 - ☐ 3. $\frac{\pi R}{2t}$
 - ☐ 4. $\frac{3\pi R}{t}$

Q.16 Simplify $1.\overline{24}$ as an improper fraction.

- Ans**
- ☐ 1. $\frac{123}{90}$
 - ☐ 2. $\frac{91}{90}$
 - ☐ 3. $\frac{124}{99}$
 - ☒ 4. $\frac{41}{33}$

Q.17 From the given following metals, which one is least reactive towards displacement reaction?

Copper, iron, zinc and lead.

- Ans
- ☒ 1. Lead
 - ☒ 2. Copper
 - ☒ 3. Iron
 - ☒ 4. Iron and zinc

Q.18 The mean proportional between 0.06 and 24 is:

- Ans
- ☒ 1. 0.012
 - ☒ 2. 12
 - ☒ 3. 0.12
 - ☒ 4. 1.2

Q.19 Which of the following symptoms is related to myopia?

- Ans
- ☒ 1. A person cannot see both nearby and distant objects distinctly.
 - ☒ 2. A person can see nearby objects clearly but cannot see distant objects distinctly.
 - ☒ 3. A person can see distant objects clearly but cannot see nearby objects distinctly.
 - ☒ 4. A person can see both nearby and distant objects distinctly.

Q.20 Select the correct chemical reaction that represents the chlor-alkali process.

- Ans
- ☒ 1. $2\text{KCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{KOH}(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$
 - ☒ 2. $2\text{CaCl}_2(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{Ca}(\text{OH})_2(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$
 - ☒ 3. $2\text{NaCl}(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$
 - ☒ 4. $2\text{MgCl}_2(\text{aq}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{Mg}(\text{OH})_2(\text{aq}) + \text{Cl}_2(\text{g}) + \text{H}_2(\text{g})$

Q.21 In $\triangle ABC$ if $\angle A = 70^\circ$ and $\angle B = 70^\circ$, find the measure of exterior angle A.

- Ans
- ☒ 1. 110°
 - ☒ 2. 70°
 - ☒ 3. 30°
 - ☒ 4. 140°

Q.22 Which of the following statements is correct for a heterogeneous mixture?

- Ans
- ☒ 1. A clear solution is called a heterogeneous mixture.
 - ☒ 2. The composition of the mixture is non-uniform.
 - ☒ 3. Mixtures don't contain physically distinct parts.
 - ☒ 4. The composition of the mixture is uniform.

Q.23 An object is displaced horizontally because of the applied force. What is revealed by this action?

- Ans**
- ✓ 1. Work is done by the force.
 - ✗ 2. The force decreases the mass of the object.
 - ✗ 3. The force increases the inertia of the object.
 - ✗ 4. The force increases the mass of the object.

Q.24 A solid metallic sphere of radius 12 cm is melted and recast into 27 identical spheres. What is the ratio of the surface area of the original sphere to the total surface area of 8 smaller spheres so formed?

- Ans**
- ✗ 1. 9 : 4
 - ✓ 2. 9 : 8
 - ✗ 3. 3 : 1
 - ✗ 4. 3 : 2

Q.25 Which of the following is INCORRECT about plant hormones?

- Ans**
- ✓ 1. All plant hormones except cytokinins promote cell division.
 - ✗ 2. All plant hormones except abscisic acid help in promoting growth.
 - ✗ 3. Different plant hormones help to coordinate growth and development.
 - ✗ 4. Different plant hormones help to coordinate responses to the environment.

Q.26 The Carriage of Goods by Sea Bill, 2024, was introduced in the Lok Sabha on ____.

- Ans**
- ✗ 1. 6 August 2024
 - ✓ 2. 9 August 2024
 - ✗ 3. 7 August 2024
 - ✗ 4. 8 August 2024

Q.27 According to the laws of refraction, which of the following is/are true?

- (A) The incident ray, the refracted ray and the normal to the interface of two transparent media do not lie in the same plane.
- (B) For a given colour of light and a given pair of media, the ratio of the sine of angle of incidence to sine of angle of refraction is a constant.

- Ans**
- ✗ 1. 'A' is true and 'B' is false.
 - ✓ 2. 'A' is false and 'B' is true.
 - ✗ 3. Both 'A' and 'B' are false.
 - ✗ 4. Both 'A' and 'B' are true.

Q.28 The refractive index is related to:

- Ans**
- ✗ 1. the frequency of light in two different media
 - ✗ 2. the dielectric polarizability of two media
 - ✓ 3. the speed of propagation of light in two different media
 - ✗ 4. the magnetic moment of two different media

Q.29 The weight of an object was 60 N when measured on the surface of the earth.

What would be its weight when measured on the surface of the moon?

- Ans**
- ☒ 1. 10 N
 - ☐ 2. 60 N
 - ☐ 3. 39 N
 - ☐ 4. 30 N

Q.30 The square root of 0.0009 is:

- Ans**
- ☒ 1. 0.03
 - ☐ 2. 0.81
 - ☐ 3. 0.27
 - ☐ 4. 0.003

Q.31 The Reserve Bank of India (RBI) announced its monetary policy on 9th October 2024, maintaining the repo rate at _____.

- Ans**
- ☒ 1. 6.5%
 - ☐ 2. 6.25%
 - ☐ 3. 7.5%
 - ☐ 4. 6.75%

Q.32 Which organisation has partnered with Sagar Defence to develop India's first underwater-launched unmanned aerial vehicles (UAVs)?

- Ans**
- ☒ 1. DRDO
 - ☐ 2. Bharat Electronics Limited (BEL)
 - ☐ 3. ISRO
 - ☐ 4. Indian Navy

Q.33 The aperture of a spherical mirror is:

- Ans**
- ☐ 1. the distance between the object and the mirror
 - ☐ 2. the distance between the centre of curvature and the focus
 - ☒ 3. the diameter of the reflecting surface of the mirror
 - ☐ 4. the distance between the image and the mirror

Q.34 Namya got married 6 years ago. Now her age is $1\frac{1}{4}$ times her age at the time of marriage. Her son's present age is one-fifth of her present age. Find her son's present age.

- Ans**
- ☐ 1. 12 years
 - ☐ 2. 5 years
 - ☒ 3. 6 years
 - ☐ 4. 20 years

Q.35 In a certain code language, 'exercise good health' is coded as 'ni ch tu' and 'exercise improve stamina' is coded as 'pa qi ch'. What is the code for 'exercise' in the given code language?

- Ans**
- ☐ 1. ni
 - ☐ 2. tu
 - ☐ 3. pa
 - ☒ 4. ch

Q.36 Rita, Suman, Tarun, Uma, Victor and Wendy are sitting around a circular table facing the centre. Rita sits third to the right of Suman. Tarun sits second to left of Suman. Uma sits to the immediate left of Rita. Victor is not an immediate neighbour of Tarun.

How many people sit between Suman and Victor when counted from the right of Suman ?

- Ans**
- ☐ 1. One
 - ☐ 2. Three
 - ☐ 3. Two
 - ☒ 4. Zero

Q.37 Who is the current Directorate General of National Cadet Corps of India as of October 2024?

- Ans**
- ☐ 1. Bikram Singh
 - ☐ 2. Manoj Pande
 - ☐ 3. Dalbir Singh Suhag
 - ☒ 4. Gurbirpal Singh

Q.38 $\frac{3}{20}$ is what percentage of $\frac{12}{25}$?

- Ans**
- ☒ 1. 31.25%
 - ☐ 2. 35.50%
 - ☐ 3. 40.50%
 - ☐ 4. 42.75%

Q.39 What will be the name of product that is formed when metals react with air?

- Ans**
- ☐ 1. Metal hydride
 - ☒ 2. Metal oxide
 - ☐ 3. Metal chloride
 - ☐ 4. Metal nitrate

Q.40 There is a leak at the bottom of a cistern. Due to this it takes 8 hours to fill the cistern. Had there not been a leak, it would have taken one hour less to fill the cistern. How much time does it take for the leak to completely empty the cistern?

- Ans**
- ☒ 1. 56 hours
 - ☐ 2. 15 hours
 - ☐ 3. 48 hours
 - ☐ 4. $55\frac{1}{3}$ hours

Q.41 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(15, 5, 10)

(24, 8, 16)

- Ans**
- ☐ 1. (39,13,24)
 - ☐ 2. (36, 13, 26)
 - ☐ 3. (39, 11, 26)
 - ☒ 4. (39, 13, 26)

Q.42 Burning of coal is an example of which type of chemical reaction?

- Ans**
- ☐ 1. Reduction reaction
 - ☐ 2. Decomposition reaction
 - ☐ 3. Double decomposition reaction
 - ☒ 4. Combination reaction

Q.43 The magnetic field lines produced inside a long current carrying solenoid is similar to that of a:

- Ans**
- ☐ 1. horseshoe magnet
 - ☐ 2. disc magnet
 - ☒ 3. bar magnet
 - ☐ 4. ring magnet

Q.44 A bag marked at ₹80 is sold for ₹68. The rate of discount is:

- Ans**
- ☐ 1. 12%
 - ☐ 2. 20%
 - ☐ 3. 17.5%
 - ☒ 4. 15%

Q.45 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 2 2 3 3 1 7 8 4 2 8 6 5 4 3 9 1 4 2 1 2 9 1 6 2 3 4 8 1 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit?

(Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 3
 - ☐ 2. 6
 - ☐ 3. 4
 - ☐ 4. 5

Q.46 Match the cell organelles with their respective functions.

Cell organelles	Functions
1. Cell wall	a. Digests any foreign matter and worn-out cellular components
2. Ribosomes	b. Gives plants their structural strength
3. Lysosomes	c. Sites involved in protein manufacture
4. Golgi apparatus	d. Linked to the production of lysosomes

- Ans**
- ☒ 1. 1-b, 2-c, 3-a, 4-d
 - ☐ 2. 1-a, 2-b, 3-c, 4-d
 - ☐ 3. 1-b, 2-d, 3-c, 4-a
 - ☐ 4. 1-c, 2-a, 3-d, 4-b

Q.47 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

IE-LH-OQ

FB-IE-LN

- Ans**
- ☒ 1. MH-OJ-RT
 - ☐ 2. LH-OK-RT
 - ☒ 3. LH-OJ-RS
 - ☒ 4. MH-OK-RS

Q.48 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some chocolates are pudding.

All puddings are ice creams.

Some ice creams are lollipops.

Conclusions:

(I) Some lollipops are chocolates.

(II) Some ice creams are pudding.

- Ans**
- ☒ 1. Neither conclusion (I) nor (II) follows.
 - ☐ 2. Only conclusion (II) follows.
 - ☒ 3. Both conclusions (I) and (II) follow.
 - ☒ 4. Only conclusion (I) follows.

Q.49 _____ became the first Indian to win a race at FIA Motorsport Games in October 2024.

- Ans**
- ☒ 1. Narain Karthikeyan
 - ☐ 2. Rivaan Dev Preetham
 - ☒ 3. Sundaram Karivaradhan
 - ☒ 4. Jehan Devan Daruvala

Q.50 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 1 3 3 0 6 0 2 9 1 8 4 2 2 5 4 6 8 5 8 1 3 5 0 2 1 3 9 5 4 (Right)

What is the sum of the 15th digit from the left and the 11th digit from the right?

- Ans**
- ☒ 1. 13
 - ☒ 2. 11
 - ☒ 3. 14
 - ☒ 4. 16

Q.51 The chemical reaction between an acid and base is termed as:

- Ans**
- ☒ 1. endothermic reaction
 - ☒ 2. decomposition reaction
 - ☒ 3. condensation reaction
 - ☐ 4. neutralisation reaction

Q.52 The percentage profit earned by James by selling an article for ₹1,920, equals the percentage loss suffered by selling it at ₹1,500. What should be the selling price if he wants to earn 10% profit?

- Ans**
- ☒ 1. ₹4,000
 - ☒ 2. ₹1,881
 - ☐ 3. ₹7,000
 - ☐ 4. ₹2,000

Q.53 Which of the following is produced when barium chloride reacts with sodium sulphate?

- Ans**
- ☒ 1. White precipitate of BaSO_4
 - ☐ 2. Black precipitate of BaSO_4
 - ☐ 3. Yellow precipitate of BaSO_4
 - ☐ 4. Brown precipitate of BaSO_4

Q.54 In this question, two statements, I and II, have been given. These statements may be independent causes, or effects of independent causes or a common cause. One of the statements may be the effect of the other statement. Read both the statements and select the correct answer.

I. Martial arts like karate emphasize discipline and self-control, teaching practitioners to harness their strength for both defence and personal growth.

II. Karate is being made compulsory in every school.

- Ans**
- ☐ 1. II is the cause and I is its possible effect.
 - ☐ 2. Both I and II are effects of independent causes.
 - ☒ 3. I is the cause and II is its possible effect.
 - ☐ 4. Both I and II are independent causes.

Q.55 Which of the following is the correct unit mass of sodium?

- Ans**
- ☒ 1. 23u
 - ☐ 2. 18u
 - ☐ 3. 11u
 - ☐ 4. 20u

Q.56 Use of regenerative cells in the process of budding is present in:

- Ans**
- ☐ 1. Spirogyra
 - ☒ 2. Hydra
 - ☐ 3. Planaria
 - ☐ 4. Amoeba

Q.57 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. S V A F
 - ☐ 2. Y C G K
 - ☐ 3. M Q U Y
 - ☐ 4. X B F J

Q.58 Simplify the given expression.

$$4 - 36 \div 4 + 2 \times 5$$

- Ans**
- ☐ 1. 3
 - ☐ 2. 4
 - ☐ 3. 6
 - ☒ 4. 5

Q.59 Which of the following is the tiny blob-on-a-stick structures in fungi that are involved in reproduction?

- Ans**
- ☐ 1. Spermatogonia
 - ☒ 2. Sporangia
 - ☐ 3. Gametophyte
 - ☐ 4. Sporophyte

Q.60 The curved surface area of a cylinder is 484 sq. cm. If height of the cylinder is 7 cm, then what is the volume of the cylinder (in cubic cm)? (Use $\pi = \frac{22}{7}$)

- Ans**
- ☒ 1. 2662
 - ☐ 2. 2200
 - ☐ 3. 2750
 - ☐ 4. 2650

Q.61 Ramu is working hard to push a huge rock by applying 1N force, but the rock does not move at all. The net work done by Ramu is:

- Ans**
- ☐ 1. +1 J
 - ☐ 2. 1000 J
 - ☒ 3. 0 J
 - ☐ 4. -1 J

Q.62 Which of the following statements is/are correct related to the eco-system?

- (i) Ozone is a molecule formed by three atoms of oxygen.
- (ii) Oxygen (O₂) is essential for all aerobic forms of life.
- (iii) Ozone is non-poisonous.

- Ans**
- ☒ 1. Only (i) and (ii)
 - ☐ 2. Only (i) and (iii)
 - ☐ 3. Only (i)
 - ☐ 4. (i), (ii) and (iii)

Q.63 In a certain code language, 'education gives knowledge' is coded as 'ta bi nu' and 'knowledge upgrades skill' is coded as 'hi nu ch'. What is the code for 'knowledge' in the given code language?

- Ans**
- ☐ 1. ta
 - ☒ 2. nu
 - ☐ 3. bi
 - ☐ 4. hi

Q.64 The average of the first five prime numbers greater than 20 is:

- Ans**
- ☐ 1. 32.7
 - ☒ 2. 32.2
 - ☐ 3. 31.1
 - ☐ 4. 31.7

Q.65 Find the simple interest on ₹600 at 7% per month in 9 months.

- Ans**
- ☐ 1. ₹398
 - ☐ 2. ₹334
 - ☐ 3. ₹354
 - ☒ 4. ₹378

Q.66 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EIM, HLP, KOS, NRV, ?

- Ans**
- ☐ 1. UYQ
 - ☐ 2. UQY
 - ☒ 3. QUY
 - ☐ 4. QYU

Q.67 Which of the given substances is NOT biodegradable in nature?

- A. Vegetable peels
- B. Plastic bottles
- C. Spoilt food

- Ans**
- ☒ 1. Only B
 - ☐ 2. Both A and C
 - ☐ 3. A, B and C
 - ☐ 4. Only A

Q.68 According to Thomson's model of an atom, an atom is compared to which of the following fruits?

- Ans**
- ☐ 1. Apple
 - ☐ 2. Mango
 - ☒ 3. Watermelon
 - ☐ 4. Banana

Q.69 Namita starts from point A and drives 6 km towards the South. She takes two simultaneous left turns and drives 4 km and 3 km respectively. She takes a right turn and drives 2 km. She takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should she drive to reach Point A again? (All turns are 90 degrees only unless specified.)

- Ans**
- ☒ 1. 6 km West
 - ☐ 2. 6 km South
 - ☐ 3. 4 km West
 - ☐ 4. 3 km South

Q.70 Identify the INCORRECT statement about complex permanent tissue.

- Ans**
- ☒ 1. Cells in a complex tissue work together to perform a common function.
 - ☒ 2. Vascular bundles are a characteristic feature of complex tissues.
 - ☒ 3. Complex tissue includes parenchyma and collenchyma.
 - ☒ 4. There is more than one type of cell in a complex tissue.

Q.71 In order to put up Rutherford's model, what type of metal foil did the scientist use?

- Ans**
- ☒ 1. Gold
 - ☒ 2. Platinum
 - ☒ 3. Palladium
 - ☒ 4. Silver

Q.72 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

6, 18, 30, 66, 126, ?

- Ans**
- ☒ 1. 258
 - ☒ 2. 270
 - ☒ 3. 266
 - ☒ 4. 242

Q.73 If 63 chocolates are to be divided between A and B in the ratio 4 : 5, then how many chocolates will A get?

- Ans**
- ☒ 1. 28
 - ☒ 2. 35
 - ☒ 3. 27
 - ☒ 4. 49

Q.74 The average weight of A, B and C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight of B is:

- Ans**
- ☒ 1. 26 kg
 - ☒ 2. 31 kg
 - ☒ 3. 19 kg
 - ☒ 4. 23 kg

Q.75 Which of the following carries egg from the ovary to the womb?

- Ans**
- ☒ 1. Cervix
 - ☒ 2. Vagina
 - ☒ 3. Fallopian tube
 - ☒ 4. Placenta

Q.76 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DIN, FKP, HMR, JOT, ?

- Ans**
- ☒ 1. LQV
 - ☐ 2. KOX
 - ☐ 3. KOU
 - ☐ 4. KOV

Q.77 $\frac{3-4\sin^2\theta}{\cos^2\theta} + 2\tan^2\theta$

can be simplified as:

- Ans**
- ☐ 1. 0
 - ☐ 2. $3\tan^2\theta$
 - ☒ 3. $3 + \tan^2\theta$
 - ☐ 4. 3

Q.78 What is the function of gustatory receptors?

- Ans**
- ☐ 1. They detect light.
 - ☐ 2. They detect smell.
 - ☒ 3. They detect taste.
 - ☐ 4. They detect sound.

Q.79 The Indian government has allocated ₹_____ for the National Film Development Corporation in the 2024-25 budget.

- Ans**
- ☒ 1. 23 crore
 - ☐ 2. 16 crore
 - ☐ 3. 46 crore
 - ☐ 4. 36 crore

Q.80 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 45 :: 16 : Y

- Ans**
- ☐ 1. X = 14, Y = 85
 - ☐ 2. X = 14, Y = 75
 - ☐ 3. X = 10, Y = 65
 - ☒ 4. X = 10, Y = 75

Q.81 If the length of a conductor is doubled, then the resistance of the conductor will be: (other parameters are kept same)

- Ans**
- ☐ 1. one fourth
 - ☒ 2. doubled
 - ☐ 3. halved
 - ☐ 4. the same

Q.82 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. WYU
 - ☐ 2. SNI
 - ☐ 3. LGB
 - ☐ 4. XSN

Q.83 During the deposition procedure, which type of state conversion will take place?

- Ans**
- ☐ 1. Liquid to solid state
 - ☐ 2. Solid to liquid state
 - ☐ 3. Solid to gaseous state
 - ☒ 4. Gaseous to solid state

Q.84 Which plant species does NOT reproduce through vegetative propagation?

- Ans**
- ☐ 1. Rose
 - ☐ 2. Banana
 - ☐ 3. Sugarcane
 - ☒ 4. Papaya

Q.85 In a certain code language,

$A + B$ means 'A is the sister of B',

$A - B$ means 'A is the wife of B',

$A \times B$ means 'A is the father of B',

and $A \div B$ means 'A is the brother of B'.

How is P related to T if ' $P + Q - R \times S \div T$ '?

- Ans**
- ☐ 1. Father's sister
 - ☐ 2. Mother's mother
 - ☒ 3. Mother's sister
 - ☐ 4. Father's mother

Q.86 Considering the right-hand thumb rule, what parameter is indicated by the fingers curled around the conductor?

- Ans**
- ☐ 1. Current
 - ☒ 2. Magnetic field
 - ☐ 3. Deflection of needle
 - ☐ 4. Force

Q.87 The sum of the two positive numbers is 55 and their difference is 19. What are the numbers?

- Ans**
- ☐ 1. 40, 15
 - ☐ 2. 36, 19
 - ☒ 3. 37, 18
 - ☐ 4. 35, 20

Q.88 The Moidams-the Mound-Burial System of the Ahom Dynasty in _____ was added to the list of UNESCO World Heritage Sites in 2024.

- Ans**
- ☐ 1. Mizoram
 - ☐ 2. Manipur
 - ☒ 3. Assam
 - ☐ 4. Meghalaya

Q.89 In case of a drastic change in niches of organisms, which of the following can save the population of an organism from getting completely wiped out?

- Ans**
- ☐ 1. Nutrition
 - ☐ 2. Evolution
 - ☒ 3. Variation
 - ☐ 4. Isolation

Q.90 _____ has become the first Indian track-and-field athlete to win medals at consecutive Olympics.

- Ans**
- ☒ 1. Neeraj Chopra
 - ☐ 2. Manu Bhaker
 - ☐ 3. Swapnil Kusale
 - ☐ 4. Aman Sehrawat

Q.91 Study the following table and answer the question.

The table depicts the number of books sold by shops A and B to males and females on Monday

Shops	Number of books sold to males	Number of books sold to females
A	71	78
B	34	40

What is the difference between the number of books sold by shops A and B to females?

- Ans**
- ☒ 1. 38
 - ☐ 2. 37
 - ☐ 3. 39
 - ☐ 4. 40

Q.92 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All bats are balls.

All balls are wickets.

No wickets are gloves.

Conclusions:

(I) Some balls are bats.

(II) Some wickets are balls.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☐ 2. Neither conclusion (I) nor (II) follows.
 - ☐ 3. Only conclusion (I) follows.
 - ☒ 4. Both conclusions (I) and (II) follow.

Q.93 By whom was the 'Ek Ped Maa Ke Naam' tree plantation campaign launched throughout the country on the World Environment Day (5th June 2024)?

- Ans**
- ☐ 1. Dr. Jitendra Singh
 - ☒ 2. Shri Narendra Modi
 - ☐ 3. Shri Bhupender Yadav
 - ☐ 4. Shri Amit Shah

Q.94 _____ on 9 September 2024 emphasised that safety and social audits of cities and institutions should be carried out to get a better idea about the lags and issues that currently exist in terms of ensuring women's safety in India.

- Ans**
- ☐ 1. The Prajnya Trust for Women (PTW)
 - ☐ 2. The Self-Employed Women's Association (SEWA)
 - ☒ 3. The National Human Rights Commission (NHRC)
 - ☐ 4. The All India Federation of Women Lawyers (AIFWL)

Q.95 There are two statements given below. Select the correct option with regards to these statements.

A. The loss of water in the form of vapour from the aerial parts of the plant is known as transpiration.

B. During the day when the stomata are open, the transpiration pull becomes the major driving force in the movement of water in the xylem.

- Ans**
- ☐ 1. A is incorrect and B is correct.
 - ☐ 2. A is correct and B is incorrect.
 - ☐ 3. Both A and B are incorrect.
 - ☒ 4. Both A and B are correct.

Q.96 NSQO is related to TYWU in a certain way based on the English alphabetical order. In the same way, JOMK is related to PUSQ. To which of the following options is LQOM related, following the same logic?

- Ans**
- ☐ 1. WRSU
 - ☐ 2. WRUS
 - ☐ 3. RWSU
 - ☒ 4. RWUS

Q.97 Neeta bought 5.5 ltr of mango juice. She and her friends consumed 3 ltr 925 ml of the juice. How much juice is left with her?

- Ans**
- ✓ 1. 1 ltr 575 ml
 - ✗ 2. 1 ltr 275 ml
 - ✗ 3. 1 ltr 375 ml
 - ✗ 4. 1 ltr 475 ml

Q.98 A sum of money lent on simple interest becomes $\frac{8}{5}$ of itself in 4 years. Find the rate of interest per annum.

- Ans**
- ✓ 1. 15%
 - ✗ 2. 12%
 - ✗ 3. 10%
 - ✗ 4. 6%

Q.99 Which of the following molecules has single covalent bond?

- Ans**
- ✗ 1. O₂
 - ✓ 2. H₂
 - ✗ 3. N₂
 - ✗ 4. CO₂

Q.100 What is the remainder when the product of 171 and 173 is divided by 17?

- Ans**
- ✗ 1. 11
 - ✓ 2. 3
 - ✗ 3. 7
 - ✗ 4. 1

2024/12/26-23:29:11



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	26/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 According to the Newton's third law of motion, to every action:

- Ans**
- ☒ 1. there is an unequal and opposite reaction and they act on the same body
 - ☒ 2. there is an equal and opposite reaction and they act on two different bodies
 - ☐ 3. there is an equal and opposite reaction and they act on the same body
 - ☐ 4. there is an equal and perpendicular reaction and they act on two different bodies

Q.2 Hari purchased 25 kg of wheat at the rate of ₹4 per kg and 35 kg of wheat at ₹4.50 per kg. He sold the mixture at the rate of ₹4.25 per kg. Find his gain or loss.


- Ans**
- ☐ 1. ₹3.50, profit
 - ☐ 2. ₹2.00, loss
 - ☒ 3. ₹2.50, loss
 - ☐ 4. ₹3.00, profit


Q.3 What is the strength of the magnetic field found inside a current carrying solenoid?


- Ans**
- ☐ 1. More at the ends than at the centre
 - ☐ 2. Minimum in the middle
 - ☐ 3. Found to increase from one end to the other
 - ☒ 4. Same at all points

Q.4 The correct expression of $8.\overline{46}$ in the fractional form is _____.

Ans  1. $\frac{838}{99}$

 2. $\frac{83}{99}$

 3. $\frac{846}{99}$

 4. $\frac{84}{99}$

Q.5 Which city was identified as the most polluted in 2023 according to the Sixth Annual World Air Quality Report?

Ans  1. Mumbai

 2. Begusarai

 3. Delhi

 4. Kolkata

Q.6 In a certain code language, 'happy children play' is coded as 'ha ch pl', and 'children love toys' is coded as 'ch lo tk'. What is the code for 'children' in the given code language?


Ans  1. Lo


 2. ha


 3. pl


 4. ch

Q.7 Which of the following pairs has the same unit?

Ans  1. (i) Force and (ii) Inertia

 2. (i) Energy and (ii) Inertia

 3. (i) Work and (ii) Energy

 4. (i) Force and (ii) Work

Q.8 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:


All onions are tomatoes.


Some tomatoes are potatoes.


Conclusions:


I. At least some tomatoes are onions.

II. Some onions are potatoes.

Ans  1. Neither conclusion I nor II follows

 2. Both conclusions I and II follow

 3. Only conclusion I follows

 4. Only conclusion II follows

Q.9 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some plates are glasses.

Some glasses are bowls.

Some bowls are cups.

Conclusions:

(I) Some cups are glasses.

(II) Some bowls are plates.

- Ans**
- ☐ 1. Only conclusion (I) follows.
 - ☐ 2. Both conclusions (I) and (II) follow.
 - ☐ 3. Only conclusion (II) follows.
 - ☒ 4. Neither conclusion (I) nor (II) follows.

Q.10 Two numbers are in the ratio 4 : 1. If difference between the numbers is 54, then find the greater number.

- Ans**
- ☒ 1. 72
 - ☐ 2. 42
 - ☐ 3. 90
 - ☐ 4. 56

Q.11 CH_3OH , $\text{C}_2\text{H}_5\text{OH}$, $\text{C}_3\text{H}_7\text{OH}$ and $\text{C}_4\text{H}_9\text{OH}$ compounds exhibit almost similar chemical properties because they belong to:

- Ans**
- ☒ 1. a homologous series
 - ☐ 2. a heterologous series
 - ☐ 3. a periodic series
 - ☐ 4. an electrochemical series





Q.12 In which of the following months was the Project PARI (Public Art of India) initiated?





- Ans**
- ☐ 1. October 2024
 - ☐ 2. August 2024
 - ☐ 3. September 2024
 - ☒ 4. July 2024





Q.13 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$16 - 2 + 5 \div 12 \times 2 = ?$$

- Ans**
- ☐ 1. 25
 - ☐ 2. 18
 - ☐ 3. 45
 - ☒ 4. 30

- Q.14** Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).
- (Left) 7 6 3 9 5 4 4 8 6 4 8 8 9 6 9 2 2 6 3 1 5 5 3 5 1 5 5 0 3 4 (Right)
- What is the sum of the 15th digit from the left and the 11th digit from the right?
- Ans**  1. 12
 2. 7
 3. 11
 4. 10

- Q.15** Which of the following plant hormones helps in promoting growth?
- Ans**  1. Auxin, Cytokinins and Absciscic acid
 2. Auxin, Cytokinins and Gibberellins
 3. Gibberellins, Cytokinins and Absciscic acid
 4. Auxin, Absciscic acid and Gibberellins

- Q.16** In a certain code language, 'ARID' is coded as '9078' and 'DIRE' is coded as '8095'. What is the code for 'E' in the given code language?
- Ans**  1. 9
 2. 8
 3. 5
 4. 0





- Q.17** In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.





Statement:

Air quality in City A has significantly deteriorated over the last decade due to increased industrial emissions.

Courses of Action:

- I. Authorities of City A should implement strict emission control regulations for industries in the city.
II. The industries should distribute face masks to the residents of City A to protect them from the poor air quality.

- Ans**  1. Only I follows
 2. Neither I nor II follows
 3. Only II follows
 4. Both I and II follow

- Q.18** Which of the following statements is true for an ionic compound?
- Ans**  1. In an ionic compound, the transfer of electrons takes place from a metal to a non-metal.
 2. In an ionic compound, the transfer of electrons takes place from a non-metal to a metal.
 3. In an ionic compound, the transfer of electrons takes place from a metal to a metal.
 4. In an ionic compound, the transfer of electrons takes place from a non-metal to a non-metal.

Q.19 A resistor has current flowing through it. If its resistance is halved while the voltage across it is kept constant, what will be the change in current?

- Ans**
- ☐ 1. It will remain the same.
 - ☐ 2. It will be halved.
 - ☒ 3. It will be doubled.
 - ☐ 4. It will become zero.

Q.20 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

329, 472, 615, 758, 901, ?

- Ans**
- ☐ 1. 1068
 - ☐ 2. 1082
 - ☒ 3. 1044
 - ☐ 4. 1025

Q.21 Pipe A, pipe B and pipe C together can fill a tank in 20 minutes, but because of the leak all three pipes take 10 minutes more time to fill the tank completely. Find the time in which leak can empty the full tank.

- Ans**
- ☐ 1. 40 min
 - ☒ 2. 60 min
 - ☐ 3. 30 min
 - ☐ 4. 45 min

Q.22 Which of the following pairs is an example of a solid state of matter?

- Ans**
- ☐ 1. Juice and milk
 - ☐ 2. Oil and sugar
 - ☐ 3. Water and oxygen
 - ☒ 4. Sugar and sponge

Q.23 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 1 9 4 7 7 1 4 4 1 2 8 5 4 2 6 0 3 2 2 9 3 5 4 4 6 4 5 4 7 (Right)

What is the sum of the 10th digit from the left and the 12th digit from the right?

- Ans**
- ☐ 1. 4
 - ☒ 2. 3
 - ☐ 3. 2
 - ☐ 4. 1

Q.24 The difference between the ages of two siblings is 7 years. If the sum of their ages is 21 years, how old is the elder of the siblings?

- Ans**
- ☐ 1. 7 years
 - ☐ 2. 3 years
 - ☐ 3. 10 years
 - ☒ 4. 14 years

Q.25 How many prime numbers are there between 1 and 50?

- Ans
- ☐ 1. 13
 - ☐ 2. 14
 - ☐ 3. 16
 - ☒ 4. 15

Q.26 Which of the following is NOT a subatomic particle?

- Ans
- ☐ 1. Neutron
 - ☒ 2. Molecule
 - ☐ 3. Electron
 - ☐ 4. Proton

Q.27 Addition of 22 kg 589 g and 19 kg 678 g results in:

- Ans
- ☐ 1. 42 kg 367 g
 - ☐ 2. 41 kg 367 g
 - ☒ 3. 42 kg 267 g
 - ☐ 4. 41 kg 267 g

Q.28 Evaluate the given expression.

$$3 - (5 - 6 \div 3)$$

- Ans
- ☐ 1. 3
 - ☐ 2. 2
 - ☐ 3. 1
 - ☒ 4. 0

Q.29 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is Q related to S if 'Q x R - S + T ÷ U'?

- Ans
- ☐ 1. Sister
 - ☐ 2. Mother
 - ☒ 3. Husband's mother
 - ☐ 4. Daughter

Q.30 How long will it take for ₹1,500 to become ₹2,040 at 6% per annum simple interest?

- Ans**
- ✓ 1. 6 years
 - ✗ 2. $4\frac{1}{2}$ years
 - ✗ 3. 4 years
 - ✗ 4. $5\frac{3}{4}$ years

Q.31 Plaster of Paris is prepared when:

- Ans**
- ✗ 1. soda lime is heated at 373 K and it loses water molecules
 - ✓ 2. gypsum is heated at 373 K and it loses water molecules
 - ✗ 3. ammonia is heated at 373 K and it loses water molecules
 - ✗ 4. brine is heated at 373 K and it loses water molecules

Q.32 After fertilisation, which of the following is formed when the zygote divides several times within the ovule?

- Ans**
- ✗ 1. Stamen
 - ✗ 2. Pollen grain
 - ✓ 3. Embryo
 - ✗ 4. Pistil

Q.33 What is the unit of electro motive force (EMF)?

- Ans**
- ✓ 1. Volt
 - ✗ 2. Newton
 - ✗ 3. Ampere
 - ✗ 4. Sec

Q.34 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(18, 6, 24)

(27, 9, 36)

- Ans**
- ✓ 1. (33, 11, 44)
 - ✗ 2. (33, 10, 44)
 - ✗ 3. (33, 11, 42)
 - ✗ 4. (31, 11, 44)

Q.35 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ✓ 1. NQ-LP
 - ✗ 2. FI-DG
 - ✗ 3. DG-BE
 - ✗ 4. IL-GJ

Q.36 In chemical industries, bleaching powder is used as:

- Ans**
- ☐ 1. a fire extinguisher
 - ☐ 2. a dehydrating agent
 - ☒ 3. an oxidising agent
 - ☐ 4. a reducing agent

Q.37 A student has to secure 40% marks to pass. He gets 178 marks and fails by 22 marks. The maximum marks is:

- Ans**
- ☐ 1. 800
 - ☒ 2. 500
 - ☐ 3. 200
 - ☐ 4. 1000

Q.38 If $4 \times 4^{(n+5)} = 256$, then the value of $5^{(n+4)}$ is:

- Ans**
- ☐ 1. 125
 - ☒ 2. 25
 - ☐ 3. 5
 - ☐ 4. 1

Q.39 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \cot \theta \sin \theta - \cos \theta$ is _____. (θ lies in first quadrant)

- Ans**
- ☐ 1. $\sec^2 \theta$
 - ☒ 2. 0
 - ☐ 3. $4\sin\theta\cos\theta$
 - ☐ 4. -1

Q.40 A trader marks his goods 25% above the cost price and allows a discount of 10% on them. His gain percentage is:

- Ans**
- ☒ 1. 12.5%
 - ☐ 2. 10%
 - ☐ 3. 15%
 - ☐ 4. 20%

Q.41 Find the simple interest on ₹700 at 9% per month in 7 months.

- Ans**
- ☐ 1. ₹444
 - ☐ 2. ₹461
 - ☒ 3. ₹441
 - ☐ 4. ₹464

Q.42 Which of the following is a reflex action?

- Ans**
- ☐ 1. Walking on the street
 - ☒ 2. Pulling hand from the flame
 - ☐ 3. Talking to a child
 - ☐ 4. Dancing on the stage

Q.43 Study the following table and answer the question.

The table depicts the number of oranges sold by shops A and B to males and females on Monday

Shops	Number of oranges sold to males	Number of oranges sold to females
A	21	26
B	39	37

What is the difference between the number of oranges sold by shops A and B to males?

- Ans**
- ☒ 1. 2
 - ☒ 2. 18
 - ☒ 3. 11
 - ☒ 4. 15

Q.44 MILH is related to KGJF in a certain way based on the English alphabetical order. In the same way, QMPL is related to OKNJ. To which of the following options is TPSO related, following the same logic?

- Ans**
- ☒ 1. RNMQ
 - ☒ 2. RNQM
 - ☒ 3. NRMQ
 - ☒ 4. NRQM

Q.45 Which of the following phenomena is used to liquefy gas?


- Ans**
- ☒ 1. Applying temperature and reducing pressure
 - ☒ 2. Applying pressure and reducing temperature
 - ☒ 3. Reducing pressure and reducing temperature
 - ☒ 4. Applying pressure and increasing temperature


Q.46 Which of the following is/are related to the practical applications of electricity in daily life?


- (A) Electric oven.
- (B) Electric laundry iron.
- (C) Solar water heater


- Ans**
- ☒ 1. (A), (B) and (C)
 - ☒ 2. Only (A) and (B)
 - ☒ 3. Only (B) and (C)
 - ☒ 4. Only (A) and (C)

Q.47 When Planaria is cut into many pieces each piece grows into a complete organism. What is this known as?


Ans  1. Multiple fission


 2. Fragmentation


 3. Regeneration


 4. Binary fission

Q.48 As per the 10th consecutive Monetary Policy Committee (MPC) meeting, what is the repo rate at which the Reserve Bank of India lends to banks as on 30th October 2024?


Ans  1. 7.5%


 2. 7.0%


 3. 6.0%


 4. 6.5%

Q.49 The SI unit of force is:


Ans  1. rad/s


 2. Dyne


 3. Newton


 4. m/s

Q.50 Three pipes A, B and C are opened to fill a tank such that B and C can fill the tank alone for 18 hours and 12 hours, respectively, while pipe A can empty a fully filled tank in 15 hours. All the three pipes are opened together, and after 5 hours pipe A is closed. In how many hours will the remaining tank be filled?


Ans  1. 1 hour 15 minutes


 2. 1 hour 45 minutes


 3. 4 hours 36 minutes


 4. 2 hours 50 minutes

Q.51 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?
CFI, KNQ, SVY, ADG, ?


Ans  1. IKM


 2. ILO


 3. JLN


 4. JMP

Q.52 Which of the following Indian Navy personnel received the Shaurya Chakra 2024?


Ans  1. Lt. Cdr. Anil Kumar


 2. Commodore Ajay Mehta


 3. Vice Admiral KK Singh


 4. Capt. Sharad Sinsunwal

Q.53 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. Only 1 person sits between V and T when counted from the right of V. Q and R are both immediate neighbours of U. S is not an immediate neighbour of T. Only 1 person sits between P and R when counted from the left of R. Who sits third to the left of U?

Ans  1. T





 2. P

 3. S

 4. V

Q.54 Which of the following is/are correct with regard to the technique of plants to get rid of waste material?

- A. Plants get rid of excess water by transpiration.
- B. Waste products may be stored in leaves that fall off.
- C. Waste products are stored as resins and gums, especially in old xylem.

Ans  1. Both B and C
 2. Both A and B
 3. Both A and C
 4. A, B and C





Q.55 If 7, 11, 21 and k are in proportion, the value of k is:

Ans  1. 45
 2. 42
 3. 33
 4. 28

Q.56 During a chemical reaction, 10 grams of substance A reacts with 15 grams of substance B to produce a new compound. According to the law of conservation of mass, what will be the total mass of the products?

Ans  1. 25 g
 2. 10 g
 3. 11 g
 4. 16 g

Q.57 Which of the following is true about nuclear membranes and other cell organelles in cells?

Ans  1. All cytoplasmic organelles are present in prokaryotic cells.
 2. The nuclear membrane is absent in prokaryotic cells.
 3. The nuclear membrane is absent in eukaryotic cells.
 4. The nuclear membrane is present in prokaryotic cells.

Q.58 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans  1. GDAX
 2. KHEB
 3. AXUR
 4. OKJH

Q.59 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HKN, ILO, JMP, KNQ, ?

Ans  1. LOR
 2. LRO
 3. ORL
 4. OLR

Q.60 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$4\ C\ 8\ D\ 9\ A\ 3\ B\ 2 = ?$$

- Ans**
- ☐ 1. 5
 - ☒ 2. 6
 - ☐ 3. 8
 - ☐ 4. 3

Q.61 In an election between two candidates, one candidate got 40% of total votes and yet lost by 1000 votes. If all the votes polled were valid, then the total number of votes cast in the election was:

- Ans**
- ☐ 1. 6000
 - ☒ 2. 5000
 - ☐ 3. 10,000
 - ☐ 4. 8000

Q.62 Who among the following received the 2024 Padma Bhushan award for Literature and Education-Journalism?

- Ans**
- ☐ 1. Ram Naik
 - ☐ 2. Ashwin B Mehta
 - ☒ 3. Hormusji N Cama
 - ☐ 4. Pyarelal Sharma

Q.63 How does resistance depend on the cross-sectional area A of a conductor?

- Ans**
- ☐ 1. Does not depend on A
 - ☐ 2. Proportional to A
 - ☐ 3. Proportional to A^2
 - ☒ 4. Inversely proportional to A

Q.64 How many spherical solid marbles, each having a radius of 0.2 cm, can be made from a solid sphere having a radius of 6 cm?

- Ans**
- ☒ 1. 27000
 - ☐ 2. 18000
 - ☐ 3. 21000
 - ☐ 4. 9000

Q.65 Visitors to a show were charged ₹15 each on the first day, ₹7.50 on the second day, and ₹2.50 on the third day, and total attendance on the three days was in ratio 2 : 5 : 13, respectively. The average charge per person for the whole show is:

- Ans**
- ☒ 1. ₹5
 - ☐ 2. ₹4
 - ☐ 3. ₹6
 - ☐ 4. ₹3

Q.66 Which of the following has the highest basicity?

- Ans**
- ☒ 1. Sodium hydroxide
 - ☐ 2. Saliva
 - ☐ 3. Tap water
 - ☐ 4. Blood

Q.67 Which modes of reproduction is used by unicellular organisms?

- Ans**
- ☐ 1. Budding, regeneration and fission
 - ☐ 2. Only regeneration
 - ☐ 3. Only budding
 - ☒ 4. Only fission

Q.68 Which of the following pairs is INCORRECTLY matched according to mode of reproduction?

- Ans**
- ☒ 1. Bryophyllum – Spore formation
 - ☐ 2. Amoeba – Binary fission
 - ☐ 3. Spirogyra – Fragmentation
 - ☐ 4. Hydra – Budding

Q.69 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only three boxes are kept above X. Only one box is kept between Z and X. Only three boxes are kept between Z and A. A is kept at some place above X. C is kept immediately below A. L is kept at one of the places above Y. B is not kept immediately above or below Z.

Which box is kept at the lowermost position?

- Ans**
- ☒ 1. Y
 - ☐ 2. Z
 - ☐ 3. C
 - ☐ 4. B

Q.70 Which single-celled organism divides into many daughter cells simultaneously by multiple fission?

- Ans**
- ☐ 1. Amoeba
 - ☐ 2. Yeast
 - ☒ 3. Plasmodium
 - ☐ 4. Leishmania

Q.71 Who among the following received the Major Dhyan Chand Khel Ratna Award 2023 from the Indian President in January 2024?

- Ans**
- ☐ 1. Shri Mohammed Shami
 - ☐ 2. Ms. Aditi Gopichand Swami
 - ☐ 3. Shri Ojas Pravin Deotale
 - ☒ 4. Shri Chirag Chandrashekhar Shetty

Q.72 If $3.2 : x :: x : 16.2$, and $x > 0$, then find the value of x.

- Ans**
- ☐ 1. 5.4
 - ☒ 2. 7.2
 - ☐ 3. 9.7
 - ☐ 4. 6.3

Q.73 Which of the following sentences is correct if an object is in uniform motion?

- Ans**
- ✓ 1. The object moves with a constant speed.
 - ✗ 2. The object moves with varying speeds.
 - ✗ 3. The object does not travel equal distances with respect to equal time intervals.
 - ✗ 4. The object travels with different acceleration.

Q.74 $75 \times 75 + 2 \times 75 \times 25 + 25 \times 25$ is equal to:

- Ans**
- ✗ 1. 6250
 - ✗ 2. 7500
 - ✗ 3. 3750
 - ✓ 4. 10000

Q.75 An object floats on a liquid if the density of the object is:

- Ans**
- ✗ 1. greater than the density of the liquid
 - ✓ 2. less than the density of the liquid
 - ✗ 3. exactly twice the density of the liquid
 - ✗ 4. equal to the density of the liquid

Q.76 The Public Examinations (Prevention of Unfair Means) Bill, 2024, proposes a minimum fine of _____ for those involved in organised crimes of cheating.

- Ans**
- ✗ 1. ₹50 Lakh
 - ✗ 2. ₹20 Lakh
 - ✓ 3. ₹1 Crore
 - ✗ 4. ₹10 Lakh

Q.77 What kind of energy is possessed by a moving bullet?

- Ans**
- ✗ 1. Potential energy
 - ✓ 2. Kinetic energy
 - ✗ 3. Electrical energy
 - ✗ 4. Light energy

Q.78 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 36 :: 15 : Y

- Ans**
- ✗ 1. X = 9, Y = 42
 - ✓ 2. X = 9, Y = 60
 - ✗ 3. X = 12, Y = 50
 - ✗ 4. X = 12, Y = 60

Q.79 From the four possibilities, suspension has which property?

- Ans**
- ☐ 1. Solid mixture
 - ☒ 2. Heterogeneous mixture
 - ☐ 3. Plasma mixture
 - ☐ 4. Homogenous mixture

Q.80 Shakti starts from Point A and drives 22 km towards South. He then takes a left turn, drives 20 km, turns left and drives 12 km. He then takes a left turn and drives 17 km. He takes a final right turn, drives 10 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 3 km towards South
 - ☐ 2. 4 km towards North
 - ☒ 3. 3 km towards West
 - ☐ 4. 2 km towards East

Q.81 What happens to the process of diffusion on heating?

- Ans**
- ☐ 1. Diffusion depends on volume of matter.
 - ☐ 2. On heating, diffusion becomes slower.
 - ☐ 3. There is no effect of heating on diffusion.
 - ☒ 4. On heating, diffusion becomes faster.

Q.82 Which of the following is/are termed as nucleons?

- Ans**
- ☐ 1. Only protons
 - ☐ 2. Only electrons
 - ☒ 3. Both protons and neutrons
 - ☐ 4. Only neutrons

Q.83 In 1987, the UNEP succeeded in forging an agreement to freeze Chlorofluorocarbons production at 1986 levels. What is the full form of UNEP?

- Ans**
- ☐ 1. United Nations Ecological Programme
 - ☐ 2. United Nations Environment Policy
 - ☒ 3. United Nations Environment Programme
 - ☐ 4. United Nations Ecological Policy

Q.84 If a person covers 60 km at a speed of 40 km/h and another distance of 120 km at a speed of 80 km/h, then his average speed for the whole journey is:

- Ans**
- ☐ 1. 48 km/h
 - ☐ 2. 50 km/h
 - ☒ 3. 60 km/h
 - ☐ 4. 55 km/h

Q.85 Which phenomenon is responsible for the twinkling of a star?

- Ans
- ☐ 1. Reflection
 - ☐ 2. Scattering
 - ☐ 3. Total internal reflection
 - ☒ 4. Atmospheric refraction

Q.86 In which of the following organisms is spore formation seen?

- Ans
- ☐ 1. Paramecium
 - ☐ 2. Amoeba
 - ☒ 3. Rhizopus
 - ☐ 4. Plasmodium

Q.87 The average of ten numbers is 7. If 21 is added to each number, then the average of the new set of numbers will be:

- Ans
- ☐ 1. 19
 - ☐ 2. 31
 - ☒ 3. 28
 - ☐ 4. 7

Q.88 In September 2024, Prime Minister Modi launched how many Param Rudra Super Computing Systems and a High Performance Computing (HPC) system for weather and climate research?

- Ans
- ☐ 1. 2
 - ☒ 2. 3
 - ☐ 3. 7
 - ☐ 4. 5

Q.89 A single cell may constitute a whole organism in all of the following, EXCEPT:

- Ans
- ☐ 1. Chlamydomonas
 - ☐ 2. amoeba
 - ☒ 3. Rhizopus
 - ☐ 4. bacteria

Q.90 Which of the following are parts of the peripheral nervous system?

- Ans
- ☐ 1. Only cranial nerves
 - ☒ 2. Both cranial and spinal nerves
 - ☐ 3. Neither cranial nor spinal nerves
 - ☐ 4. Only spinal nerves

Q.91 How many pairs of sex chromosomes are present in humans?

- Ans
- ☐ 1. Forty six pairs
 - ☐ 2. Two pairs
 - ☐ 3. Twenty two pairs
 - ☒ 4. One pair

Q.92 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 3 4 8 5 6 9 2 2 1 6 6 9 3 2 4 8 9 1 6 8 3 2 2 3 8 3 2 1 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 2
 - ☐ 2. 3
 - ☐ 3. 1
 - ☐ 4. 0

Q.93 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only L sits between A and P. P sits third to the left of E. G sits to the immediate left of E. B is not an immediate neighbour of P. Who sits fourth to the left of M?

- Ans**
- ☒ 1. B
 - ☐ 2. E
 - ☐ 3. L
 - ☐ 4. A

Q.94 In November 2024, India sent a formal Letter of Intent to the International Olympic Committee to host the Olympics and Paralympics in which of the following years?

- Ans**
- ☐ 1. 2034
 - ☐ 2. 2033
 - ☐ 3. 2035
 - ☒ 4. 2036

Q.95 The mass number of sulphur atom is:

- Ans**
- ☒ 1. 32
 - ☐ 2. 31
 - ☐ 3. 35.5
 - ☐ 4. 37

Q.96 The perimeter of a rhombus is 100 cm and one of the diagonals is 40 cm. Then the area of the rhombus is

- Ans**
- ☐ 1. 1200 cm^2
 - ☒ 2. 600 cm^2
 - ☐ 3. 1000 cm^2
 - ☐ 4. 500 cm^2

Q.97 SOTQ is related to PLQN in a certain way based on the English alphabetical order. In the same way, OKPM is related to LHMJ. To which of the following options is LHMJ related, following the same logic?

- Ans**
- ☐ 1. EIJG
 - ☒ 2. IEJG
 - ☐ 3. IEGJ
 - ☐ 4. EIGJ

Q.98 Charge on how many electrons is equivalent to 1 coulomb of electric charge?

- Ans**
- ☐ 1. 1.6×10^{19}
 - ☒ 2. 6×10^{18}
 - ☐ 3. 4.2×10^{16}
 - ☐ 4. 9.1×10^{31}

Q.99 The lengths of the diagonals of a rhombus are 10 cm and 24 cm. The length of the side of the rhombus is:

- Ans**
- ☒ 1. 13 cm
 - ☐ 2. 10 cm
 - ☐ 3. 9 cm
 - ☐ 4. 8 cm

Q.100 Transparency International's Corruption Perceptions Index ranked India _____ out of 180 countries, indicating a persistent struggle with public sector corruption.

- Ans**
- ☐ 1. 73rd
 - ☒ 2. 93rd
 - ☐ 3. 83rd
 - ☐ 4. 103rd

2024/12/27-11:32:33



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	26/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 A pea plant climbs on other plants or fences with the help of:

- Ans
- ☒ 1. sepals
 - ☒ 2. prickles
 - ☒ 3. tendrils
 - ☒ 4. roots

Q.2 A pair of parallel lines is intersected by a transversal such that $\angle 1$ and $\angle 2$ form a pair of interior angles on the same side of the transversal. If $m\angle 1 = 125^\circ$, what is the measure of $\angle 2$?

- Ans
- ☒ 1. 45°
 - ☒ 2. 55°
 - ☒ 3. 145°
 - ☒ 4. 115°

Q.3 If the selling price of an almirah is doubled, then the profit is tripled. Find the initial profit percentage.

- Ans
- ☒ 1. 25%
 - ☒ 2. 50%
 - ☒ 3. 10%
 - ☒ 4. 100%

Q.4 Pranit starts from Point A and drives 27 km towards West. He then takes a left turn, drives 17 km, turns left and drives 14 km. He then takes a left turn and drives 10 km. He takes a final right turn, drives 13 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans
- ☒ 1. 7 km towards South
 - ☒ 2. 7 km towards North
 - ☒ 3. 5 km towards North
 - ☒ 4. 5 km towards South

Q.5 A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is:

- Ans**
- ☐ 1. 30 hours
 - ☐ 2. 6 hours
 - ☒ 3. 15 hours
 - ☐ 4. 10 hours

Q.6 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some lakes are rivers.

Some rivers are ponds.

Conclusions:

(I) Some lakes are ponds.

(II) Some ponds are not rivers.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☒ 2. Neither conclusion I nor II follows
 - ☐ 3. Only conclusion II follows
 - ☐ 4. Only conclusion I follows

Q.7 Which of the following observable changes indicate that a chemical reaction has occurred?

- (a) Formation of gas
- (b) Formation of precipitates
- (c) Change in physical state
- (d) Colour change

- Ans**
- ☒ 1. All (a), (b), (c) and (d)
 - ☐ 2. Only (a) and (b)
 - ☐ 3. Only (a), (b) and (c)
 - ☐ 4. Only (c) and (d)

Q.8 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

The literacy rate in Country X is significantly lower than the global average due to a lack of access to quality education, especially in rural areas.

Courses of Action:

I. Construct more schools and educational facilities in rural areas of Country X to improve accessibility.

II. Develop a digital education platform to provide online learning resources to students in both urban and rural areas of the country.

- Ans**
- ☐ 1. Neither I nor II follows.
 - ☒ 2. Both I and II follow.
 - ☐ 3. Only I follows.
 - ☐ 4. Only II follows.

Q.9 Which hormone regulates carbohydrate, protein and fat metabolism in the body and iodine is essential for the synthesis of it?

- Ans**
- ☐ 1. Adrenaline hormone
 - ☐ 2. Testosterone hormone
 - ☐ 3. Insulin hormone
 - ☒ 4. Thyroxin hormone

Q.10 Which of the following correctly describes the sum of kinetic energy and potential energy of an object?

- Ans**
- ☒ 1. Total mechanical energy
 - ☐ 2. Total thermal energy
 - ☐ 3. Total chemical energy
 - ☐ 4. Total electrical energy

Q.11 Which of the following is NOT a phase transition between the states of matter?

- Ans**
- ☐ 1. Sublimation
 - ☒ 2. Emission
 - ☐ 3. Vaporization
 - ☐ 4. Condensation

Q.12 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tomatoes are apples.

All apples are mushrooms.

Conclusions:

(I) Some mushrooms are tomatoes

(II) All apples are tomatoes

- Ans**
- ☐ 1. Only conclusion (II) follows
 - ☐ 2. Both conclusions (I) and (II) follow
 - ☒ 3. Only conclusion (I) follows
 - ☐ 4. Neither conclusion (I) nor (II) follows

Q.13 The magnetic field lines inside a current carrying solenoid are in the form of:

- Ans**
- ☐ 1. perpendicular straight lines
 - ☐ 2. concentric circles
 - ☒ 3. parallel straight lines
 - ☐ 4. curved lines

Q.14 Which of the following changes take place in plants by environmental triggers such as light, or gravity?

- Ans**
- ☐ 1. Change in the size of ovary and anther of the flower they produce
 - ☒ 2. Change in the directions that plant parts grow in
 - ☐ 3. Change in the shape of the leaves and fruits they provide
 - ☐ 4. Change in the branching pattern of their roots

Q.15 In July 2024, which organisation published the SDG India Index 2023-24 report?

- Ans**
- ☒ 1. NITI Aayog
 - ☐ 2. Tropical Forest Research Institute
 - ☐ 3. Greenpeace India
 - ☐ 4. The Energy and Resources Institute

Q.16 If 400 J of heat is produced each second in a $4\ \Omega$ resistance, then the current flowing across the resistor is:

- Ans**
- ☐ 1. 40 A
 - ☐ 2. 20 A
 - ☐ 3. 30 A
 - ☒ 4. 10 A

Q.17 If $\tan \theta + \cot \theta = 21$, then find the value of $6\tan^2 \theta + 6\cot^2 \theta$.

- Ans**
- ☐ 1. 2636
 - ☐ 2. 439
 - ☒ 3. 2634
 - ☐ 4. 441

Q.18 As the temperature increases, the kinetic energy of particles of matter _____.

- Ans**
- ☐ 1. remains the same
 - ☐ 2. becomes zero
 - ☐ 3. decreases
 - ☒ 4. increases

Q.19 An HR Company employs 4800 people, out of which 45% are males and 60% of the males are either 25 years of age or older. How many males employed in that HR Company are less than 25 years of age?

- Ans**
- ☒ 1. 864
 - ☐ 2. 1296
 - ☐ 3. 2640
 - ☐ 4. 2160

Q.20 In which of the following types of reaction is there an exchange of ions between the reactants?

- Ans**
- ☒ 1. Double displacement reaction
 - ☐ 2. Disproportion reaction
 - ☐ 3. Decomposition
 - ☐ 4. Addition reaction

Q.21 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(23, 47, 85)

(11, 20, 46)

- Ans**
- ☒ 1. (9, 16, 42)
 - ☒ 2. (17, 6, 38)
 - ☒ 3. (8, 7, 35)
 - ☒ 4. (21, 15, 50)

Q.22 For a given colour and given pair of media, and light is going from rarer to denser media, the ratio of sine of the angle of incidence to the sine of angle of refraction is:

- Ans**
- ☒ 1. always zero
 - ☒ 2. a constant greater than 1
 - ☒ 3. a constant less than 1
 - ☒ 4. always 1

Q.23 Sporangia blobs contain cells or spores that can eventually develop into new Rhizopus individuals. Such asexual reproduction is known as:

- Ans**
- ☒ 1. budding
 - ☒ 2. vegetative propagation
 - ☒ 3. spore formation
 - ☒ 4. regeneration

Q.24 The sum of two positive numbers is 45 and their difference is 19. What are the numbers?

- Ans**
- ☒ 1. 25, 20
 - ☒ 2. 32, 13
 - ☒ 3. 31, 15
 - ☒ 4. 30, 15

Q.25 The Waqf (Amendment) Bill, 2024, introduced in the Indian Lok Sabha on 8 August 2024, aims to repeal which of the following Acts?

- Ans**
- ☒ 1. Mussalman Wakf Act, 1924
 - ☒ 2. Mussalman Wakf Act, 1923
 - ☒ 3. Mussalman Wakf Act, 1926
 - ☒ 4. Mussalman Wakf Act, 1925

Q.26 Study the given table and answer the question that follows.

The table depicts the number of cars sold by Dealer A and Dealer B in the years 2021 and 2022.

Dealers	Number of cars sold in	Number of cars sold in
	2021	2022
A	45	65
B	35	75

What is the absolute difference between the number of cars sold by Dealer A in 2021 and Dealer B in 2022?

- Ans**
- ☐ 1. 35
 - ☐ 2. 40
 - ☒ 3. 30
 - ☐ 4. 20

Q.27 The rate of diffusion of liquids is higher than that of solids because:

- Ans**
- ☐ 1. in the liquid state, particles do not move freely, but have greater space between each other
 - ☒ 2. in the liquid state, particles move freely and have greater space between each other
 - ☐ 3. in the liquid state, particles only move freely and do not have greater space between each other
 - ☐ 4. in the liquid state, particles do not move freely and do not have greater space between each other

Q.28 In August 2024, which state became the first in India to provide a Unified Pension Scheme to its employees?

- Ans**
- ☐ 1. Odisha
 - ☐ 2. Uttar Pradesh
 - ☒ 3. Maharashtra
 - ☐ 4. Himachal Pradesh

Q.29 Which of the following molecules is diatomic in nature?

- Ans**
- ☐ 1. Argon
 - ☒ 2. Oxygen
 - ☐ 3. Phosphorus
 - ☐ 4. Helium

Q.30 A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find A's share.

- Ans**
- ☐ 1. ₹160
 - ☒ 2. ₹480
 - ☐ 3. ₹240
 - ☐ 4. ₹360

Q.31 Gitika borrowed a sum of ₹20,000 at a certain rate of simple interest for 2 years. If she paid an interest of ₹4,000 at the end of the period, then find the rate of interest per annum.

- Ans**
- ☒ 1. 10%
 - ☐ 2. 20%
 - ☐ 3. 15%
 - ☐ 4. 25%

Q.32 If 63 chocolates are to be divided between A and B in the ratio 4 : 5, then how many chocolates will B get?

- Ans**
- ☐ 1. 28
 - ☐ 2. 49
 - ☒ 3. 35
 - ☐ 4. 27

Q.33 The acceleration due to gravity on an object of mass m placed near the surface of the earth is:

- Ans**
- ☒ 1. independent of m
 - ☐ 2. linearly proportional to m
 - ☐ 3. linearly proportional to m^2
 - ☐ 4. inversely proportional to m

Q.34 Select the correct pairs from the following options.

- Ans**
- ☐ 1. (a) Resistance - volt/ampere
(b) Resistivity - ohm
 - ☐ 2. (a) Resistance - ampere metre
(b) Resistivity - volt/metre
 - ☐ 3. (a) Resistance - ohm
(b) Resistivity - volt/metre
 - ☒ 4. (a) Resistance - ohm
(b) Resistivity - ohm metre

Q.35 During meiosis, a cell divides to create _____ new cells.

- Ans**
- ☒ 1. Four
 - ☐ 2. Twenty-four
 - ☐ 3. Sixteen
 - ☐ 4. Eight

Q.36 The 25th edition of the Hornbill Festival was held in which state?

- Ans**
- ☐ 1. Manipur
 - ☐ 2. Assam
 - ☐ 3. Meghalaya
 - ☒ 4. Nagaland

Q.37 During the decomposition reaction of lead nitrate, the observed brown colour fumes are of which gas?

- Ans**
- ☐ 1. Hydrogen gas
 - ☐ 2. Nitrogen gas
 - ☒ 3. Nitrogen dioxide gas
 - ☐ 4. Ozone gas

Q.38 A woman is 4 times as old as her daughter. After 6 years, the woman's age will be three times that of her daughter. The sum of their present ages is:

- Ans**
- ☒ 1. 60 years
 - ☐ 2. 90 years
 - ☐ 3. 80 years
 - ☐ 4. 70 years

Q.39 Simplify the given expression.

$$(6 + 4) \div 2 - 2 + 6 \times 4$$

- Ans**
- ☒ 1. 27
 - ☐ 2. 44
 - ☐ 3. 21
 - ☐ 4. 36

Q.40 In a certain code language, 'green leaves rustling' is coded as 'sa ka ta', and 'leaves are fresh' is coded as 'ka da na'. What is the code for 'leaves' in the given code language?

- Ans**
- ☒ 1. ka
 - ☐ 2. na
 - ☐ 3. sa
 - ☐ 4. da

Q.41 Select the correct pair from the following options based on the refractive defects of vision.

- Ans**
- ☐ 1. (a) Presbyopia - near-sightedness
 - ☐ 2. (b) Myopia - far-sightedness
 - ☒ 3. (a) Myopia - near-sightedness
 - ☐ 4. (b) Hypermetropia - far-sightedness
 - ☐ 5. (a) Hypermetropia - near-sightedness
 - ☐ 6. (b) Presbyopia - far-sightedness
 - ☐ 7. (a) Presbyopia - near-sightedness
 - ☐ 8. (b) Hypermetropia - far-sightedness

Q.42 Which of the following is equal to the value of 1 Volt? (assume J-joule, C-coulomb, s-second)

- Ans**
- ☐ 1. 1 Cs
 - ☒ 2. 1 J/1C
 - ☐ 3. 1 Js
 - ☐ 4. 1 C/s

Q.43 The diameter of the reflecting surface of a spherical mirror is same as its:

- Ans**
- ☐ 1. focal length
 - ☐ 2. radius of curvature
 - ☐ 3. inverse of the power
 - ☒ 4. aperture

Q.44 If 'K' stands for '×', 'L' stands for '−', 'M' stands for '+' and 'N' stands for '+', what will come in place of the question mark '?' in the following equation?

$$9\ M\ 3\ K\ 13\ N\ 3\ L\ 23 = ?$$

- Ans**
- ☒ 1. 19
 - ☐ 2. 24
 - ☐ 3. 14
 - ☐ 4. 29

Q.45 Identify the correct match of plant hormones with their functions.

- Ans** Gibberellins : Promote cell division
- ☐ 1. Cytokinins : Help in the growth of the stem
Absciscic acid : Inhibits growth
Gibberellins : Help in the growth of the stem
 - ☐ 2. Cytokinins : Inhibits growth
Absciscic acid : Promote cell division
Gibberellins : Help in the growth of the stem
 - ☒ 3. Cytokinins : Promote cell division
Absciscic acid : Inhibits growth
Gibberellins : Inhibits growth
 - ☐ 4. Cytokinins : Promote cell division
Absciscic acid : Help in the growth of the stem

Q.46 Spirogyra a multi-cellular organism simply breaks up into smaller pieces upon maturation and these pieces or fragments grow into new individuals. Such a mode of reproduction is known as:

- Ans**
- ☐ 1. budding
 - ☐ 2. regeneration
 - ☐ 3. binary fission
 - ☒ 4. fragmentation

Q.47 Which metal pair starts to melt at room temperature?

- Ans**
- ☐ 1. Iron and nickel
 - ☐ 2. Zinc and copper
 - ☐ 3. Copper and cobalt
 - ☒ 4. Gallium and cesium

Q.48 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. OQ - NS
 - ☐ 2. GI - FJ
 - ☐ 3. TV - SW
 - ☐ 4. MO - LP

Q.49 What is the calculated molecular mass of oxygen?

- Ans**
- ☐ 1. 26
 - ☐ 2. 28
 - ☐ 3. 30
 - ☒ 4. 32

Q.50 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 9 8 9 7 2 3 9 8 7 2 1 5 5 8 7 9 3 5 3 1 4 6 4 4 9 7 4 7 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 1
 - ☒ 2. 2
 - ☐ 3. 3
 - ☐ 4. 4

Q.51 The average of ten numbers is 7. If each number is multiplied by 12, then the average of the new set of numbers will be:

- Ans**
- ☐ 1. 82
 - ☒ 2. 84
 - ☐ 3. 7
 - ☐ 4. 19

Q.52 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only three people sit between P and E when counted from the left of P. Only three people sit between M and A when counted from the right of A. L sits to the immediate right of M. G is an immediate neighbour of A as well as E. Who sits to the second to the left of B?

- Ans**
- ☐ 1. P
 - ☒ 2. G
 - ☐ 3. A
 - ☐ 4. L

Q.53 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

691, 635, 714, 658, 737, ?

- Ans**
- ☐ 1. 701
 - ☐ 2. 628
 - ☐ 3. 696
 - ☒ 4. 681

Q.54 Tap S alone fills a cistern in 2 hours; while tap T alone fills the same cistern in 3 hours. A new tap U is attached to the bottom of the cistern which can empty the completely filled cistern in 6 hours. Sunny started all three taps together at 9 a.m. When will the tank be full?

- Ans**
- ☒ 1. 10:30 a.m.
 - ☐ 2. 12 p.m.
 - ☐ 3. 11:15 a.m.
 - ☐ 4. 9:45 a.m.

Q.55 The Indian National Trust for Art and Cultural Heritage (INTACH) Research Programme for 2025 is divided into how many categories?

- Ans**
- ☒ 1. Three
 - ☐ 2. Five
 - ☐ 3. Two
 - ☐ 4. Four

Q.56 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GFC, KJE, ONG, SRI, ?

- Ans**
- ☐ 1. WXM
 - ☐ 2. WXL
 - ☒ 3. WVK
 - ☐ 4. XYK


Q.57 Identify the best method to prepare washing soda from sodium bicarbonate.


- Ans**
- ☐ 1. By adding sodium bicarbonate to vinegar
 - ☐ 2. By freezing sodium bicarbonate
 - ☒ 3. By heating sodium bicarbonate
 - ☐ 4. By mixing sodium bicarbonate with water


Q.58 If u, g, and h are the initial velocity, gravitational acceleration, and height, respectively, of an object falling under gravitational force, then its final velocity v can be obtained from:


- Ans**
- ☐ 1. $v^2/u^2 = 2gh$
 - ☐ 2. $v^2u^2 = 2gh$
 - ☐ 3. $v^2 + u^2 = 2gh$
 - ☒ 4. $v^2 - u^2 = 2gh$

Q.59 A shopkeeper provides successive discounts of 7% and 2%, which are equivalent to a single discount of ____.


Ans  1. 9%


 2. 9.14%


 3. 8%


 4. 8.86%

Q.60 Rodney has invested ₹15,000 at a rate of 8% p.a. for 1 year on compound interest, compounded half-yearly. The amount received by him will be:


Ans  1. ₹16,224


 2. ₹15,840


 3. ₹16,354


 4. ₹15,960

Q.61 If $\frac{3}{7} = \frac{x}{-35}$, then x is:


Ans  1. -5


 2. 5


 3. 15


 4. -15

Q.62 Name the mode of reproduction in Spirogyra.


Ans  1. Multiple fission


 2. Budding


 3. Binary fission


 4. Fragmentation

Q.63 If $a + \frac{1}{a} = 4$, then $a^2 + \frac{1}{a^2} = ?$


Ans  1. 16


 2. 12


 3. 18


 4. 14

Q.64 Which of the following would increase the resistance of a metallic conductor?

Ans  1. Using a material with higher conductivity.

 2. Decreasing its length.

 3. Decreasing the current flowing through the conductor.

 4. Decreasing its area of cross-section.

Q.65 Buds produced in the notches along the leaf margin of Bryophyllum fall on the soil and develop into new plants. Such a mode of reproduction is known as:

- Ans**
- ☐ 1. fragmentation
 - ☒ 2. vegetative propagation
 - ☐ 3. regeneration
 - ☐ 4. budding

Q.66 Seven people, A, B, D, L, X, Y and Z, are sitting in a row, facing north. No one sits to the left of B. Only four people sit between B and Y. Only three people sit to the right of Z. A sits to the immediate left of L. D is not an immediate neighbour of Z. Who sits at the rightmost end of the line?

- Ans**
- ☐ 1. X
 - ☒ 2. D
 - ☐ 3. L
 - ☐ 4. Y

Q.67 Which of the following statements is/are INCORRECT related to excretion in human being?

- (i) In human beings, kidney is located in the thoracic region.
- (ii) Urine is stored in the urinary bladder.
- (iii) CO₂ is removed from the blood into the lungs.

- Ans**
- ☐ 1. Only (i) and (ii)
 - ☒ 2. Only (i)
 - ☐ 3. Only (i) and (iii)
 - ☐ 4. (i), (ii) and (iii)

Q.68 What will come in the place of '?' in the following equation, if '×' and '−' are interchanged and '÷' and '+' are interchanged?

$$55 \times 45 + 5 - 8 \div 4 = ?$$

- Ans**
- ☐ 1. 77
 - ☐ 2. 17
 - ☒ 3. −13
 - ☐ 4. 47

Q.69 Which of the following energies reflect mechanical energy when combined?

- Ans**
- ☐ 1. Chemical energy and electrical energy
 - ☐ 2. Heat energy and light energy
 - ☒ 3. Potential energy and kinetic energy
 - ☐ 4. Light energy and chemical energy

Q.70 What is the sum of the first 10 prime numbers?

- Ans**
- ☐ 1. 131
 - ☒ 2. 129
 - ☐ 3. 111
 - ☐ 4. 101

Q.71 Which state was crowned the team champion at the 4th National Finswimming Championship, 2024?

- Ans**
- ☒ 1. West Bengal
 - ☐ 2. Maharashtra
 - ☐ 3. Karnataka
 - ☐ 4. Tamil Nadu

Q.72 The body of a squirrel has to prepare for either fighting or running away by using which of the following hormones?

- Ans**
- ☐ 1. Oestrogen
 - ☐ 2. Testosterone
 - ☒ 3. Adrenaline
 - ☐ 4. Thyroxin

Q.73 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 6 8 9 4 4 8 6 5 3 5 1 7 5 8 6 5 8 9 7 3 4 7 0 1 6 8 7 4 5 4 (Right)

How many such even digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an even digit?

- Ans**
- ☐ 1. 6
 - ☐ 2. 0
 - ☐ 3. 4
 - ☒ 4. 3

Q.74 The HCF of 1248 and 2456 is:

- Ans**
- ☒ 1. 8
 - ☐ 2. 16
 - ☐ 3. 12
 - ☐ 4. 14

Q.75 25% of 30% of 45% of 1 is equal to:

- Ans**
- ☐ 1. 0.3375
 - ☐ 2. 33.75
 - ☒ 3. 0.03375
 - ☐ 4. 3.375

Q.76 Simplify the given expression.

$$5 - [4 - \{3 - (3 - 3 - 6)\}]$$

- Ans**
- ☒ 1. 10
 - ☐ 2. 0
 - ☐ 3. 6
 - ☐ 4. 4

Q.77 Find the volume of a sphere whose diameter is 6 cm.

- Ans**
- ☐ 1. $42\pi \text{ cm}^3$
 - ☒ 2. $36\pi \text{ cm}^3$
 - ☐ 3. $28\pi \text{ cm}^3$
 - ☐ 4. $48\pi \text{ cm}^3$

Q.78 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 1 8 4 5 9 6 5 2 4 8 0 9 5 9 5 7 9 5 3 3 5 1 5 1 4 7 6 6 4 9 (Right)

How many such odd digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an even digit?

- Ans**
- ☒ 1. 2
 - ☐ 2. 0
 - ☐ 3. 3
 - ☐ 4. 4

Q.79 Six boxes G, H, I, J, K and L are kept one over the other but not necessarily in the same order. G is kept third from the bottom. Only two boxes are kept between G and H. Only three boxes are kept between H and I. J is kept immediately above G. K is kept immediately below I.

Q. How many boxes are kept between H and L?

- Ans**
- ☒ 1. Zero
 - ☐ 2. Two
 - ☐ 3. Three
 - ☐ 4. One

Q.80 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

RM-HL-OQ

NI-DH-KM

- Ans**
- ☐ 1. PK-FI-MN
 - ☒ 2. PK-FJ-MO
 - ☐ 3. QK-FI-MO
 - ☐ 4. QK-FJ-MN

Q.81 OTRP is related to UZXV in a certain way based on the English alphabetical order. In the same way, HMKI is related to NSQO. To which of the following options is MRPN related, following the same logic?

- Ans**
- ☐ 1. SXTV
 - ☐ 2. XSVT
 - ☒ 3. SXVT
 - ☐ 4. XSTV

Q.82 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. QWC
 - ☒ 2. GMS
 - ☒ 3. IOU
 - ☒ 4. SDF

Q.83 In August 2024, the Government of India established how many Zonal Cultural Centres (ZCCs) to promote cultural traditions and conduct research on folk arts and songs from rural and tribal areas?

- Ans**
- ☒ 1. Five
 - ☒ 2. Four
 - ☒ 3. Six
 - ☒ 4. Seven

Q.84 The growth of plants occurs only in certain specific regions because:

- Ans**
- ☒ 1. the simple permanent tissue is located only at these regions
 - ☒ 2. the dividing tissue, also known as meristematic tissue, is located only at these regions
 - ☒ 3. the connective tissue is located only at these regions
 - ☒ 4. the complex permanent tissue is located only at these regions

Q.85 First find the median of 46, 64, 87, 41, 58, 77, 35, 90, 55, 92, and 33. If 92 is replaced with 99 and 41 is replaced with 43 in the data, then find the new median. What is the difference between the old median and the new median?

- Ans**
- ☒ 1. 2
 - ☒ 2. 3
 - ☒ 3. 6
 - ☒ 4. 0

Q.86 In a certain code language,

'A + B' means 'A is the mother of B',

'A – B' means 'A is the son of B',

'A x B' means 'A is the husband of B'

and 'A ÷ B' means 'A is the brother of B'.

How is O related to Q if 'M + N ÷ O x P + Q'?


- Ans**
- ☒ 1. Father
 - ☒ 2. Son
 - ☒ 3. Father's brother
 - ☒ 4. Brother


Q.87 Select the set in which the numbers are related in the same way as are the numbers of the following sets.


(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)


(8, 4, 12)

(18, 9, 27)

Ans  1. (20, 12, 36)


 2. (24, 12, 34)


 3. (24, 12, 36)


 4. (24, 14, 36)

Q.88 Which of the following metal catches fire if kept in open?

Ans  1. Copper

 2. Zinc


 3. Sodium

 4. Magnesium

Q.89 In a certain code language, 'Come Back Home' is written as 'Tu Ru Qu' and 'She Went Back' is written as 'Du Su Ru' and 'He Went Home' is written as 'Pu Tu Du'. How is 'She' written in the given language?

Ans  1. Tu

 2. Su


 3. Du


 4. Ru

Q.90 A solid rubber sphere weighs 6 kg when its diameter is 6 cm. Using the same material, a hollow sphere is made with outer diameter 18 cm and inner diameter 12 cm. What is its weight?


Ans  1. 64.64 kg


 2. 72.64 kg


 3. 96 kg


 4. 114 kg

Q.91 In which of the following conditions is the work done considered negative?

Ans  1. When the displacement is zero.

 2. When the force is perpendicular to the direction of displacement.

 3. When the force is in the direction of displacement.

 4. When the force is opposite to the direction of displacement.

Q.92 On 3rd October 2024, the Union Cabinet decided to merge all Central schemes in the agriculture sector into how many new schemes?

Ans  1. Five

 2. Three

 3. Four

 4. Two

Q.93 National Rifle Association of India (NRAI) approved amendments to the NRAI Match Book and other technical rules for domestic competitions in _____.

- Ans**
- ☒ 1. August 2024
 - ☒ 2. March 2024
 - ☐ 3. February 2024
 - ☐ 4. April 2024

Q.94 Select the correct option related to the function of auxin in plants.

- Ans**
- ☐ 1. Increases stem width
 - ☐ 2. Induce flowering
 - ☐ 3. Make plants insect resistant
 - ☒ 4. Helps the cells to grow longer

Q.95 Compounds of carbon, which are linked by only single bonds between the carbon atoms are called _____.

- Ans**
- ☒ 1. Saturated compounds
 - ☐ 2. Ionic compounds
 - ☐ 3. Both ionic and saturated compounds
 - ☐ 4. Unsaturated compounds

Q.96 The GSAT-N2 (GSAT-20) is a Ka-band high throughput communication satellite launched by which organisation?

- Ans**
- ☐ 1. National Remote Sensing Centre (NRSC)
 - ☐ 2. Department of Space (DoS)
 - ☒ 3. NewSpace India Limited (NSIL)
 - ☐ 4. Antrix Corporation

Q.97 The central nervous system that receives information from all parts of the body and integrates it is constituted by:

- Ans**
- ☐ 1. only the brain
 - ☒ 2. the brain and the spinal cord
 - ☐ 3. only the heart
 - ☐ 4. only the spinal cord

Q.98 Which of the following is an isobar of argon?




- Ans**
- ☒ 1. Calcium
 - ☐ 2. Chlorine
 - ☐ 3. Sodium
 - ☐ 4. Potassium

Q.99 How much time will a train of length 200 m, moving at a speed of 72 km/h take to cross another train of length 300 m completely, moving at 36 km/h in the same direction?

- Ans**
- ☐ 1. 25 sec
 - ☐ 2. 100 sec
 - ☒ 3. 50 sec
 - ☐ 4. 55 sec

Q.100 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

IUF, LVJ, OWN, RXR, ?

- Ans**
-  1. USV
 -  2. VYU
 -  3. VYX
 -  4. UYV

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	26/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 What type of plant tissue is classified as apical, lateral and intercalary?

- Ans
- ☒ 1. Simple permanent tissue
 - ☒ 2. Connective tissue
 - ☒ 3. Meristematic tissue
 - ☒ 4. Complex permanent tissue

Q.2 Select the INCORRECT statement.

- Ans
- ☒ 1. Warts are a protozoan disease.
 - ☒ 2. AIDS is caused by the HIV virus.
 - ☒ 3. Gonorrhea is a bacterial disease.
 - ☒ 4. Many diseases can be sexually transmitted.

Q.3 A man sold an article for ₹405 by giving a discount of $d\%$ on its marked price. If the marked price of the article is ₹540, then what is the value of d ?

- Ans
- ☒ 1. 12.5
 - ☒ 2. 20
 - ☒ 3. 12
 - ☒ 4. 25

Q.4 Which of the following actions are regulated by the medulla in the hind brain?

- Ans
- ☒ 1. Maintaining balance and posture
 - ☒ 2. Walking
 - ☒ 3. Riding a bicycle
 - ☒ 4. Salivation

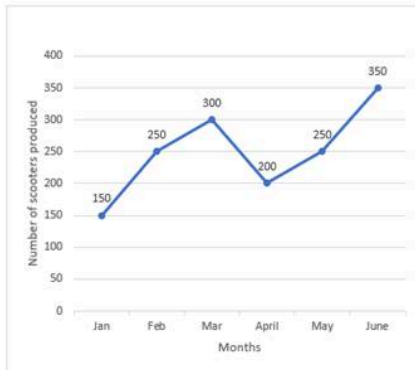
Q.5 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. QOL
 - ☒ 2. VTR
 - ☒ 3. MKH
 - ☒ 4. YWT

Q.6 Study the given graph and answer the question that follows.

The line graph shows the number of scooters produced in a factory during the first six months of a year.



What is the difference between the maximum and minimum production of scooters in a month?

- Ans**
- ☒ 1. 150
 - ☒ 2. 100
 - ☒ 3. 200
 - ☒ 4. 250

Q.7 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. NPK
 - ☒ 2. JLG
 - ☒ 3. HJF
 - ☒ 4. FHC

Q.8 Which of the following compounds is used in tincture iodine?

- Ans**
- ☒ 1. Ethanoic acid
 - ☒ 2. Ethanol
 - ☒ 3. Propanol
 - ☒ 4. Methanol

Q.9 The cost of 2 tables and 3 chairs is ₹540, while that of 2 tables and 1 chair is ₹470. What is the difference in the cost of 2 tables and 2 chairs?

- Ans**
- ☒ 1. ₹345
 - ☒ 2. ₹400
 - ☒ 3. ₹365
 - ☒ 4. ₹425

Q.10 If each vowel in the word FLOWING is changed to the letter immediately following it in the English alphabetical order and each consonant is changed to the letter immediately preceding it in the English alphabetical order, then how many vowels are there in the group of letters thus formed?

- Ans**
- ☐ 1. 2
 - ☐ 2. 0
 - ☐ 3. 3
 - ☒ 4. 1

Q.11 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) & 3 Ω 2 & % 4 6 @ 8 S 7 U 9 # 1 * £ 1 + & @ 5 (Right)

How many such symbols are there, each of which is immediately followed by a symbol and also immediately preceded by a symbol?

- Ans**
- ☒ 1. One
 - ☐ 2. More than two
 - ☐ 3. None
 - ☐ 4. Two

Q.12 Which of the following metals is LEAST reactive towards dilute hydrochloric acid?

- Ans**
- ☐ 1. Al
 - ☒ 2. Fe
 - ☐ 3. Zn
 - ☐ 4. Mg

Q.13 Which of the following factors do NOT affect the resistance of a conductor (at constant temperature):

- (i) Area of cross-section of the conductor
- (ii) Current flowing through the conductor
- (iii) Length of the conductor

- Ans**
- ☐ 1. Only (iii)
 - ☐ 2. Both (i) and (ii)
 - ☐ 3. Both (i) and (iii)
 - ☒ 4. Only (ii)

Q.14 If the price of tea is increased by 20%, then by what percentage must a householder reduce her consumption of tea so as to leave her expenditure on tea unchanged?

- Ans**
- ☐ 1. 20%
 - ☐ 2. 25%
 - ☐ 3. $33\frac{1}{3}\%$
 - ☒ 4. $16\frac{2}{3}\%$

Q.15 In a certain code language, 'EVIL' is coded as '6824' and 'BONE' is coded as '8753'.

What is the code for 'E' in the given code language?

- Ans**
- ☒ 1. 8
 - ☐ 2. 6
 - ☐ 3. 3
 - ☐ 4. 7

Q.16 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
(4, 12, 24)
(7, 21, 42)

- Ans**
- ☒ 1. (9, 36, 54)
 - ☒ 2. (9, 27, 54)
 - ☒ 3. (9, 27, 52)
 - ☒ 4. (7, 27, 54)

Q.17 Which of the following statements related to the law of conservation of energy is true?

- Ans**
- ☒ 1. Energy can be created or destroyed.
 - ☒ 2. The total energy before and after a transformation process are different.
 - ☒ 3. Energy cannot be converted from one form to another.
 - ☒ 4.

The law of conservation of energy is valid in all situations and for all kinds of transformations.

Q.18 Select the correct option related to the function of villi in the small intestine.

- Ans**
- ☒ 1. Helps in excretion
 - ☒ 2. Increases absorptive surface area
 - ☒ 3. Secretion of minerals
 - ☒ 4. Protection from acid

Q.19 Which of the following ion concentrations is measured by the pH scale?

- Ans**
- ☒ 1. H^+ ion concentration
 - ☒ 2. F^- ion concentration
 - ☒ 3. Cl^- ion concentration
 - ☒ 4. Na^+ ion concentration

Q.20 A bus accelerates uniformly from 12 m s^{-1} to 30 m s^{-1} in 30 s. Calculate the distance covered by the bus in that time.

- Ans**
- ☒ 1. 1900 m
 - ☒ 2. 400 m
 - ☒ 3. 630 m
 - ☒ 4. 175 m

Q.21 If a 4-digit number 5k21 is divisible by 9, then the value of digit 'k' is:

- Ans**
- ☒ 1. 9
 - ☒ 2. 1
 - ☒ 3. 3
 - ☒ 4. 0

Q.22 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tables are knives.


All knives are paper.


Some papers are blue.


Conclusions:


(I) Some blues are tables.

(II) Some papers are tables.

Ans  1. Neither conclusion (I) nor (II) follows.


 2. Only conclusion (I) follows.


 3. Only conclusion (II) follows.


 4. Both conclusions (I) and (II) follow.

Q.23 The LCM of the numbers 2.5 and 0.175 is:

Ans  1. 1.75

 2. 0.0175

 3. 17.5

 4. 175

Q.24 What will come in the place of '?' in the following equation, if '+' and '+' are interchanged and '×' and '-' are interchanged?

$$63 + 9 \times 6 + 13 - 4 = ?$$

Ans  1. 51

 2. 53


 3. 55


 4. 48

Q.25 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.


WEST - EWST - TSEW

POLE - OPLE - ELOP

Ans  1. VIEW - IVEW - WEIV


 2. FANG - AFNG - ANGf


 3. GROW - GORW - WORG


 4. ROAD - ORAD - DOAR

Q.26 The compound interest on ₹2,500 after 2 years, at a rate of 6% per annum, compounded annually, will be:

Ans  1. ₹318

 2. ₹309

 3. ₹320

 4. ₹322

Q.27 The total surface area of a solid hemisphere is 166.32 sq cm, find its curved surface area?

- Ans**
- ☐ 1. 55.44 sq cm
 - ☒ 2. 110.88 sq cm
 - ☐ 3. 196.96 sq cm
 - ☐ 4. 221.76 sq cm

Q.28 When water enters into the guard cells, the guard cells _____ and the stomatal pore _____.

- Ans**
- ☐ 1. swell; shrinks
 - ☐ 2. shrink; opens
 - ☐ 3. shrink; closes
 - ☒ 4. swell; opens

Q.29 What would be the name of hydrocarbon having three carbon chain with a double bond?

- Ans**
- ☐ 1. Propane
 - ☐ 2. Propanone
 - ☐ 3. Propyne
 - ☒ 4. Propene

Q.30 What was the theme of the 'GST & Customs Pavilion' inaugurated at the India International Trade Fair (IITF) 2024 in November 2024?

- Ans**
- ☐ 1. Supporting trade, facilitating economy
 - ☐ 2. Facilitating trade, strengthening economy
 - ☐ 3. Facilitating economy, fostering trade
 - ☒ 4. Facilitating trade, fostering economy

Q.31 Ansh and Tanvi can do a piece of work in 24 days and 40 days, respectively. They started the work, and after 8 days, Shubham, who can complete the same work in 20 days alone, joined them. In how many days can the whole work be completed?

- Ans**
- ☐ 1. 16 days
 - ☐ 2. 15 days
 - ☒ 3. 12 days
 - ☐ 4. 20 days

Q.32 Which of the following is a suspension?

- Ans**
- ☐ 1. Gases dispersed in liquids
 - ☐ 2. Gases dispersed in solids
 - ☐ 3. Solids dispersed in solids
 - ☒ 4. Solids dispersed in liquids

Q.33 Shreya starts from point A and drives 4 km towards the East. She takes three simultaneous left turns and drives 2 km, 2 km and 3 km, respectively. She then takes a right turn and drives 1 km. She takes a final right turn and drives 1 km to reach point B.

How far (shortest distance) and towards which direction should she drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 1 km North
 - ☐ 2. 1 km South
 - ☐ 3. 1 km East
 - ☒ 4. 1 km West

Q.34 In a certain code language,

$P + Q$ means 'P is the father of Q',

$P - Q$ means 'P is the son of Q',

$P \times Q$ means 'P is the wife of Q' and

$P \div Q$ means 'P is the brother of Q'.

Based on the above, how is C related to E if ' $A - B \times C \div D + E$ '?

- Ans**
- ☒ 1. Father's brother
 - ☐ 2. Son
 - ☐ 3. Father's father
 - ☐ 4. Father

Q.35 If + means \times , \times means \div , \div means $+$, and \div means $+$, then what will come in place of the question mark (?) in the following equation?

$$65 \times 13 - 7 \div 24 + 9 = ?$$

- Ans**
- ☐ 1. 46
 - ☐ 2. 48
 - ☒ 3. 50
 - ☐ 4. 40

Q.36 In November 2024, the Indian Computer Emergency Response Team (CERT-In) signed a Memorandum of Understanding (MoU) with which of the following international cybersecurity companies, specializing in networking and security, to launch joint initiatives aimed at advancing cyber awareness and cybersecurity skills in academia?

- Ans**
- ☒ 1. Fortinet
 - ☐ 2. Palo Alto Networks
 - ☐ 3. Cisco
 - ☐ 4. CrowdStrike

Q.37 Which team won the Khelo India Winter Games 2024 title, winning ten gold, five silver and six bronze?

- Ans**
- ☐ 1. Ladakh
 - ☐ 2. Maharashtra
 - ☐ 3. Karnataka
 - ☒ 4. The Indian Army

Q.38 When a white light falls on a glass prism, _____ colour undergoes maximum deviation.

- Ans**
- ☐ 1. Red
 - ☐ 2. Blue
 - ☐ 3. Yellow
 - ☒ 4. Violet

Q.39 When hydrochloric acid (HCl) reacts with sodium hydroxide (NaOH), which of the following products is formed?

- Ans**
- ☐ 1. Only water
 - ☐ 2. Only salt
 - ☒ 3. Water and salt
 - ☐ 4. Carbon dioxide and water

Q.40 Which of the following substances can act as a source of OH^- ions when dissolved in water?

- Ans**
- ☐ 1. Nitric acid
 - ☐ 2. Carbon dioxide
 - ☐ 3. Hydrochloric acid
 - ☒ 4. Sodium hydroxide

Q.41 The HCF of two numbers is 7 and their LCM is 434. If one of the numbers is 14, the other number is:

- Ans**
- ☐ 1. 146
 - ☐ 2. 48
 - ☒ 3. 217
 - ☐ 4. 52

Q.42 Which edition of Rashtriya Poshan Maah was celebrated nationwide in September 2024, promoted by Ministry of Women and Child Development focusing on advancing nutritional outcomes for children, adolescent girls, pregnant women and lactating mothers holistically?

- Ans**
- ☐ 1. 5th
 - ☐ 2. 6th
 - ☐ 3. 8th
 - ☒ 4. 7th

Q.43 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GJE, ILG, KNI, MPK, ?

- Ans**
- ☐ 1. RMO
 - ☒ 2. ORM
 - ☐ 3. ROM
 - ☐ 4. OMR

Q.44 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 20-times of the same work in _____(days).

- Ans**
- ☐ 1. 5
 - ☐ 2. 4
 - ☒ 3. 80
 - ☐ 4. 81

Q.45 The ratio of milk to honey in 20 litres of a mixture is 3 : 2. The quantity of milk in the mixture is:

- Ans**
- ☐ 1. 10 litres
 - ☐ 2. 6 litres
 - ☐ 3. 8 litres
 - ☒ 4. 12 litres

Q.46 Simplify the following expression:

$$\frac{4.35 \times 4.35 - 2.67 \times 2.67}{1.68}$$

- Ans**
- ☒ 1. 7.02
 - ☐ 2. 7.04
 - ☐ 3. 6.99
 - ☐ 4. 6.96

Q.47 A bus travels two-fifth of the distance at a speed of 50 km/h and the remaining distance at a speed of 60 km/h. What is the average speed of the bus for the whole journey?

- Ans**
- ☐ 1. $54\frac{7}{9}$ km/h
 - ☐ 2. $56\frac{8}{9}$ km/h
 - ☐ 3. $57\frac{2}{9}$ km/h
 - ☒ 4. $55\frac{5}{9}$ km/h

Q.48 Which of the following jointly organised the 'Kaveri Meets Ganga festival series', in November 2024?

- (1) Sangeet Natak Akademi
- (2) Kalakshetra
- (3) Centre for Cultural Resources and Training (CCRT)

- Ans**
- ☐ 1. Only 2 and 3
 - ☐ 2. Only 1 and 3
 - ☐ 3. Only 1 and 2
 - ☒ 4. 1, 2 and 3

Q.49 If $144 : k :: k : 36$, and $k > 0$, find the value of $k - 1$.





- Ans**
- ☐ 1. 72
 - ☐ 2. 27
 - ☐ 3. 26
 - ☒ 4. 71

Q.50 Bharat borrowed a sum of ₹10,000 at a certain rate of simple interest for 2 years. If he paid an interest of ₹2,000 at the end of the period, then find the rate of interest per annum.





- Ans**
- ☐ 1. 20%
 - ☒ 2. 10%
 - ☐ 3. 25%
 - ☐ 4. 15%

Q.51 Which of the following statements is/are correct related to respiration?

- (i) In alveoli, exchange of gases takes place.
- (ii) The walls of alveoli contain an extensive network of blood vessel.
- (iii) In human beings, the respiratory pigments is haemoglobin.

Ans  1. Only (i) and (ii)
 2. (i), (ii) and (iii)
 3. Only (i)
 4. Only (i) and (iii)





Q.52 How many seats did the Bharatiya Janata Party win in Lok Sabha election 2024?

Ans  1. 240
 2. 37
 3. 140
 4. 99

Q.53 VRXT is related to QMSO in a certain way based on the English alphabetical order. In the same way, SOUQ is related to NJPL. To which of the following options is PLRN related, following the same logic?

Ans  1. KGIM
 2. GKMI
 3. KGMI
 4. GKIM





Q.54 Cells of the meristematic tissue are very active, but they lack:

Ans  1. prominent nuclei
 2. dense cytoplasm
 3. vacuoles
 4. thin cellulose walls

Q.55 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. Only three boxes are kept below L. Only two boxes are kept between L and F. Only A is kept above B. M is kept at some place below P and at some place above E. Which box is kept at the second position from the bottom?

Ans  1. E
 2. F
 3. M
 4. L

Q.56 Which of the following is NOT an example of oxidation reaction?

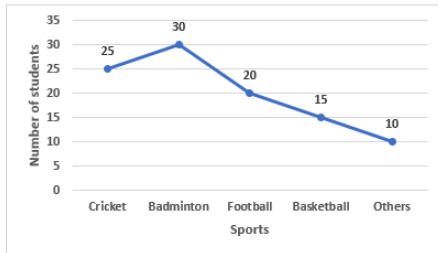
Ans  1. Formation of zinc from zinc oxide
 2. Corrosion
 3. Formation of magnesium oxide from magnesium
 4. Rancidity of oils

Q.57 In which of the following modes of asexual reproduction if an individual is cut or broken into many pieces, many of these pieces grow into separate individuals?

- Ans**
- ✓ 1. regeneration
 - ✗ 2. fission
 - ✗ 3. budding
 - ✗ 4. spore formation

Q.58 Study the given graph and answer the question that follows.

The graph shows the number of students who play Cricket, Badminton, Football, Basketball and other sports (Others).



What percentage of students play cricket as compared to the total number of students who play any of the sports?

- Ans**
- ✗ 1. 45%
 - ✓ 2. 25%
 - ✗ 3. 35%
 - ✗ 4. 15%

Q.59 If an object on the surface of the moon weighs 3 N, the weight of the same object on surface of the Earth is _____.

- Ans**
- ✗ 1. 12 N
 - ✓ 2. 18 N
 - ✗ 3. 24 N
 - ✗ 4. 3 N

Q.60 Which organization released the SDG India Index 2023-24, the fourth edition for measuring progress on the Sustainable Development Goals?

- Ans**
- ✗ 1. Reserve Bank of India (RBI)
 - ✗ 2. Indian Statistical Institute
 - ✓ 3. NITI Aayog
 - ✗ 4. Ministry of Environment

Q.61 The average of 5 consecutive numbers , in increasing order is n. If the next three numbers are also included, the average will:

- Ans**
- ✗ 1. increase by 1
 - ✗ 2. remain the same
 - ✗ 3. increase by 2
 - ✓ 4. increase by 1.5

Q.62 The LCM of the numbers 36, 54, 72 and 96 is:

- Ans**
- ✗ 1. 1064
 - ✗ 2. 964
 - ✓ 3. 864
 - ✗ 4. 764

Q.63 The age of a father is twice the sum of the ages of his 3 children. After 15 years, his age will be equal to the sum of the ages of his children. How old will the father be 15 years later?

- Ans**
- ☒ 1. 75 years
 - ☐ 2. 90 years
 - ☐ 3. 95 years
 - ☐ 4. 85 years

Q.64 Which of the following does NOT belong to the category of asexual reproduction?

- Ans**
- ☐ 1. Vegetative propagation
 - ☒ 2. Fertilisation
 - ☐ 3. Regeneration
 - ☐ 4. Spore formation

Q.65 The rate of doing work can be defined as _____.

- Ans**
- ☐ 1. work
 - ☒ 2. power
 - ☐ 3. energy
 - ☐ 4. force

Q.66 Which of the following statements is true regarding a suspension?

- Ans**
- ☐ 1. Particles are smaller than those in a solution.
 - ☐ 2. Particles cannot be separated by filtration.
 - ☐ 3. Particles do not scatter light.
 - ☒ 4. Particles settle down after some time.

Q.67 A concave mirror has a radius of curvature of 4.00 m. If any object is located at 2.00 m from this mirror, find the position of the image.

- Ans**
- ☐ 1. Between pole and focus point
 - ☒ 2. Infinity
 - ☐ 3. At centre of curvature
 - ☐ 4. Zero

Q.68 Which Indian achieved a significant milestone by winning his first Formula 2 Sprint Race at the Hungarian Grand Prix in July 2024?

- Ans**
- ☐ 1. Jehan Daruvala
 - ☒ 2. Kush Maini
 - ☐ 3. Yash Aradhya
 - ☐ 4. Arjun Maini

Q.69 What is the full form of CNG?

- Ans**
- ☐ 1. Combustible Nitrogen Gas
 - ☒ 2. Compressed Natural Gas
 - ☐ 3. Chemical Natural Gas
 - ☐ 4. Carbonated Natural Gas

Q.70 What is the term used to describe a solution that cannot dissolve any more solute at a given temperature?

- Ans**
- ☐ 1. Heterogeneous solution
 - ☐ 2. Unsaturated solution
 - ☐ 3. Dilute solution
 - ☒ 4. Saturated solution

Q.71 In which state of matter does evaporation occur?

- Ans**
- ☐ 1. Plasma only
 - ☐ 2. Both plasma and liquid
 - ☐ 3. Solid only
 - ☒ 4. Liquid only

Q.72 Which of the following statements is correct about soaps and detergents?

- Ans**
- ☐ 1. Hydrophilic ends interact with hydrocarbons.
 - ☐ 2. Hydrophobic interacts with water molecules.
 - ☐ 3. Soap molecules have no ends.
 - ☒ 4. Soaps molecules have two ends – one is hydrophilic and the other end is hydrophobic.

Q.73 Which of the following is a Pythagorean triplet?

- Ans**
- ☐ 1. (6, 9, 11)
 - ☒ 2. (8, 15, 17)
 - ☐ 3. (2, 3, 5)
 - ☐ 4. (5, 7, 9)

Q.74 A force of 20 N acts on a body in a direction opposite to the displacement of the body. If under the action of this force the displacement is 2m, the work done will be:

- Ans**
- ☐ 1. 0 J
 - ☐ 2. - 20 J
 - ☒ 3. - 40 J
 - ☐ 4. 40 J

Q.75 In a certain code language, 'here we are' is written as 'aj tm yg' and 'are we done' is written as 'gm aj tm'. How is 'done' written in the given language?

- Ans**
- ☐ 1. yg
 - ☐ 2. tm
 - ☐ 3. aj
 - ☒ 4. gm

Q.76 Which of the following act(s) as a site for protein synthesis?

- Ans**
- ☐ 1. Cell membrane
 - ☒ 2. Ribosomes
 - ☐ 3. Plastid
 - ☐ 4. Vacuole

- Q.77** PQRS is a trapezium in which $QR \parallel PS$ and $PR = RS$. If $\angle PQR = 96^\circ$ and $\angle QPR = 36^\circ$, then what is the measure of $\angle PRS$?
- Ans**
- ☐ 1. 80°
 - ☐ 2. 70°
 - ☒ 3. 84°
 - ☐ 4. 75°

- Q.78** David owns a plot worth ₹10,000. He sells it to Rodney at 10% profit. Rodney sells the plot back to David at a loss of 10%. In the whole transaction, Rodney realises _____.
- Ans**
- ☐ 1. no profit no loss
 - ☐ 2. loss of ₹1,000
 - ☐ 3. profit of ₹2,000
 - ☒ 4. loss of ₹1,100

- Q.79** The weights (in kg) of 9 members of a school cricket team are 50, 63, x, 62, 64, 48, 51, 55, 48. If the mean weight is 57 kg, then the value of x is _____.
- Ans**
- ☐ 1. 64
 - ☒ 2. 72
 - ☐ 3. 57
 - ☐ 4. 63

- Q.80** In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?
- (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
- X : 58 :: 117 : Y
- Ans**
- ☒ 1. X = 94, Y = 81
 - ☐ 2. X = 92, Y = 88
 - ☐ 3. X = 102, Y = 95
 - ☐ 4. X = 109, Y = 99

- Q.81** A book is lying on a table and Rahul moves the book in the direction of the force for some distance D. The work done by the force is:
- Ans**
- ☒ 1. positive
 - ☐ 2. negative
 - ☐ 3. undetermined
 - ☐ 4. zero

- Q.82** The remarkable journey of Indian cinema began in 1913 with the release of which of the following first indigenous films?
- Ans**
- ☐ 1. Keechaka Vadham
 - ☒ 2. Raja Harishchandra
 - ☐ 3. Mohini Bhasmasur
 - ☐ 4. Lanka Dahan

Q.83 25% of 25% is equal to:

- Ans**
- ☐ 1. 0.625
 - ☐ 2. 6.25
 - ☐ 3. 0.00625
 - ☒ 4. 0.0625

Q.84 Which of the following is an example of a unicellular organism?

- Ans**
- ☐ 1. House fly
 - ☒ 2. Amoeba
 - ☐ 3. Lizard
 - ☐ 4. Hydra

Q.85 If the radius of a sphere is increased by 20%, then the new volume will become _____ of the original volume.

- Ans**
- ☐ 1. 20%
 - ☐ 2. 120%
 - ☒ 3. 172.8%
 - ☐ 4. 72.8%

Q.86 A current of 2A flows through a wire when the two ends of the wire are maintained at a potential difference of 4 V. The resistance of the wire will be:

- Ans**
- ☐ 1. 4 Ω
 - ☐ 2. $\frac{1}{2} \Omega$
 - ☐ 3. 8 Ω
 - ☒ 4. 2 Ω

Q.87 What is the nature of the magnetic field inside a current-carrying solenoid?

- Ans**
- ☐ 1. Weak uniform magnetic field
 - ☒ 2. Strong uniform magnetic field
 - ☐ 3. Strong non-uniform magnetic field
 - ☐ 4. Weak non-uniform magnetic field

Q.88 Given below is a cause followed by possible effects numbered I and II. Read the cause carefully and decide which of the two can be a/the possible effect(s).

Cause - Inflation is an increase in the general price level of goods and services in an economy. More jobs and higher wages increase household incomes and lead to a rise in consumer spending, further increasing aggregate demand and the scope for firms to increase the prices of their goods and services. When this happens across a large number of businesses and sectors, this leads to an increase in inflation.

Effect I - In an inflationary environment, unevenly rising prices inevitably reduce the purchasing power of some consumers.

Effect II - Those with wealth tend to inherit more and as they have managed to put aside money and invest surpluses, they will be least damaged by any rampant inflation in the economy.

- Ans**
- ☐ 1. Only II is a possible effect.
 - ☐ 2. Neither I nor II are possible effects.
 - ☒ 3. Only I is a possible effect.
 - ☐ 4. Both I and II are possible effects.

Q.89 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. Only two people sit between B and P when counted from the right of B. F sits second to the left of B. Q sits to the immediate left of A. E is not an immediate neighbour of B. Who sits third to the right of R?

- Ans**
- ☒ 1. E
 - ☒ 2. A
 - ☒ 3. Q
 - ☒ 4. P

Q.90 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

24, 31, 45, 66, 94, ?

- Ans**
- ☒ 1. 129
 - ☒ 2. 119
 - ☒ 3. 134
 - ☒ 4. 110

Q.91 Which of the following aircrafts was NOT a part of the Indian Air Force's participation in Exercise Cobra Warrior 2023?

- Ans**
- ☒ 1. C-17 Globemaster III
 - ☒ 2. F-16 Fighting Falcon
 - ☒ 3. Mirage 2000
 - ☒ 4. IL-78 Mid Air Refueller

Q.92 A motorcycle starting from rest attains a velocity of 30 m s^{-1} in 10 s. Assuming that the acceleration is uniform, find the distance travelled by the motorcycle to attain this velocity.

- Ans**
- ☒ 1. 300 m
 - ☒ 2. 250 m
 - ☒ 3. 150 m
 - ☒ 4. 270 m

Q.93 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

MOK, NPL, OQM, PRN, ?

- Ans**
- ☒ 1. QOS
 - ☒ 2. QSO
 - ☒ 3. SOQ
 - ☒ 4. SQO

Q.94 Which of the following statements is/are correct related to the eco-system?

- (i) Ozone is a molecule formed by three atoms of oxygen.
- (ii) Oxygen (O_2) is essential for all aerobic forms of life.
- (iii) Ozone is non-poisonous.

- Ans**
- ☒ 1. (i), (ii) and (iii)
 - ☒ 2. Only (i) and (ii)
 - ☒ 3. Only (i)
 - ☒ 4. Only (i) and (iii)

Q.95 A positive and negative sign in the magnification indicates that the images are:

- Ans**
- ☐ 1. both virtual in nature
 - ☐ 2. both real in nature
 - ☐ 3. real and virtual, respectively
 - ☒ 4. virtual and real, respectively

Q.96 Find the value of $2\sec^2 A + 6\operatorname{cosec}^2 A - 2\tan^2 A - 6\cot^2 A$.

- Ans**
- ☐ 1. 2
 - ☐ 2. 6
 - ☐ 3. 4
 - ☒ 4. 8

Q.97 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. No one sits to the left of B. Only four people sit between B and Y. Only three people sit to the right of C. A sits to the immediate left of L. Z is not an immediate neighbour of C.

Who sits at the rightmost end of the row?

- Ans**
- ☐ 1. X
 - ☒ 2. Z
 - ☐ 3. L
 - ☐ 4. Y

Q.98 In which year were cells first discovered by Robert Hooke?

- Ans**
- ☒ 1. 1665
 - ☐ 2. 1670
 - ☐ 3. 1667
 - ☐ 4. 1664

Q.99 After the process of fertilisation which part of the flower undergoes transformation to develop into a seed?

- Ans**
- ☐ 1. Stigma
 - ☒ 2. Ovule
 - ☐ 3. Style
 - ☐ 4. Ovary

Q.100 The position(s) of how many letters will remain unchanged if each of the letters in the word DISPLAY is arranged in the English alphabetical order ?

- Ans**
- ☐ 1. 2
 - ☐ 2. 0
 - ☒ 3. 1
 - ☐ 4. 3



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	27/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 When an action or a movement is to be performed, which tissue will do the final job in animals?

- Ans
- ☒ 1. Connective tissue
 - ☒ 2. Epithelial tissue
 - ☒ 3. Meristematic tissue
 - ☒ 4. Muscular tissue

Q.2 How long will it take for ₹1,500 to become ₹1,860 at 8% per annum simple interest?

- Ans
- ☒ 1. $4\frac{1}{2}$ years
 - ☒ 2. $4\frac{3}{4}$ years
 - ☒ 3. 3 years
 - ☒ 4. 2 years

Q.3 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 9 5 4 1 0 4 3 5 1 7 8 0 6 3 5 1 6 0 6 8 9 0 5 5 7 5 2 0 6 2 (Right)

What is the sum of the 5th digit from the left and the 2nd digit from the right?

- Ans
- ☒ 1. 8
 - ☒ 2. 6
 - ☒ 3. 3
 - ☒ 4. 7

Q.4 While dissolving solute in a solution, when no more solute can be dissolved in a solution at a given temperature, it is called _____.

- Ans
- ☒ 1. an unsaturated solution
 - ☒ 2. a suspension
 - ☒ 3. a colloidal solution
 - ☒ 4. a saturated solution

Q.5 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(45, 96, 141)

(12, 16, 28)

- Ans**
- ☒ 1. (13, 15, 30)
 - ☒ 2. (16,20,36)
 - ☒ 3. (14, 17, 32)
 - ☒ 4. (10, 7, 18)

Q.6 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \cot \theta \sin \theta + \cos \theta$ is _____.

- Ans**
- ☒ 1. $2\cos\theta$
 - ☒ 2. -1
 - ☒ 3. $\sec^2 \theta$
 - ☒ 4. 0

Q.7 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

LNI, MOJ, NPK, OQL, ?

- Ans**
- ☒ 1. RMP
 - ☒ 2. RPM
 - ☒ 3. PMR
 - ☒ 4. PRM

Q.8 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) \$ 1 & 8 4 7 £ * 5 3 @ 2 % 9 + Ω 6 # (Right)

How many such numbers are there, each of which is immediately preceded by a number and also immediately followed by another number?

- Ans**
- ☒ 1. 1
 - ☒ 2. 2
 - ☒ 3. 3
 - ☒ 4. 4

Q.9 Who discovered free living cells in pond water for the first time?

- Ans**
- ☒ 1. Virchow in 1855
 - ☒ 2. Leeuwenhoek in 1674
 - ☒ 3. Robert Hooke in 1665
 - ☒ 4. Robert Brown in 1831

Q.10 The PARAM Rudra supercomputer was inaugurated at which institute on 27 September 2024?

- Ans**
- ☒ 1. Tata Institute of Fundamental Research (TIFR), Mumbai
 - ☒ 2. S.N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata
 - ☒ 3. Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru
 - ☒ 4. Indian Institute of Science (IISc), Bengaluru

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Q.11 Who among the following received the 53rd Dadasaheb Phalke Award in 2023 for her lifetime achievement in Indian cinema?

- Ans**
- ☐ 1. Sridevi
 - ☐ 2. Hema Malini
 - ☒ 3. Waheeda Rehman
 - ☐ 4. Rekha

Q.12 On 28 October 2024, in which city of Gujarat did Prime Minister Narendra Modi and Spanish PM Pedro Sanchez inaugurate the Tata Aircraft Complex, India's first private facility to build military planes?

- Ans**
- ☐ 1. Gandhi Nagar
 - ☐ 2. Kutch
 - ☐ 3. Ahmedabad
 - ☒ 4. Vadodara

Q.13 Some seeds are dispersed when the fruits burst with sudden jerks and the seeds are scattered far from the parent plant. This happens in fruits of which of the following plants?

- Ans**
- ☐ 1. Sunflower and Madar
 - ☐ 2. Drumstick and Maple
 - ☐ 3. Xanthium and Urena
 - ☒ 4. Castor and Balsam

Q.14 Calcium oxide reacts vigorously with water to produce slaked lime, releasing a large amount of heat. This reaction is an example of which of the following types of reaction?

- Ans**
- ☐ 1. Precipitation reaction
 - ☒ 2. Combination reaction
 - ☐ 3. Decomposition reaction
 - ☐ 4. Double decomposition reaction

Q.15 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

318, 300, 150, 132, 66, 48, ?

- Ans**
- ☐ 1. 16
 - ☐ 2. 32
 - ☒ 3. 24
 - ☐ 4. 58

Q.16 What is the SI unit of mass and weight of a body, respectively?

- Ans**
- ☐ 1. kg, kg
 - ☐ 2. kg, s
 - ☐ 3. gm, N
 - ☒ 4. kg, N

Q.17 A rectangular field 50 meters long and 42 meters broad contains a rectangular lawn inside it surrounded by a gravel path of uniform width. If the width of the path is 6 m, then the area of the path is

- Ans**
- ☐ 1. 480 m^2
 - ☐ 2. 720 m^2
 - ☐ 3. 240 m^2
 - ☒ 4. 960 m^2

Q.18 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(12, 3, 9)

(28, 7, 21)

- Ans**
- ☐ 1. (48, 12, 26)
 - ☐ 2. (44, 12, 36)
 - ☒ 3. (48, 12, 36)
 - ☐ 4. (48, 14, 36)

Q.19 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All cups are plates.

All plates are glasses.

Conclusions:

(I) Some plates are not cups.

(II) All cups are glasses.

- Ans**
- ☒ 1. Only conclusion II follows
 - ☐ 2. Both conclusions I and II follow
 - ☐ 3. Only conclusion I follows
 - ☐ 4. Neither conclusion I nor II follows

Q.20 Which state won the 14th Hockey India Senior Men National Championship, 2024?

- Ans**
- ☐ 1. Karnataka
 - ☐ 2. Punjab
 - ☒ 3. Odisha
 - ☐ 4. Haryana

Q.21 which of the following is/ are correct related to Adrenalin hormone ?

- (i) Heart beats faster
- (ii) Breathing rate increases
- (iii) Decreases blood pressure

Ans

- ☒ 1. Only (i) and (iii)
- ☒ 2. Only (ii) and (iii)
- ☒ 3. Only (i) and (ii)
- ☒ 4. (i), (ii) and (iii)

Q.22 What should be added to $\frac{-5}{9}$ to get $\frac{-5}{6}$?

Ans

- ☒ 1. $\frac{-5}{18}$
- ☒ 2. $\frac{-5}{9}$
- ☒ 3. $\frac{-5}{12}$
- ☒ 4. $\frac{-5}{6}$

Q.23 The speed of a car is 90 km/h in the first hour and 60 km/h in the second hour. What is the average speed of the car for the given two hours?

Ans

- ☒ 1. 72 km/h
- ☒ 2. 75 km/h
- ☒ 3. 80 km/h
- ☒ 4. 85 km/h

Q.24 If the magnitude of the force exerted by the earth on the moon is $2.02 \times 10^{20} \text{ N}$, then the magnitude of the force exerted by the moon on the earth is _____.

Ans

- ☒ 1. $4.04 \times 10^{20} \text{ N}$
- ☒ 2. $2.02 \times 10^{20} \text{ N}$
- ☒ 3. $6.06 \times 10^{20} \text{ N}$
- ☒ 4. $1.01 \times 10^{20} \text{ N}$

Q.25 If $3^{(K-2)} \times 3^K = 729$, then the value of K is:

Ans

- ☒ 1. 2
- ☒ 2. 4
- ☒ 3. 8
- ☒ 4. 6

Q.26 Magnification produced by a lens is related to the object-distance u , and the image-distance v . This relationship is given by:

- Ans**
- ☐ 1. u/v
 - ☒ 2. v/u
 - ☐ 3. $u - v$
 - ☐ 4. $v - u$

Q.27 A shopkeeper provides successive discounts of 2% and 5%, which are equivalent to a single discount of ____.

- Ans**
- ☐ 1. 7%
 - ☐ 2. 7.1%
 - ☒ 3. 6.9%
 - ☐ 4. 6%

Q.28 If $a + \frac{1}{a} = 8$, then $a^2 + \frac{1}{a^2} = ?$

- Ans**
- ☐ 1. 64
 - ☐ 2. 68
 - ☐ 3. 66
 - ☒ 4. 62

Q.29 Which of the following is the dispersed phase of automobile exhaust?

- Ans**
- ☐ 1. Gaseous phase
 - ☒ 2. Solid phase
 - ☐ 3. Plasma phase
 - ☐ 4. Liquid phase

Q.30 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

The river running through Town A is heavily polluted, affecting aquatic life and posing risks to public health due to industrial waste disposal and untreated sewage.

Courses of Action:

I. Invest in building advanced wastewater treatment plants to treat industrial effluents and sewage before releasing them into the river.

II. Launch a community-led initiative to organise regular river clean up drives involving volunteers from Town A.

- Ans**
- ☐ 1. Only II follows.
 - ☒ 2. Both I and II follow.
 - ☐ 3. Neither I nor II follows.
 - ☐ 4. Only I follows.

Q.31 Which of the following parts of a plant always grow downwards?

- Ans**
- ☒ 1. Roots
 - ☐ 2. Buds
 - ☐ 3. Leaves
 - ☐ 4. Branches

Q.32 What will come in the place of '?' in the following equation, if '+' and '÷' are interchanged and '×' and '-' are interchanged?

$$9 - 2 \times 20 + 4 \div 11 = ?$$

- Ans**
- ☒ 1. 24
 - ☐ 2. 19
 - ☐ 3. 14
 - ☐ 4. 27

Q.33 In a certain code language, 'email needs internet' is coded as 'ma bi cy' and 'radio needs waves' is coded as 'cy nu ph'. What is the code for 'needs' in the given code language?

- Ans**
- ☐ 1. ph
 - ☐ 2. bi
 - ☐ 3. nu
 - ☒ 4. cy

Q.34 In which of the following matter are particles held together with maximum force?

- Ans**
- ☐ 1. Water
 - ☐ 2. Perfume
 - ☐ 3. Ink of pen
 - ☒ 4. Iron stick

Q.35 The ratio of milk to water in 10 litres of a mixture is 3 : 2. The quantity of milk in the mixture will be:

- Ans**
- ☐ 1. 4 litres
 - ☒ 2. 6 litres
 - ☐ 3. 5 litres
 - ☐ 4. 10 litres

Q.36 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JH-KI-LN

LJ-MK-NP

- Ans**
- ☐ 1. RP-SQ-TU
 - ☐ 2. QO-RP-ST
 - ☒ 3. OM-PN-QS
 - ☐ 4. SQ-TR-UV

Q.37 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. JFB
 - ☐ 2. TPL
 - ☒ 3. FOZ
 - ☐ 4. CYU

Q.38 If 6, 18, 39, and x are in proportion, then find the value of x.

- Ans**
- ☒ 1. 117
 - ☐ 2. 112
 - ☐ 3. 139
 - ☐ 4. 115

Q.39 Amit starts from Point A and drives 35 km towards East. He then takes a right turn, drives 17 km, turns right and drives 15 km. He then takes a left turn and drives 13 km. He takes a final right turn, drives 20 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 28 km towards South
 - ☐ 2. 30 km towards East
 - ☒ 3. 30 km towards North
 - ☐ 4. 28 km towards North

Q.40 How does a plant move its leaves in response to touch?

- Ans**
- ☐ 1. By changing the amount of nucleic acid in them
 - ☐ 2. By changing the amount of protein in them
 - ☐ 3. By changing the amount of lipid in them
 - ☒ 4. By changing the amount of water in them

Q.41 If your nose is blocked, the olfactory receptors are NOT able to detect:

- Ans**
- ☐ 1. walking
 - ☐ 2. taste
 - ☒ 3. smell
 - ☐ 4. hearing


Q.42 Which state of matter has the highest kinetic energy of particles?


- Ans**
- ☒ 1. Gas
 - ☐ 2. Plasma
 - ☐ 3. Liquid
 - ☐ 4. Solid


Q.43 Which of the following is correctly matched?


- Ans**
- ☐ 1. Bisexual flower - Papaya
 - ☒ 2. Unisexual flower - Watermelon
 - ☐ 3. Bisexual flower - Watermelon
 - ☐ 4. Unisexual flower - Mustard

Q.44 Which is/are present at the growing tips of stems and roots and increase(s) the length of the stem and the root?


Ans  1. Only intercalary meristem


 2. Only apical meristem


 3. Lateral meristem and intercalary meristem


 4. Only lateral meristem

Q.45 If a pair of linear equations is consistent, then the lines will be:

Ans  1. intersecting or coincident

 2. always intersecting


 3. always coincident


 4. parallel


Q.46 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).


(Left) 4 1 6 1 9 8 8 1 3 8 4 8 6 8 1 9 2 3 3 4 6 2 8 4 5 1 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an even digit?


Ans  1. 4


 2. 2


 3. 0


 4. 1

Q.47 The Mussalman Wakf (Repeal) Bill, 2024, was introduced in the Lok Sabha on ____.


Ans  1. 8 October 2024


 2. 8 August 2024


 3. 5 August 2024


 4. 18 September 2024

Q.48 In plants, some waste products are stored as resins and gums especially in the:


Ans  1. tissues with dead cells


 2. cellular vacuoles


 3. leaves


 4. old xylem

Q.49 A box full of chocolates weighs 12.650 kg. If the weight of the chocolates is 6 kg 350 g, the weight of the empty box is:

Ans  1. 2850 g

 2. 2825 g

 3. 6300 g

 4. 6725 g

Q.50 If multiple fission :: many cells, then binary fission :: _____.

- Ans**
- ☐ 1. four cells
 - ☒ 2. two cells
 - ☐ 3. three cells
 - ☐ 4. one cell

Q.51 A cuboidal room is of length 15 m, breadth 17 m, and height 21 m. Find the cost of painting its walls and ceiling at the rate of ₹42/m².

- Ans**
- ☐ 1. ₹68,918
 - ☐ 2. ₹65,128
 - ☐ 3. ₹64,258
 - ☒ 4. ₹67,158

Q.52 The sum of two numbers is 35, and their LCM is 306. The two numbers are:

- Ans**
- ☒ 1. 17, 18
 - ☐ 2. 13, 22
 - ☐ 3. 16, 19
 - ☐ 4. 14, 21

Q.53 A cistern is filled by Pipe A and Pipe B together in 2.4 hours. Pipe A alone can fill the cistern at the rate of 100 litres per hour. Pipe B alone can fill the cistern in 4 hours. What is the capacity of the cistern?

- Ans**
- ☐ 1. 500 litres
 - ☒ 2. 600 litres
 - ☐ 3. 1200 litres
 - ☐ 4. 1000 litres

Q.54 A bus travel the first 60 m in 30 s and then another 80 m in 40 s. Calculate the average speed of the bus in m s⁻¹.

- Ans**
- ☐ 1. 2.28 m s⁻¹
 - ☐ 2. 1 m s⁻¹
 - ☐ 3. 0.15 m s⁻¹
 - ☒ 4. 2 m s⁻¹

Q.55 If $A = 8^3 \times 5^4$ and $B = 8^5 \times 5^3$, then the value of $A \times B$ is:

- Ans**
- ☒ 1. $2^{24} \times 5^7$
 - ☐ 2. $2^{16} \times 5^8$
 - ☐ 3. $4^{15} \times 5^7$
 - ☐ 4. $8^{15} \times 5^{12}$

Q.56 In July 2024, which bank launched a new term deposit scheme 'Amrit Vrishti' with a tenure of 444 days?

- Ans**
- ☐ 1. HDFC
 - ☒ 2. SBI
 - ☐ 3. CITI Bank
 - ☐ 4. ICICI

Q.57 Y has to score 40% marks to pass in an exam. He gets 20 marks and fails by 40 marks. The maximum marks of the exam is:

- Ans**
- ☐ 1. 250
 - ☐ 2. 100
 - ☒ 3. 150
 - ☐ 4. 200

Q.58 If a regular polygon has 20 diagonals, then the sum of its interior angles is:

- Ans**
- ☒ 1. 1080°
 - ☐ 2. 960°
 - ☐ 3. 1440°
 - ☐ 4. 1200°

Q.59 A student has an eye-power of $-0.5D$. What is the focal length and type of lens of spectacles that she should use for correcting this defect?

- Ans**
- ☐ 1. -2.5 m, concave lens
 - ☐ 2. 2.5 m, convex lens
 - ☒ 3. -2.0 m, concave lens
 - ☐ 4. 2.0 m, convex lens

Q.60 What is the budget allocation for the Pradhan Mantri Vishwakarma Yojana (PM Vishwakarma Scheme) for the period from 2023-24 to 2027-28?

- Ans**
- ☐ 1. ₹16,000 crore
 - ☐ 2. ₹15,000 crore
 - ☒ 3. ₹13,000 crore
 - ☐ 4. ₹14,000 crore

Q.61 Which of the following statements is true about a compound?

- Ans**
- ☐ 1. The constituents can be separated by physical process.
 - ☐ 2. It is a physical change.
 - ☒ 3. The new product formed has totally different properties.
 - ☐ 4. The new product formed has similar properties to the constituent substance.

Q.62 David's salary was first decreased by 40% and subsequently increased by 50%. What percentage did he lose from his initial salary?

- Ans**
- ☐ 1. 14%
 - ☒ 2. 10%
 - ☐ 3. 15%
 - ☐ 4. 12%

Q.63 Which of the following is the correct formula for pentane?

- Ans**
- ☒ 1. C_5H_{12}
 - ☐ 2. C_5H_{10}
 - ☐ 3. C_5H_{14}
 - ☐ 4. C_5H_9

Q.64 A building contractor employs 25 male and 15 female workers. To a male worker he pays ₹20 per hour and to a female worker ₹20 per hour. The average wage per hour paid by the contractor is:

- Ans**
- ☐ 1. ₹22
 - ☐ 2. ₹23
 - ☒ 3. ₹20
 - ☐ 4. ₹21

Q.65 In a certain code language, 'TEACH' is coded as '18239', 'MAKE' is coded as '4168' and 'CHECK' is coded as '83943'. What is the code for 'T' in the given code language?

- Ans**
- ☒ 1. 2
 - ☐ 2. 1
 - ☐ 3. 9
 - ☐ 4. 8

Q.66 In a certain code language,

'A + B' means 'A is the sister of B',

'A – B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

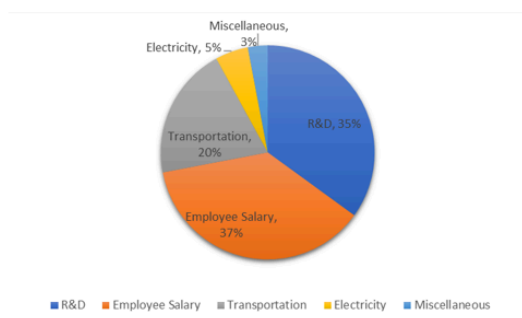
and 'A ÷ B' means 'A is the son of B'.

How is S related to W if 'R – S x T + U – V x W'?

- Ans**
- ☐ 1. Mother
 - ☐ 2. Sister
 - ☐ 3. Mother's mother
 - ☒ 4. Father's mother

Q.67 Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of the different costs incurred by Company X in the year 2020.



If the total cost incurred by the company X in 2020 is \$100,000, what is the electricity cost incurred by the company in 2020?

- Ans**
- ☐ 1. \$15,000
 - ☒ 2. \$5,000
 - ☐ 3. \$50,000
 - ☐ 4. \$35,000

Q.68 If a ligament connects two bones, which of the following connects muscles to bones?

- Ans**
- ☐ 1. Cartilage
 - ☐ 2. Fibroblast
 - ☒ 3. Tendon
 - ☐ 4. Blood

Q.69 Which of the following statements is NOT true about a solution?

- Ans**
- ☒ 1. Particles of the solution can be seen by the naked eye.
 - ☐ 2. The solute particles do not settle down when left undisturbed.
 - ☐ 3. A solution is a homogeneous mixture.
 - ☐ 4. The solute particles cannot be separated by filtration.

Q.70 The pH of gastric juice is _____.

- Ans**
- ☐ 1. 7.4
 - ☐ 2. 2.2
 - ☒ 3. 1.2
 - ☐ 4. 10.0

Q.71 In the electrolytic refining process of metals, electrolyte is made up of which of the following?

- Ans**
- ☐ 1. Combination of pure metal and metal salt
 - ☐ 2. Impure metal
 - ☒ 3. Metal salt
 - ☐ 4. Pure metal

Q.72 John, Kelly, Lisa, Mike, Nancy, and Owen—are sitting in a straight line, facing north. Only one person sits to the left of Kelly. Exactly two people sit between Kelly and Lisa. Mike sits second to the right of Owen. Mike is not an immediate neighbor of Lisa. John sits to the immediate right of Lisa.

Who sits at the extreme left end of the line ?

- Ans**
- ☐ 1. Nancy
 - ☒ 2. Owen
 - ☐ 3. Mike
 - ☐ 4. John

Q.73 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JF-BE-HG

MI-EH-KJ

- Ans**
- ☒ 1. QM-IL-ON
 - ☐ 2. PM-IL-OJ
 - ☐ 3. QM-IK-ON
 - ☐ 4. PM-IL-OK

Q.74 If an object takes 2 seconds to travel once around a circular path with radius ' r ', its speed ' v ' is given by _____.

- Ans**
- ☐ 1. $\frac{\pi r}{2}$ metre/second
 - ☒ 2. πr metre/second
 - ☐ 3. $2\pi r$ metre/second
 - ☐ 4. $\frac{\pi r}{4}$ metre/second

Q.75 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. VAF
 - ☐ 2. AFK
 - ☐ 3. TYD
 - ☒ 4. PVZ

Q.76 _____, on 9 September 2024, emphasised that safety and social audits of cities and institutions should be carried out to get a better idea about the lags and issues that currently exist in terms of ensuring women's safety in India.

- Ans**
- ☐ 1. The Prajnya Trust for Women (PTW)
 - ☐ 2. The Self-Employed Women's Association (SEWA)
 - ☐ 3. The All India Federation of Women Lawyers (AIFWL)
 - ☒ 4. The National Human Rights Commission (NHRC)

Q.77 Ozone shields the surface of the earth from ultraviolet (UV) radiation from the Sun and the amount of ozone in the atmosphere begins to drop sharply due to which of the following synthetic chemicals?

- Ans**
- ☐ 1. Carbon monoxide
 - ☒ 2. Chlorofluorocarbons
 - ☐ 3. Pesticides
 - ☐ 4. Insecticides

Q.78 In what direction is fluid pressure transmitted in any confined mass of fluid?

- Ans**
- ☐ 1. In two directions only.
 - ☒ 2. Undiminished in all directions.
 - ☐ 3. In one direction only.
 - ☐ 4. In three directions only.

Q.79 Ishan is younger than Surya by 3 years. If the ages of Ishan and Surya are in the ratio 7 : 8, then how old is Ishan?

- Ans**
- ☐ 1. 27 years
 - ☒ 2. 21 years
 - ☐ 3. 18 years
 - ☐ 4. 24 years

Q.80 A student in the lab observes the temperature of water on the Kelvin scale as 298K. What is the correct conversion of this temperature in the Celsius scale?

- Ans**
- ☐ 1. 32 degree Celsius
 - ☐ 2. 28 degree Celsius
 - ☒ 3. 25 degree Celsius
 - ☐ 4. 30 degree Celsius

Q.81 In an aqueous solution, acid and base produce:

- Ans**
- ☐ 1. Na^+ ions and CO_3^{2-} ions, respectively
 - ☒ 2. H^+ ions and OH^- ions, respectively
 - ☐ 3. Li^+ ions and CO_3^{2-} ions, respectively
 - ☐ 4. K^+ ions and CO_3^{2-} ions, respectively

Q.82 A current of 2 A is flowing through a conductor of resistance 12 Ω . Then the potential difference across the conductor is:

- Ans**
- ☐ 1. 12 V
 - ☒ 2. 24 V
 - ☐ 3. 6 V
 - ☐ 4. 35 V

Q.83 If a 5 N force applied to an object displaces it by 3 m from its initial position, then what is the work done by the force?

- Ans**
- ☐ 1. 20 J
 - ☐ 2. 5/3 J
 - ☐ 3. 50 J
 - ☒ 4. 15 J

Q.84 What will come in the place of '?' in the following equation, if '+' and '+' are interchanged and '×' and '-' are interchanged?

$$24 + 4 - 15 \div 2 \times 12 = ?$$

- Ans**
- ☐ 1. 70
 - ☐ 2. 90
 - ☐ 3. 100
 - ☒ 4. 80

Q.85 The _____ on 5 April 2024 launched India's first-ever book on Sports Psychology.

- Ans**
- ☒ 1. International Institute of Sports Management (IISM)
 - ☐ 2. National Institute of Sports Management (NISM)
 - ☐ 3. International School of Sports Management (ISSM)
 - ☐ 4. Tamil Nadu Physical Education and Sports University (TNPES)

Q.86 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

QSU, PRT, OQS, NPR, ?

- Ans**
- ☐ 1. MQO
 - ☒ 2. MOQ
 - ☐ 3. OMQ
 - ☐ 4. OQM

Q.87 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All wigs are plastics.

All stones are plastics.

Conclusion:

(I) All plastics are wigs.

(II) Some wigs are stones.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☐ 2. Only conclusion (I) follows.
 - ☐ 3. Both conclusions (I) and (II) follow.
 - ☒ 4. Neither conclusion (I) nor (II) follows.

Q.88 In what duration will a sum of ₹2,100 fetch a simple interest of ₹1,050 at 10% per annum rate of interest?

- Ans**
- ☐ 1. 10 years
 - ☐ 2. 6 years
 - ☒ 3. 5 years
 - ☐ 4. 8 years

Q.89 If the manufacturer gains 10%, the wholesale dealer gains 15% and the retailer gains 25%, then the cost of production of a table, the retail price of which is ₹1,265, will be:

- Ans**
- ☐ 1. ₹632.50
 - ☐ 2. ₹834.34
 - ☒ 3. ₹800.00
 - ☐ 4. ₹814.00

Q.90 Which of the following statement is NOT true for the magnetic field lines inside a current-carrying solenoid?

- Ans**
- ☐ 1. Along the axis and parallel to each other
 - ☒ 2. Ellipsoidal and intersects with each other
 - ☐ 3. Uniform inside the solenoid
 - ☐ 4. The same at all points inside the solenoid

Q.91 All 37 people are standing in a row facing North. Arav is 14th from the right end while Varun is 21st from the left end. How many people are there between Arav and Varun?

- Ans**
- ☒ 1. 2
 - ☐ 2. 11
 - ☐ 3. 6
 - ☐ 4. 4

Q.92 The work done by a person pushing a brick parallel to the ground with a force of 2 N is 3 J. The displacement caused by the force is equal to _____.

- Ans**
- ☒ 1. 1.5 m
 - ☐ 2. 6 m
 - ☐ 3. 5 m
 - ☐ 4. 0.66 m

Q.93 Which of the following compounds is NOT formed when ferrous sulphate is heated?

- Ans**
- ☐ 1. Ferric oxide
 - ☐ 2. Sulphur dioxide
 - ☐ 3. Sulphur trioxide
 - ☒ 4. Sulphuric acid

Q.94 Consider an object moving along a straight line, it starts from point A, reaches point B, and then returns to point A. If the distance between A and B is 20 m, then the net displacement of the object is:

- Ans**
- ☐ 1. 10 m
 - ☒ 2. 0 m
 - ☐ 3. 40 m
 - ☐ 4. 20 m

Q.95 Which of the following helps Paramoecium move food to the specific spot in the cell to obtain nutrition?

- Ans**
- ☐ 1. Flagella
 - ☐ 2. Pseudopodia
 - ☐ 3. Parapodia
 - ☒ 4. Cilia

Q.96 A soft iron bar is introduced inside the current carrying solenoid. What is the magnetic field inside a current-carrying solenoid when a bar made of soft iron is introduced inside the solenoid?





- Ans**
- ☐ 1. Will become zero
 - ☒ 2. Will increase
 - ☐ 3. Will decrease
 - ☐ 4. Will remain same

Q.97 Which city in Uttar Pradesh was awarded the first prize under the Medium-sized Cities category (Population between 3 lakh and 10 lakh) in the Swachh Vayu Survekshan 2024?

- Ans**
- ☐ 1. Varanasi
 - ☒ 2. Agra
 - ☐ 3. Firozabad

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Q.98 If the median of a data is 24.12 less than its mode, then the median of the data exceeds its mean by _____. (Use the empirical formula to find the answer)

- Ans**
-  1. 16.08
 -  2. 6.03
 -  3. 8.04
 -  4. 12.06

Q.99 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. L sits third to the left of K. Only two people sit between E and F when counted from the left of F. C sits to the immediate right of K. C sits second to the left of E. B is not an immediate neighbour of L. Who sits third to the right of B?

- Ans**
-  1. L
 -  2. F
 -  3. D
 -  4. K

Q.100 Two pipes can fill a tank in 20 and 24 minutes, respectively, and a waste pipe can empty 3 gallons per minute. All the three pipes working together can fill the tank in 15 minutes. The capacity of the tank is:

- Ans**
-  1. 60 gallons
 -  2. 180 gallons
 -  3. 100 gallons
 -  4. 120 gallons

2024/12/28-14:35:50



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	27/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The ratio of the number of boys to that of the girls in a school is 9 : 7. If the number of girls in the school is 189, then the number of boys in that school will be:

- Ans**
- ☒ 1. 126
 - ☒ 2. 243
 - ☒ 3. 168
 - ☒ 4. 147

Q.2 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All tablets are screens.

All screens are gadgets.

Conclusions:

(I) Some gadgets are tablets.


(II) No gadgets are tablets.


- Ans**
- ☒ 1. Only conclusion (II) follows
 - ☒ 2. Neither conclusion (I) nor (II) follows
 - ☒ 3. Both conclusions (I) and (II) follow
 - ☒ 4. Only conclusion (I) follows


Q.3 In November 2024, which Indian Institutes of Technology (IIT) unveiled a Mechanical Knee Rehabilitation Device, which is a mechanical Completely Mechanical Passive (CPM) machine unlike traditional motorised CPM machines, eliminating the need for electricity, batteries and motors?


- Ans**
- ☒ 1. IIT Kanpur
 - ☒ 2. IIT Ropar
 - ☒ 3. IIT Delhi
 - ☒ 4. IIT Mandi

Q.4 A convex mirror created a highly diminished, point-sized virtual image, then the position of the image is:

Ans  1. in front of the mirror at the centre of curvature C

 2. behind the mirror at the focus F


 3. behind the mirror at the centre of curvature C


 4. in front of the mirror at the focus F


Q.5 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.


SOLD - DLSO - SLOD

TEAR - RATE - TAER


Ans  1. VOID - DIVO - VIOD


 2. LANG - ANLG - ANGL


 3. SALE - ELSA - ALSE


 4. GROW - GORW - WORG

Q.6 ROSP is related to WTXU in a certain way based on the English alphabetical order. In the same way, TQUR is related to YVZW. To which of the following options is OLPM related, following the same logic?


Ans  1. QTRU


 2. TQUR


 3. TQRU


 4. QTUR

Q.7 Three numbers are in the ratio 1 : 2 : 5, and their LCM is 1600. The HCF of the numbers is:


Ans  1. 320


 2. 800


 3. 480


 4. 160

Q.8 Plasma membrane is made up of _____.

Ans  1. Only lipids


 2. Only cellulose


 3. Both proteins and lipids


 4. Only proteins


Q.9 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans  1. GC-FH

 2. JF-IL

 3. MI-LN

 4. EA-DF

Q.10 The area of the square formed on the diagonal of a rectangle as its side is $108\frac{1}{3}\%$ more than the area of the rectangle. If the perimeter of the rectangle is 28 units, find the difference between the sides of the rectangle?

- Ans**
- ☐ 1. 4
 - ☐ 2. 6
 - ☒ 3. 2
 - ☐ 4. 8

Q.11 A sum of money doubles itself on compound interest in 15 years. In what duration will it become 8 times of itself, considering annual compounding?

- Ans**
- ☐ 1. 30 years
 - ☐ 2. 40 years
 - ☐ 3. 60 years
 - ☒ 4. 45 years

Q.12 Variation is useful for the survival of species over time. These variations occur due to errors in:

- Ans**
- ☐ 1. formation of red blood cells
 - ☒ 2. DNA copying
 - ☐ 3. differentiation of white blood cells
 - ☐ 4. formation of neurons

Q.13 If 85% of a number is added to 24, then the result is the same number. 75% of the same number is:

- Ans**
- ☐ 1. 90
 - ☐ 2. 160
 - ☒ 3. 120
 - ☐ 4. 150

Q.14 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health.

Reasons:

I. Several factors can play a role in gaining and retaining excess weight. These include diet, lack of exercise, environmental factors, and genetics.

II. There are a number of scientifically proven ways you can keep the weight off, ranging from exercising, a proper diet to controlling stress.

- Ans**
- ☐ 1. Neither I nor II is a possible reason.
 - ☐ 2. Both I and II are possible reasons.
 - ☒ 3. Only I is a possible reason.
 - ☐ 4. Only II is a possible reason.

Q.15 Which of the following is used in the oxidation of alcohol into carboxylic acid?

- Ans**
- ☐ 1. Palladium
 - ☐ 2. Zinc
 - ☒ 3. Alkaline potassium permanganate
 - ☐ 4. Nickel

Q.16 The Union Budget 2024-25 introduced the Prime Minister's package, comprising how many schemes and initiatives, aimed at providing employment, skilling, and other opportunities to 4.1 crore youth over a five-year period?

- Ans**
- ☒ 1. Five
 - ☐ 2. Four
 - ☐ 3. Six
 - ☐ 4. Three

Q.17 If the radius of a sphere is halved, then the new volume will become _____ the original volume.

- Ans**
- ☐ 1. 4 times
 - ☐ 2. $\frac{1}{4}$ times
 - ☒ 3. $\frac{1}{8}$ times
 - ☐ 4. 8 times

Q.18 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 40 :: 18 : Y

- Ans**
- ☐ 1. X = 24, Y = 38
 - ☐ 2. X = 20, Y = 40
 - ☐ 3. X = 28, Y = 56
 - ☒ 4. X = 22, Y = 32

Q.19 Amphibians have a _____ chambered heart.

- Ans**
- ☐ 1. One
 - ☐ 2. Two
 - ☐ 3. Four
 - ☒ 4. Three

Q.20 Among the following which is NOT a homologous compound as compared to others?

- Ans**
- ☐ 1. CH_3OH
 - ☐ 2. $\text{C}_2\text{H}_5\text{OH}$
 - ☐ 3. $\text{C}_3\text{H}_7\text{OH}$
 - ☒ 4. $\text{C}_6\text{H}_5\text{OH}$

Q.21 The twinkling of stars is due to _____.

- Ans**
- ☐ 1. the atmospheric reflection of light from the stars
 - ☒ 2. the atmospheric refraction of light from the star
 - ☐ 3. the interference of light from a star and moon
 - ☐ 4. the interference of light from different stars

Q.22 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All screens are mouse.

Some mice are keyboards.

Conclusions:

(I) Some screens are keyboards.

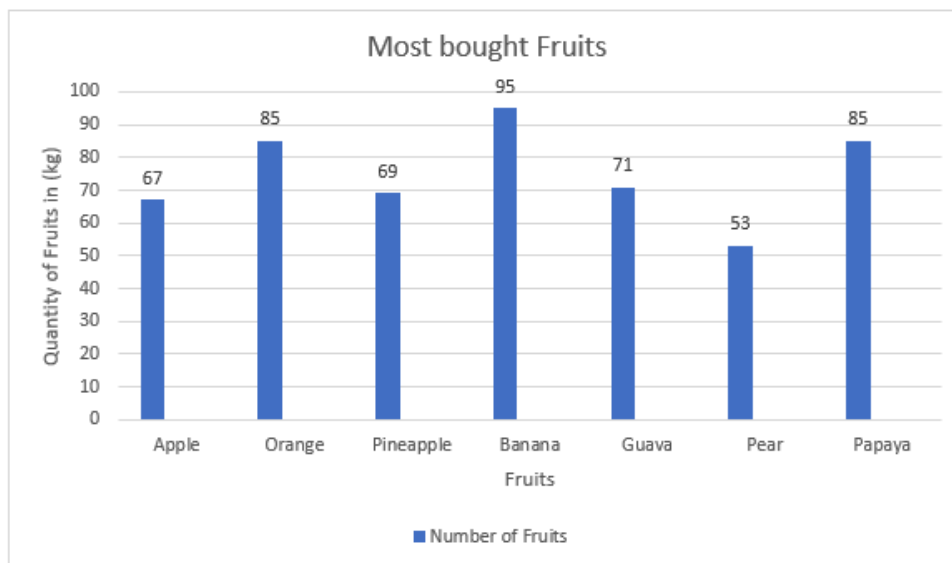
(II) No screen is a keyboard.

- Ans**
- ✓ 1. Neither conclusion (I) nor (II) follows
 - ✗ 2. Both conclusions (I) and (II) follow
 - ✗ 3. Only conclusion (I) follows
 - ✗ 4. Only conclusion (II) follows

Q.23 Which of the following represents voltage?

- Ans**
- ✗ 1. Work done \times Charge
 - ✗ 2. Work done \times Charge \times Time
 - ✗ 3. $\frac{\text{Work done}}{\text{Current} \times \text{Charge}}$
 - ✓ 4. $\frac{\text{Work done}}{\text{Current} \times \text{Time}}$

Q.24 Study the following bar graph and answer the question below.



What is the average weight of fruits bought?

- Ans**
- ✗ 1. 57 kg
 - ✗ 2. 85 kg
 - ✓ 3. 75 kg
 - ✗ 4. 80 kg

Q.25 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

52, 34, 69, 56, 86, 78, 103, ?

- Ans**
- ☐ 1. 94
 - ☐ 2. 120
 - ☐ 3. 108
 - ☒ 4. 100

Q.26 Which of the following is a unicellular ciliary organism?

- Ans**
- ☒ 1. Paramecium
 - ☐ 2. Ticks
 - ☐ 3. Leeches
 - ☐ 4. Amoeba

Q.27 If the surface area is increased, the rate of evaporation is:

- Ans**
- ☐ 1. First increases then decreases
 - ☒ 2. increased
 - ☐ 3. constant
 - ☐ 4. decreased

Q.28 The present age of a teacher is $1\frac{1}{2}$ times the sum of the present ages of his two students. Six years hence, the ratio of his age to the sum of the ages of both the students will be 6 : 5. The present age of the teacher is:

- Ans**
- ☒ 1. 42 years
 - ☐ 2. 45 years
 - ☐ 3. 50 years
 - ☐ 4. 36 years

Q.29 Which of the following is a saturated carbon compound?

- Ans**
- ☐ 1. Alkyne
 - ☐ 2. Ethylene
 - ☐ 3. Alkene
 - ☒ 4. Alkane

Q.30 Which of the following pairs of the name reaction and its example is/are correctly matched?

- (a) Saponification: The reaction of ethanol with conc. H_2SO_4 to form ethene.
(b) Esterification: The reaction of ethanoic acid with ethanol in the presence of acid catalyst to form ester.
(c) Dehydration: The reaction of esters with sodium hydroxide to form sodium salt of carboxylic acid.

- Ans**
- ☐ 1. (a), (b) and (c) are correct.
 - ☐ 2. Only (a) is correct.
 - ☒ 3. Only (b) is correct.
 - ☐ 4. Only (c) is correct.

Q.31 In a row of 51 students, facing north, Tinu is 24th from the left end. If Shivangi is 11th to the right of Tinu, what is Shivangi's position from the right end of the row?

- Ans**
- ☐ 1. 18th
 - ☐ 2. 16th
 - ☐ 3. 15th
 - ☒ 4. 17th

Q.32 The HCF and LCM of two numbers are 6 and 1824, respectively. If one number is 96, then the other number is:

- Ans**
- ☐ 1. 112
 - ☒ 2. 114
 - ☐ 3. 216
 - ☐ 4. 192

Q.33 Copper is more reactive than which of the following elements?

- Ans**
- ☐ 1. Calcium
 - ☒ 2. Silver
 - ☐ 3. Potassium
 - ☐ 4. Sodium

Q.34 The highest common factor of any two distinct prime numbers is:

- Ans**
- ☐ 1. 0
 - ☐ 2. 3
 - ☒ 3. 1
 - ☐ 4. 2

Q.35 Two trains of length 120 m and 280 m are running towards each other on parallel lines at 42 km/h and 30 km/h, respectively. In how much time will they be clear of each other from the moment they meet?

- Ans**
- ☐ 1. 21 sec
 - ☐ 2. 25 sec
 - ☒ 3. 20 sec
 - ☐ 4. 10 sec

Q.36 If the area of an equilateral triangle is $25\sqrt{3}$ sq cm, then perimeter of the triangle is:

- Ans**
- ☐ 1. 10 cm
 - ☐ 2. 12 cm
 - ☒ 3. 30 cm
 - ☐ 4. 24 cm

Q.37 Biodegradable material are broken down into simpler material by the action of which of the following?

- Ans**
- ☐ 1. Sunlight
 - ☐ 2. Virus
 - ☒ 3. Bacteria
 - ☐ 4. Wind

Q.38 In a certain code language,
'P + Q' means 'P is the son of Q',
'P - Q' means 'P is the husband of Q',
'P x Q' means 'P is the daughter of Q' and
'P ÷ Q' means 'P is the wife of Q'.
How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
- ☐ 1. Son
 - ☐ 2. Brother
 - ☒ 3. Daughter's son
 - ☐ 4. Son's son

Q.39 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

16, 53

21, 68

- Ans**
- ☐ 1. 25, 70
 - ☐ 2. 28, 84
 - ☒ 3. 19, 62
 - ☐ 4. 12, 31

Q.40 The sum of all the prime numbers between 51 and 100 is:

- Ans**
- ☐ 1. 724
 - ☒ 2. 732
 - ☐ 3. 683
 - ☐ 4. 687

Q.41 Which of the following Indian languages were given the status of classical languages of India in October 2024?

- Ans**
- ☐ 1. Malayalam, Odia, Prakrit, Assamese and Bengali
 - ☐ 2. Marathi, Odia, Prakrit, Assamese and Bengali
 - ☒ 3. Marathi, Pali, Prakrit, Assamese and Bengali
 - ☐ 4. Marathi, Malayalam, Prakrit, Assamese and Bengali

Q.42 The wickets taken by a bowler in 10 cricket matches are 2, 6, 4, 5, 0, 3, 1, 3, 2, 3. The median of the data is:

- Ans**
- ☒ 1. 3
 - ☐ 2. 0
 - ☐ 3. 1
 - ☐ 4. 2

Q.43 Ram applied the brakes to his cycle and an acceleration of 2 m s^{-2} is produced in the opposite direction to the motion. If the cycle takes 10 s to stop after the application of brakes, calculate the distance it travels during this time.

- Ans**
- ☐ 1. 50 m
 - ☐ 2. 150 m
 - ☐ 3. 200 m
 - ☒ 4. 100 m

Q.44 In males, if the _____ is surgically cut, sperm transfer will be prevented.

- Ans**
- ☐ 1. prostate gland
 - ☐ 2. fallopian tube
 - ☒ 3. vas deferens
 - ☐ 4. seminal vesicle

Q.45 A man has invested ₹75,000 at a rate of $7\frac{1}{2}\%$ per annum simple interest for 6 years. Find the amount that he will receive after 6 years.

- Ans**
- ☒ 1. ₹1,08,750
 - ☐ 2. ₹75,000
 - ☐ 3. ₹69,600
 - ☐ 4. ₹1,12,500

Q.46 There are two sections A and B of a class, consisting of 36 and 44 students, respectively. If the average weight of students of section A is 40 kg and that of section B is 35 kg, find the average weight of the whole class.

- Ans**
- ☐ 1. 36.75 kg
 - ☐ 2. 37.75 kg
 - ☐ 3. 36.25 kg
 - ☒ 4. 37.25 kg

Q.47 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$44 \text{ A } 4 \text{ C } 12 \text{ B } 2 \text{ D } 1 = ?$$

- Ans**
- ☐ 1. 32
 - ☐ 2. 33
 - ☐ 3. 31
 - ☒ 4. 34

Q.48 What will come in the place of '?' in the following equation, if '+' and '×' are interchanged?

$$13 + 11 \div 32 \times 4 - 10 = ?$$

- Ans**
- ☐ 1. 94
 - ☐ 2. 85
 - ☐ 3. 90
 - ☒ 4. 91

Q.49 Suresh spends 30% of his income on petrol, $\frac{1}{4}$ of the remaining income on house rent, and the balance on food. If he spends ₹300 on petrol, then what is his expenditure on house rent?

- Ans**
- ☐ 1. ₹675
 - ☒ 2. ₹175
 - ☐ 3. ₹525
 - ☐ 4. ₹1,000

Q.50 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

NPR, MOQ, LNP, KMO, ?

- Ans**
- ☐ 1. NJL
 - ☐ 2. JNL
 - ☒ 3. JLN
 - ☐ 4. NLJ

Q.51 The most scattered colour of the sun light when it enters the earth's atmosphere is _____.

- Ans**
- ☒ 1. blue
 - ☐ 2. red
 - ☐ 3. pink
 - ☐ 4. green

Q.52 D, E, F, G, L, M and N are sitting around a circular table facing the centre. N sits third to the left of M. L sits second to the left of G. M is an immediate neighbour of both E and L. D is not an immediate neighbour of N. How many people sit between F and L when counted from the right of F?

- Ans**
- ☐ 1. One
 - ☒ 2. Two
 - ☐ 3. Four
 - ☐ 4. Three

Q.53 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 3 Ω 2 * £ 1 + & & % 4 6 @ 8 \$ 7 5 9 # 1 @ 5 (Right)

If all the symbols are dropped from the series, which of the following will be seventh from the left?

- Ans**
- ☐ 1. 6
 - ☐ 2. 4
 - ☐ 3. 8
 - ☒ 4. 7

Q.54 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. TQ – OG
 - ☐ 2. ZW – UM
 - ☒ 3. GK – PW
 - ☐ 4. BY – WO

Q.55 Which of the following states of matter is/are highly compressible?

- Ans**
- ☐ 1. Both solid state and liquid state
 - ☐ 2. The solid state
 - ☒ 3. The gaseous state
 - ☐ 4. The liquid state

- Q.56** Which of the following statements is/are correct related to respiration?
- (i) Pyruvate is converted into ethanol and carbon dioxide in yeast during fermentation.
- (ii) The break-down of pyruvate using oxygen takes place in chloroplast.
- (iii) In muscle cells, pyruvate is converted into lactic acid.
- Ans** ☐ 1. (i), (ii) and (iii)
- ☐ 2. Only (i)
- ☒ 3. Only (i) and (iii)
- ☐ 4. Only (i) and (ii)

Q.57 Which state's Governor launched the book titled 'Sri Rama in Tamilagam – An Inseparable Bond' in September 2024?

- Ans** ☐ 1. Karnataka
- ☒ 2. Tamil Nadu
- ☐ 3. Telangana
- ☐ 4. Kerala

Q.58 Complete the given statement by selecting the correct option.

Isobars have different atomic numbers but the _____.

- Ans** ☐ 1. same number of electrons
- ☒ 2. same atomic mass
- ☐ 3. same number of protons
- ☐ 4. different atomic mass

Q.59 Which of the following was a significant outcome of the informal meeting between Xi Jinping and Narendra Modi at the 2023 BRICS summit?

- Ans** ☐ 1. Agreement on joint military patrols
- ☐ 2. A decision to increase trade between the two countries
- ☒ 3. A commitment to de-escalate tensions along the contested border
- ☐ 4. A pledge to resolve territorial disputes through war

Q.60 If each vowel in the word SHOWING is changed to the letter immediately preceding it in the English alphabetical order and each consonant is changed to the letter immediately following it in the English alphabetical order, then how many letters in the original word will also appear in the group of letters thus formed?

- Ans** ☐ 1. 2
- ☐ 2. 1
- ☒ 3. 4
- ☐ 4. 3

Q.61 Rahul can do a piece of work in 20 days whereas Rohan can do the same work in 30 days. Both started the work together and worked for 6 days with full efficiency, and in the next 6 days with half of their efficiencies. In how many days will the remaining work be finished if both work with their full efficiencies for the remaining period?

- Ans** ☐ 1. 7 days
- ☐ 2. 5 days
- ☐ 3. 10 days
- ☒ 4. 3 days

Q.62 Simplify the following expression:

$$\frac{\sin \theta}{1 + \cos \theta} + \frac{1 + \cos \theta}{\sin \theta}$$

- Ans
- ☐ 1. $2 \cos \theta$
 - ☒ 2. $2 \operatorname{cosec} \theta$
 - ☐ 3. $2 \sec \theta$
 - ☐ 4. $2 \sin \theta$

Q.63 What is the unit of universal gravitational constant (G)?

- Ans
- ☐ 1. $\text{N m}^2 \text{ kg}^{-1}$
 - ☒ 2. $\text{N m}^2 \text{ kg}^{-2}$
 - ☐ 3. N m^2
 - ☐ 4. $\text{N m}^2 \text{ kg}$

Q.64 Where was the first leg of the 2024 Khelo India Winter Games held?

- Ans
- ☐ 1. Himachal Pradesh
 - ☒ 2. Ladakh
 - ☐ 3. Uttarakhand
 - ☐ 4. Jammu and Kashmir

Q.65 Bihar state has what percentage of poor population of the country as per Economic Survey of India 2023-24?

- Ans
- ☐ 1. Between 11% and 15%
 - ☐ 2. Between 26% and 30%
 - ☐ 3. Between 5% and 10%
 - ☒ 4. Between 16% and 25%

Q.66 The apparent position of a star keeps on changing slightly because:

- Ans
- ☐ 1. Stars are very close to the surface of the earth.
 - ☐ 2. Different layers of the atmosphere are of same density
 - ☒ 3. Different layers of the atmosphere have different density
 - ☐ 4. Star doesn't have it's own light

Q.67 Seven people, A, B, E, F, P, Q and R are sitting in a row, facing north. Only B sits to the left of A. Only four people sit between B and Q. Only E sits between R and P and R is not an immediate neighbour of Q. Who sits at the extreme right of the row?

- Ans
- ☐ 1. R
 - ☐ 2. P
 - ☐ 3. E
 - ☒ 4. F

Q.68 A pipe can fill a tank in 8 hours. Another pipe can empty the filled tank in 72 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans**
- ☐ 1. 6
 - ☐ 2. 9
 - ☐ 3. 12
 - ☒ 4. 3

Q.69 In a certain code language, 'POKED' is coded as '85263' and 'TOKED' is coded as '36584'. What is the code for 'T' in the given code language?

- Ans**
- ☐ 1. 3
 - ☐ 2. 5
 - ☐ 3. 8
 - ☒ 4. 4

Q.70 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

PRT, QSU, RTV, SUW, ?

- Ans**
- ☐ 1. VXT
 - ☐ 2. VTX
 - ☐ 3. TXV
 - ☒ 4. TVX

Q.71 Spinal cord is made up of which tissue?

- Ans**
- ☒ 1. Nervous tissue
 - ☐ 2. Connective tissue
 - ☐ 3. Epithelial tissue
 - ☐ 4. Muscular tissue

Q.72 Which of the following statements is/are correct?

1. Some metals can be beaten into thin sheets. This property is called malleability.
2. Metals can be drawn into thin wires.
3. Metals are good conductors of heat.

- Ans**
- ☐ 1. Only 1
 - ☐ 2. Only 1 and 2
 - ☒ 3. 1, 2 and 3
 - ☐ 4. Only 1 and 3

Q.73 The planets go around the sun due to _____ force.

- Ans**
- ☐ 1. Magnetic
 - ☐ 2. Frictional
 - ☐ 3. Electrical
 - ☒ 4. Gravitational

Q.74 Which institute hosted International Chess Federation (FIDE)-rated Rapid Chess Tournament in March 2024?

- Ans**
- ✔ 1. IIT Madaras
 - ✗ 2. IIT Hyderabad
 - ✗ 3. IIT Bombay
 - ✗ 4. IIT Delhi

Q.75 Gaurav starts from point A and drives 3 km South. He then takes a left turn and drives 2 km. He takes another left turn and drives 2 km. He then takes a right turn and drives 3 km. He takes a final left turn and drives 1 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ✗ 1. 3 km West
 - ✗ 2. 4 km South
 - ✗ 3. 2 km South
 - ✔ 4. 5 km West

Q.76 What did Rutherford's gold foil experiment conclude about the structure of an atom?

- Ans**
- ✗ 1. Atoms are composed of protons, neutrons, and electrons in a random arrangement.
 - ✗ 2. Atoms have a uniform positive charge spread throughout their volume.
 - ✔ 3. Atoms consist of a positively charged nucleus and negatively charged electrons.
 - ✗ 4. Atoms are indivisible and are solid spheres.

Q.77 If the magnetic field due to a single turn circular coil is B. Then the value of magnetic field due a circular coil with 10 turns will be:
(Other parameters are to be kept same)

- Ans**
- ✔ 1. 10B
 - ✗ 2. 5B
 - ✗ 3. 100B
 - ✗ 4. B

Q.78 In a certain code language, 'REST' is coded as '4529' and 'HERS' is coded as '5279'. What is the code for 'H' in the given code language?

- Ans**
- ✔ 1. 7
 - ✗ 2. 2
 - ✗ 3. 5
 - ✗ 4. 9

Q.79 By selling an article for ₹19.50, a dealer makes a profit of 30%. By how much should he increase his selling price so as to make a profit of 40%?

- Ans**
- ✗ 1. ₹3
 - ✗ 2. ₹1.75
 - ✗ 3. ₹2
 - ✔ 4. ₹1.50

Q.80 If $x + y = 20$ and $xy = 84$, find the value of $x^2 + y^2$.

- Ans**
- ✗ 1. 264
 - ✗ 2. 212
 - ✔ 3. 232
 - ✗ 4. 244

Q.81 Which of the following statements is/are correct?

Statements:

I) A current carrying coil produces magnetic field.

II) A current carrying solenoid behaves like a bar magnet.

Ans ☒ 1. Neither Statement I nor II

☒ 2. Statement I only

☒ 3. Statement II only

☒ 4. Both Statements I and II

Q.82 If $1.6 : 0.6 :: 0.6 : x$, find the value of x.

Ans ☒ 1. 0.275

☒ 2. 0.225

☒ 3. 0.25

☒ 4. 0.98

Q.83 The male organ, the penis, helps in transfer of:

Ans ☒ 1. sperms

☒ 2. zygotes

☒ 3. eggs

☒ 4. polar bodies

Q.84 Which of the following is a property of isomers in organic chemistry?

Ans ☒ 1. They have different molecular formulas but the same structural arrangement.

☒ 2. They have no carbon atoms in their structure.

☒ 3. They have the same molecular formula but different structural arrangements.

☒ 4. They have the same molecular formula and the same structural arrangement.

Q.85 The sum of the present ages of Sarala and Kishore is 26 years. If 3 years ago, Kishore was $\frac{3}{2}$ times as old as Sarala, then the present age of Sarala is:

Ans ☒ 1. 10 years

☒ 2. 9 years

☒ 3. 12 years

☒ 4. 11 years

Q.86 If the magnification of any mirror is +2.3, which type of mirror is it?

Ans ☒ 1. Convex mirror

☒ 2. Plane mirror

☒ 3. Concave mirror

☒ 4. Planoconvex mirror

Q.87 Which of the following glands secretes trypsin enzyme?

- Ans
- ☐ 1. Gastric gland
 - ☐ 2. Salivary gland
 - ☒ 3. Pancreas
 - ☐ 4. Liver

Q.88 Which of the following statements is/are NOT correct?

- (i) Resistance of a conductor is independent of temperature.
- (ii) The more the voltage across a resistor, the more is the current flowing through it.
- (iii) The S.I unit of resistance is ohm.

- Ans
- ☐ 1. Both (ii) and (iii)
 - ☒ 2. Only (i)
 - ☐ 3. Only (ii)
 - ☐ 4. Both (i) and (ii)

Q.89 Conventionally, the germ-cell containing the stored food is called the:

- Ans
- ☐ 1. immature egg
 - ☒ 2. female gamete
 - ☐ 3. motile gamete
 - ☐ 4. male gamete

Q.90 The value of M, satisfying $2^3 \times 3^3 \times 6^3 = 6^M$ is:

- Ans
- ☒ 1. 6
 - ☐ 2. 8
 - ☐ 3. 4
 - ☐ 4. 2

Q.91 Out of the following, which is a unit used for measuring the amount of work done on a body:

- Ans
- ☐ 1. Newton
 - ☐ 2. Meter
 - ☒ 3. Joule
 - ☐ 4. Kilogram

Q.92 The Chlor-alkali process is used for the formation of which of the following?

- Ans
- ☐ 1. Sodium carbonate
 - ☐ 2. Sodium chloride
 - ☒ 3. Sodium hydroxide
 - ☐ 4. Sodium bicarbonate

Q.93 The position(s) of how many letters will remain unchanged if each of the letters in the word DRAWING is arranged in the English alphabetical order ?

- Ans**
- ☒ 1. 0
 - ☐ 2. 2
 - ☐ 3. 3
 - ☐ 4. 1

Q.94 Which of the following scientists made the following statement?
“All cells arise from preexisting cells.”

- Ans**
- ☒ 1. Rudolf Virchow
 - ☐ 2. Robert Brown
 - ☐ 3. Purkinje
 - ☐ 4. Robert Hooke

Q.95 Which of the following cell organelles have their own DNA and ribosomes?

- Ans**
- ☐ 1. Golgi apparatus
 - ☐ 2. Lysosomes
 - ☐ 3. Endoplasmic reticulum
 - ☒ 4. Mitochondria

Q.96 What is the key objective of the Swachh Diwali Shubh Diwali campaign 2024?

- Ans**
- ☐ 1. Celebrating Diwali with maximum decorations
 - ☒ 2. Promoting cleanliness and sustainability during Diwali
 - ☐ 3. Increasing urban industrialisation
 - ☐ 4. Enhancing rural electrification

Q.97 Match the UNESCO World Heritage Sites of India (declared between 2021 and 2024) in List I with their location states in List II and select the correct answer.


List I (UNESCO World Heritage Sites) List II (States)
(1) Kakatiya Rudreshwara (Ramappa) Temple (A) Telangana
(2) Santiniketan, India (B) West Bengal
(3) Sacred Ensemble of Hoysalas (C) Karnataka
(4) Charaideo Moidam (D) Assam


- Ans**
- ☐ 1. 1 - A, 2 - C, 3 - B, 4 - D
 - ☐ 2. 1 - D, 2 - B, 3 - C, 4 - A
 - ☒ 3. 1 - A, 2 - B, 3 - C, 4 - D
 - ☐ 4. 1 - D, 2 - C, 3 - B, 4 - A


Q.98 The marked price of an item was ₹2,000, but the shopkeeper offered successive discounts of 20% and 15% on its sale. How much did he finally sell the item for?


- Ans**
- ☒ 1. ₹1,360
 - ☐ 2. ₹1,380
 - ☐ 3. ₹1,260
 - ☐ 4. ₹1,280

Q.99 Identify the nature of the functional group present in butanal.


Ans  1. Aldehydes


 2. Alcohol


 3. Alkene


 4. Ketone

Q.100 Where does the oxygen-rich blood from the lungs come into the heart?

Ans  1. the pulmonary arteries

 2. the left ventricle

 3. the pulmonary veins

 4. the left atrium

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	27/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

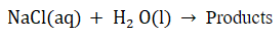
2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 JGOK is related to HEMI in a certain way based on the English alphabetical order. In the same way, TQYU is related to ROWS. To which of the following options is NKSO related, following the same logic?

- Ans**
- ☒ 1. LIMQ
 - ☒ 2. LIQM
 - ☒ 3. ILMQ
 - ☒ 4. ILQM

Q.2 Which products are formed in the chlor-alkali process when electricity is passed through an aqueous sodium chloride solution?



- Ans**
- ☒ 1. $\text{NaCl} + \text{H}_2$
 - ☒ 2. $\text{NaOH} + \text{H}_2 + \text{Cl}_2$
 - ☒ 3. $\text{H}_2 + \text{O}_2$
 - ☒ 4. $\text{NaHCO}_3 + \text{Cl}_2$

Q.3 Find the compound interest on ₹13,000 in 2 years at 4% p.a., interest compounded yearly.

- Ans**
- ☒ 1. ₹1,060.80
 - ☒ 2. ₹996.50
 - ☒ 3. ₹997.60
 - ☒ 4. ₹1,086.60

Q.4 Select the INCORRECT pair.

- Ans**
- ☒ 1. Plastic glass – non-biodegradable
 - ☒ 2. Vegetable – biodegradable
 - ☒ 3. Paper cup – biodegradable
 - ☒ 4. Kulhad – non-biodegradable

Q.5 A combination of two lenses of power +2.0 D and -0.25 D is equivalent to a single lens of power:

- Ans**
- ☒ 1. +2.25 D
 - ☒ 2. +1.75 D
 - ☒ 3. +1.25 D
 - ☒ 4. -3.5 D

Q.6 Which statement is NOT true for magnetic field lines?

- Ans**
- ☒ 1. The relative strength of the magnetic field is shown by the degree of closeness of the field lines.
 - ☒ 2. No two field lines are found to cross each other.
 - ☒ 3. Magnetic field lines are not closed curves.
 - ☒ 4. Inside the magnet, the direction of field lines is from its south pole to its north pole.

Q.7 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only two people sit between M and N when counted from the right of M. Only two people sit between N and E when counted from the right of N. Only three people sit between M and F when counted from the right of M. D sits to the immediate left of G. Who sits third to the left of L?

- Ans**
- ☒ 1. N
 - ☒ 2. D
 - ☒ 3. M
 - ☒ 4. G

Q.8 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) & 3 Ω 9 # 2 & % 4 6 @ 8 S 7 1 * £ 5 (Right)

If all the symbols are dropped from the series, which of the following will be seventh from the right?

- Ans**
- ☒ 1. 2
 - ☒ 2. 1
 - ☒ 3. 7
 - ☒ 4. 9

Q.9 The average temperature for Monday, Tuesday, Wednesday, and Thursday was 48°C, and for Tuesday, Wednesday, Thursday, and Friday was 46°C. If the temperature on Monday was 42°C, find the temperature on Friday.

- Ans**
- ☒ 1. 34°C
 - ☒ 2. 36°C
 - ☒ 3. 38°C
 - ☒ 4. 40°C

Q.10 A change of state directly from gas to solid without changing into liquid state is called:

- Ans**
- ☒ 1. deposition
 - ☒ 2. fusion
 - ☒ 3. solidification
 - ☒ 4. vaporisation

Q.11 In an election between two candidates, one got 55% of the total valid votes, and 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got was:

- Ans**
- ☒ 1. 2600
 - ☒ 2. 2700
 - ☒ 3. 3000
 - ☒ 4. 3300

Q.12 Vacuoles are present mainly of large size in _____.

- Ans**
- ☒ 1. both plant cells and animal cells
 - ☒ 2. plant cells
 - ☒ 3. animal cells
 - ☒ 4. bacteria

Q.13 Which team won the gold medal at 2024 Badminton Asia Team Championships in February 2024?

- Ans**
- ☒ 1. Thailand
 - ☒ 2. India
 - ☒ 3. Japan
 - ☒ 4. Malaysia

Q.14 In a row of 45 students, facing north, Kevin is 16th from the right end. If Luther is 10th to the left of Kevin, what is Luther's position from the left end of the row?

- Ans**
- ☒ 1. 20th
 - ☒ 2. 22nd
 - ☒ 3. 21st
 - ☒ 4. 23rd

Q.15 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$85 A 17 C 82 D 11 B 2 = ?$$

- Ans**
- ☒ 1. 66
 - ☒ 2. 65
 - ☒ 3. 67
 - ☒ 4. 68

Q.16 Which of the following metals does NOT react with cold water?

- Ans**
- ☒ 1. Magnesium
 - ☒ 2. Sodium
 - ☒ 3. Calcium
 - ☒ 4. Potassium

Q.17 A worker lifts a rice bag of 10 kg from the ground and puts it on the truck 2 m above the ground. Calculate the work done by him on the rice bag. (Given, $g = 10 \text{ m s}^{-2}$)

- Ans**
- ☒ 1. 100 J
 - ☒ 2. 59 J
 - ☒ 3. 200 J
 - ☒ 4. 153 J

Q.18 The mode of the observations 20, 23, 25, 30, 20, 31, 32, 35, 20, 41, 42, 43, 20 and 20 is:

- Ans**
- ☒ 1. 30
 - ☒ 2. 20
 - ☒ 3. 40
 - ☒ 4. 35

Q.19 Select the correct option related to the function of auxin in plants.

- Ans**
- ☒ 1. Helps the cells to grow longer
 - ☐ 2. Induce flowering
 - ☐ 3. Increases stem width
 - ☐ 4. Make plants insect resistant

Q.20 Which of the following statements is/are correct regarding the atomic number of an element?

Statement I: The atomic number of an element represents the number of protons present in the nucleus of an atom.

Statement II: The atomic number of an element represents the number of neutrons present in the nucleus of an atom.

- Ans**
- ☒ 1. Only statement I is correct.
 - ☐ 2. Only statement II is correct.
 - ☐ 3. Both statements I and II are correct.
 - ☐ 4. Neither statement I nor II is correct.

Q.21 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some books are trees.

All trees are mats.

All mats are ponds.

Conclusions:

(I) Some ponds are books.

(II) Some mats are books.

- Ans**
- ☐ 1. Neither conclusion (I) nor (II) follows.
 - ☒ 2. Both conclusions (I) and (II) follow.
 - ☐ 3. Only conclusion (I) follows.
 - ☐ 4. Only conclusion (II) follows.

Q.22 The founder and chairman of which of the following companies topped the EdelGive-Hurun India Philanthropy List 2024?

- Ans**
- ☐ 1. Reliance Industries
 - ☐ 2. WIPRO
 - ☒ 3. HCL Technologies
 - ☐ 4. TCS

Q.23 Which of the following statements is correct about the ozone?

- Ans**
- ☐ 1. It is formed by combining only two atoms of oxygen.
 - ☐ 2. It causes blood cancer.
 - ☒ 3. Decrease in the amount of ozone in the atmosphere is due to chlorofluorocarbons (CFC).
 - ☐ 4. It is not poisonous.

Q.24 Which animal was declared the official mascot of 2024 Khelo India Winter Games?

- Ans
- ☐ 1. Yak
 - ☐ 2. Snow bear
 - ☐ 3. Sheep
 - ☒ 4. Snow leopard

Q.25 In a certain code language,

$P + Q$ means 'P is the father of Q',

$P - Q$ means 'P is the son of Q',

$P \times Q$ means 'P is the wife of Q' and

$P \div Q$ means 'P is the brother of Q'.

Based on the above, how is K related to R if ' $M \div N \times O + K \times L - R$ '?

- Ans
- ☐ 1. Daughter
 - ☒ 2. Son's wife
 - ☐ 3. Mother
 - ☐ 4. Son

Q.26 Which of the following metals reacts with very dilute nitric acid to evolve hydrogen gas?

- Ans
- ☐ 1. Zn
 - ☒ 2. Mn
 - ☐ 3. Fe
 - ☐ 4. Al

Q.27 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 21-times of the same work in _____(days).

- Ans
- ☐ 1. 4
 - ☒ 2. 84
 - ☐ 3. 5
 - ☐ 4. 85

Q.28 Use of regenerative cells in the process of budding is present in:

- Ans
- ☐ 1. Spirogyra
 - ☐ 2. Amoeba
 - ☒ 3. Hydra
 - ☐ 4. Planaria

Q.29 A girl pushes a trolley with a constant force F through a distance s, the work done will be:

- Ans
- ☐ 1. $F + s$
 - ☐ 2. F/s
 - ☐ 3. $F - s$
 - ☒ 4. $F \times s$

Q.30 The inverse ratio of 1 : 2 : 3 is:

- Ans**
- ☐ 1. 2 : 3 : 6
 - ☐ 2. 3 : 2 : 1
 - ☒ 3. 6 : 3 : 2
 - ☐ 4. 2 : 1 : 3

Q.31 Which of the following processes involves the transfer of a source of energy (food) from outside the body of an organism to inside?

- Ans**
- ☒ 1. Nutrition
 - ☐ 2. Metabolism
 - ☐ 3. Transportation
 - ☐ 4. Translocation

Q.32 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 163 :: 74 : Y

- Ans**
- ☒ 1. X = 81, Y = 149
 - ☐ 2. X = 93, Y = 156
 - ☐ 3. X = 86, Y = 129
 - ☐ 4. X = 79, Y = 145

Q.33 Who, along with Parthiv Dhar, won the Best Book on Cinema award for 'Kishore Kumar: The Ultimate Biography', as announced by the Ministry of Information & Broadcasting in October 2024?

- Ans**
- ☐ 1. Heena Choudhary
 - ☐ 2. Nayanjyoti Sarma
 - ☒ 3. Anirudha Bhattacharjee
 - ☐ 4. Sutapa Chakraborty





Q.34 Which of the following is produced when zinc oxide reacts with carbon?

- Ans**
- ☒ 1. Both Zn and CO
 - ☐ 2. Only CO
 - ☐ 3. Only Zn
 - ☐ 4. Zn and CO₂





Q.35 The kind of energy possessed by a moving body by virtue of its motion is _____.

- Ans**
- ☐ 1. electromagnetic energy
 - ☐ 2. potential energy
 - ☒ 3. kinetic energy
 - ☐ 4. nuclear energy





Q.36 The areas of three adjacent faces of a solid cuboid are 66 cm^2 , 192 cm^2 and 198 cm^2 . What is the volume (in cm^3) of the cuboid?

Ans  1. 1594
 2. 1584
 3. 1792
 4. 1782





Q.37 By selling 8 oranges for ₹40, a man loses 20%. How many should he sell for ₹30 to gain 20% in the transaction?

Ans  1. 4
 2. 5
 3. 2
 4. 3





Q.38 In the rear-view mirror of cars, people use which of the following?

Ans  1. Plano-convex lens
 2. Concave mirror
 3. Biconvex lens
 4. Convex mirror





Q.39 In a certain code language, 'PILED' is coded as '65428' and 'PEDAL' is coded as '57628'. What is the code for 'I' in the given code language?

Ans  1. 8
 2. 2
 3. 4
 4. 6





Q.40 The surface area of a sphere is same as the curved surface area of a right circular cylinder whose height and diameter are 12 cm each. The radius of the sphere is.

Ans  1. 6 cm
 2. 12 cm
 3. 8 cm
 4. 4 cm

Q.41 The weight of an object on the Moon is _____

Ans  1. greater than the weight on the earth
 2. less than the weight on the earth
 3. equal to the weight on the earth
 4. may be greater than or less than depending on the density of the object

Q.42 Town I is to the east of Town X. Town L is to the west of Town X. Town N is to the north of Town L. Town P is to the north-east of Town L. Town P is to the east of Town N. Town I is to the south-west of Town P. What is the position of Town P with respect to Town X?

Ans  1. West
 2. North-east
 3. South-west
 4. East

Q.43 If $x = 3^2 \times 2^3$, then $x^4 = ?$

- Ans
- ☐ 1. $3^8 \times 2^3$
 - ☐ 2. $3^6 \times 2^3$
 - ☐ 3. $3^6 \times 2^7$
 - ☒ 4. $3^8 \times 2^{12}$

Q.44 On November 9, 2024, which city recorded the highest Air Quality Index (AQI) among Punjab, Haryana, and Chandigarh?

- Ans
- ☐ 1. Sonipat
 - ☒ 2. Chandigarh
 - ☐ 3. Mandi Gobindgarh
 - ☐ 4. Bahadurgarh

Q.45 What digit must be assigned to k so that the 7-digit number 451k603 is exactly divisible by 9?

- Ans
- ☐ 1. 5
 - ☒ 2. 8
 - ☐ 3. 7
 - ☐ 4. 2

Q.46 Which of the following compounds is used in a soda-acid fire extinguisher?

- Ans
- ☐ 1. Ca(OH)_2
 - ☐ 2. Na_2CO_3
 - ☐ 3. H_2CO_3
 - ☒ 4. NaHCO_3

Q.47 Accumulation of which substance in our muscles during sudden activity causes cramps?

- Ans
- ☐ 1. Glucose
 - ☐ 2. Pyruvic acid
 - ☐ 3. Sucrose
 - ☒ 4. Lactic acid

Q.48 If $\tan \theta + \cot \theta = 13$, then find the value of $8 \tan^2 \theta + 8 \cot^2 \theta$.

- Ans
- ☒ 1. 1336
 - ☐ 2. 1372
 - ☐ 3. 169
 - ☐ 4. 167

Q.49 Which of the following is/are NOT a parasitic organism?

- Ans
- ☐ 1. Ticks
 - ☐ 2. Lice
 - ☒ 3. Amoeba
 - ☐ 4. Cuscuta

Q.50 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. IM-JL
 - ☒ 2. FJ-GI
 - ☒ 3. QU-RT
 - ☒ 4. LP-MQ

Q.51 What sum will earn a simple interest of ₹960 in 3 years at 16% per year rate of interest?

- Ans**
- ☒ 1. ₹1,800
 - ☒ 2. ₹2,000
 - ☒ 3. ₹2,200
 - ☒ 4. ₹1,600

Q.52 What is the colour of the flame when magnesium burns in air?

- Ans**
- ☒ 1. White
 - ☒ 2. Red
 - ☒ 3. Green
 - ☒ 4. Pink

Q.53 Evaluate the given expression.

$$(24 \div 3) \times 2$$

- Ans**
- ☒ 1. 16
 - ☒ 2. 4
 - ☒ 3. 18
 - ☒ 4. 12

Q.54 The value of $0.0488 \div 0.002 = ?$

- Ans**
- ☒ 1. 18.7
 - ☒ 2. 13.8
 - ☒ 3. 21.5
 - ☒ 4. 24.4

Q.55 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

RMK, UOL, XQM, ASN, ?

- Ans**
- ☒ 1. DUO
 - ☒ 2. DUP
 - ☒ 3. EUO
 - ☒ 4. DQO

Q.56 Which one of the following plant parts is NOT used for vegetative propagation?

- Ans**
- ☐ 1. Leaves
 - ☐ 2. Stem
 - ☒ 3. Seed
 - ☐ 4. Root

Q.57 If each vowel in the word MAJORITY is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order, then how many letters are common between the original word and the group of letters thus formed?

- Ans**
- ☐ 1. 3
 - ☒ 2. 2
 - ☐ 3. 4
 - ☐ 4. 1

Q.58 Which of the following equations is true, when two objects A and B of masses M and m are separated by a distance d, F is the force of attraction between them and G is the universal gravitational constant?

- Ans**
- ☒ 1. $F = G \frac{M \times m}{d^2}$
 - ☐ 2. $F = G \frac{M}{d^2}$
 - ☐ 3. $F = G \frac{M \times m}{d}$
 - ☐ 4. $F = G \frac{1}{d^2}$

Q.59 One year ago, the ratio of the ages of Sara and Dipti was 3 : 4, respectively. Four years hence, this ratio would become 4 : 5. The present age of Sara is:

- Ans**
- ☐ 1. 12 years
 - ☐ 2. 19 years
 - ☒ 3. 16 years
 - ☐ 4. 15 years

Q.60 A ball of mass 0.5 kg is moving with a uniform velocity of 6 m/s. The kinetic energy of the ball is:

- Ans**
- ☐ 1. 15 J
 - ☐ 2. 12 J
 - ☐ 3. 6 J
 - ☒ 4. 9 J

Q.61 Who took over as the new Director General (Acquisition) in the Defence Ministry in January 2024?

- Ans**
- ☐ 1. Rajeev Kumar
 - ☐ 2. Ramesh Chandra
 - ☒ 3. Samir Kumar Sinha
 - ☐ 4. Arun Kumar Sinha

- Q.62** The population of a town is 1,76,400. If it increases at the rate of 5% per annum, then what will be its population 2 years hence?
- Ans**
- ☐ 1. 1,94,572
 - ☐ 2. 1,94,621
 - ☐ 3. 1,93,636
 - ☒ 4. 1,94,481

- Q.63** Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - The movement of a person or people from one country, locality, place of residence to settle in another country, locality, place of residence is known as migration.

Reasons:

- I. Some person or people migrate in search of work or economic opportunities, to join family, or to study. Others migrate to escape conflict, persecution, terrorism, or human rights violations.
- II. Some person or people migrate in response to the adverse effects of climate change, natural disasters, or other environmental factors.

- Ans**
- ☐ 1. Only I is a possible reason.
 - ☐ 2. Only II is a possible reason.
 - ☐ 3. Neither I nor II is a possible reason.
 - ☒ 4. Both I and II are possible reasons.

- Q.64** Prime Minister Narendra Modi inaugurated PARAM Rudra Supercomputer at which of the following places in September 2024?

- Ans**
- ☐ 1. Bengaluru
 - ☐ 2. Chennai
 - ☐ 3. Hyderabad
 - ☒ 4. Kolkata

- Q.65** What is the position of the image formed by a concave mirror if the object is placed just beyond the centre of curvature of the mirror?

- Ans**
- ☐ 1. At infinity
 - ☐ 2. At the focus
 - ☒ 3. Between the centre of curvature and the focus point
 - ☐ 4. At the centre of curvature

- Q.66** In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 75 :: 29 : Y

- Ans**
- ☐ 1. X = 26, Y = 76
 - ☐ 2. X = 28, Y = 74
 - ☒ 3. X = 23, Y = 81
 - ☐ 4. X = 21, Y = 89

Q.67 What is the SI unit of momentum?

- Ans**
- ☐ 1. $\text{kg m}^{-1} \text{s}^{-1}$
 - ☐ 2. kg m s
 - ☒ 3. kg m s^{-1}
 - ☐ 4. kg m

Q.68 In ΔPQR , $\angle Q = \angle R$ and $QR = 12$ cm, $PR = 10$ cm and PS be the altitude, then the length of PS is:

- Ans**
- ☐ 1. 11 cm
 - ☐ 2. 3 cm
 - ☒ 3. 8 cm
 - ☐ 4. 10 cm

Q.69 Which of the following forts, India's nomination for the UNESCO World Heritage List for 2024-25, was the site of the coronation of Shivaji Maharaj?

- Ans**
- ☒ 1. Raigad Fort
 - ☐ 2. Karnala Fort
 - ☐ 3. Korigad Fort
 - ☐ 4. Mangi-Tungi Fort

Q.70 In a certain code language, 'ROSE' is coded as '4618' and 'SEAR' is coded as '6438'. What is the code for 'O' in the given code language?

- Ans**
- ☐ 1. 4
 - ☐ 2. 6
 - ☐ 3. 8
 - ☒ 4. 1

Q.71 The atomic mass of carbon-12 isotope is:

- Ans**
- ☒ 1. 12 u
 - ☐ 2. 6 u
 - ☐ 3. 16 u
 - ☐ 4. 14 u

Q.72 Which organ of the human body pumps blood?

- Ans**
- ☐ 1. Pancreas
 - ☒ 2. Heart
 - ☐ 3. Liver
 - ☐ 4. Stomach

Q.73 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. TP – OI
 - ☒ 2. KO – WA
 - ☐ 3. BX – WQ
 - ☐ 4. AW – VP

Q.74 The Finance Minister launched Nari Shakti branches of which bank to empower women entrepreneurs in November 2024?

- Ans**
- ☐ 1. HDFC Bank
 - ☐ 2. SBI
 - ☒ 3. Union Bank
 - ☐ 4. PNB

Q.75 Krishi Sakhi Convergence Programme (KSCP), under the Lakhpati Didi programme, was launched from which of the following places in June 2024 by Prime Minister Narendra Modi?

- Ans**
- ☒ 1. Varanasi
 - ☐ 2. Ahmedabad
 - ☐ 3. Lucknow
 - ☐ 4. Nagpur

Q.76 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 8 7 7 8 5 2 7 1 4 3 2 4 7 7 6 4 5 3 1 2 6 7 9 7 9 8 0 1 3 3 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 4
 - ☒ 2. 1
 - ☐ 3. 2
 - ☐ 4. 3

Q.77 A cube-shaped metal box of 1 kg mass is kept on the horizontal surface of a table. Assuming acceleration due to gravity is 10 m/sec^2 , the thrust acting on the table surface is _____.

- Ans**
- ☐ 1. 1 N
 - ☐ 2. 1000 N
 - ☒ 3. 10 N
 - ☐ 4. 100 N

Q.78 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

78, 124, 152, 198, 226, 272, ?

- Ans**
- ☒ 1. 300
 - ☐ 2. 286
 - ☐ 3. 320
 - ☐ 4. 294

Q.79 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All bulbs are lights.

Some lights are fans.

Conclusions:

(I) Some fans are bulbs.

(II) All bulbs are fans.

- Ans**
- ☐ 1. Only conclusion (I) follows
 - ☐ 2. Only conclusion (II) follows
 - ☒ 3. Neither conclusion (I) nor (II) follows
 - ☐ 4. Both conclusions (I) and (II) follow

Q.80 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some slippers are shoes.

Some shoes are belts.

Conclusions:

(I) Some belts are slippers.

(II) No belt is a slipper.

- Ans**
- ☐ 1. Only conclusion (II) follows
 - ☒ 2. Neither conclusion (I) nor (II) follows
 - ☐ 3. Both conclusions (I) and (II) follow
 - ☐ 4. Only conclusion (I) follows

Q.81 The age of a mother six years ago was six times the age of her daughter, at that time. Three years hence, the mother will be thrice as old as her daughter. What is the difference between the present age of the mother and her daughter?

- Ans**
- ☐ 1. 24 years
 - ☐ 2. 42 years
 - ☐ 3. 36 years
 - ☒ 4. 30 years

Q.82 Which of the following is INCORRECTLY matched related to the excretory system of humans?

- Ans**
- ☐ 1. Ureter - a pair
 - ☐ 2. Kidney - a pair
 - ☐ 3. Urinary bladder - unpaired
 - ☒ 4. Urethra - a pair

Q.83 A series of compounds in which the same functional group substitutes for hydrogen in a carbon chain is called _____.

- Ans**
- ☐ 1. isochores
 - ☐ 2. isobars
 - ☒ 3. homologous series
 - ☐ 4. isomers

Q.84 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

SALT - ALST - TLAS

HOLE - OLHE - ELOH

- Ans**
- ☐ 1. GREW - GERW - WERG
 - ☒ 2. VIBE - IBVE - EBIV
 - ☐ 3. FING - INFG - INGF
 - ☐ 4. ROAM - ORAM - MOAR

Q.85 If $3 : 6 :: 6 : a$, what is the value of a ?

- Ans**
- ☐ 1. 16
 - ☐ 2. 36
 - ☒ 3. 12
 - ☐ 4. 18

Q.86 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. Only two people sit to the left of B. Only three people sit between B and R. P sits second to the right of B. Only two people sit between P and A. F sits at some place to the right of E but at some place to the left of Q. How many people sit to the right of F?

- Ans**
- ☐ 1. Two
 - ☒ 2. Three
 - ☐ 3. Four
 - ☐ 4. One

Q.87 The value of $\left(-\frac{5}{3}\right) \times \left(\frac{9}{25}\right) + \left(\frac{1}{5} - 3\right) = ?$

- Ans**
- ☐ 1. $\frac{9}{5}$
 - ☒ 2. $-\frac{17}{5}$
 - ☐ 3. 0
 - ☐ 4. $-\frac{4}{5}$

Q.88 Select the term which is not an identity.

- Ans**
- ☒ 1. $(a + b)^2 = a^2 + b^2$
 - ☐ 2. $(a + b)^2 = a^2 + b^2 + 2ab$
 - ☐ 3. $(a + 1)(a + 2) = a^2 + 3a + 2$
 - ☐ 4. $(a - b)^2 = a^2 + b^2 - 2ab$

Q.89 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '—', what will be come in place of the question mark '?' in the following equation?

(14 B 4) A 2 C (15 A 5) B 9 D 34 C (48 A 6) B 2 =?

- Ans**
- ☐ 1. 17
 - ☐ 2. 45
 - ☐ 3. 22
 - ☒ 4. 37

Q.90 If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 40 men and 20 boys in doing the same type of work will be:

- Ans**
- ☐ 1. 4 days
 - ☐ 2. 5 days
 - ☒ 3. 2 days
 - ☐ 4. 3 days

Q.91 Which of the following is a connective tissue?

- Ans**
- ☐ 1. Cuboidal epithelium
 - ☒ 2. Blood
 - ☐ 3. Muscle
 - ☐ 4. Columnar epithelium

Q.92 Which of the following statements regarding saturated and unsaturated carbon compounds is correct?

Statement I: Saturated carbon compounds are hydrocarbons where carbon atoms are connected by single covalent bonds.

Statement II: Unsaturated carbon compounds are hydrocarbons where carbon atoms are connected by single covalent bonds.

- Ans**
- ☐ 1. Only statement II is correct.
 - ☐ 2. Both statements I and II are correct.
 - ☒ 3. Only statement I is correct.
 - ☐ 4. Neither statement I nor II is correct.

Q.93 A shopkeeper allows a 4% discount on his marked price. If the cost price of an article is ₹120 and he has to make a profit of 10%, then his marked price must be:

- Ans**
- ☐ 1. ₹120.50
 - ☐ 2. ₹117.50
 - ☐ 3. ₹127.50
 - ☒ 4. ₹137.50

Q.94 A train of 24 carriages, each of 60 m length, while an engine also of 60 m length is running at a speed of 50 km/h. In how much time will the train cross a bridge 1.5 km long?

- Ans**
- ☐ 1. 4.4 min
 - ☐ 2. 3 min
 - ☐ 3. 4 min
 - ☒ 4. 3.6 min

Q.95 Which of the following reactions is NOT an exothermic reaction?

- Ans**
- ☒ 1. Dilution of a strong acid
 - ☒ 2. Respiration
 - ☒ 3. Photosynthesis
 - ☒ 4. Burning of natural gas

Q.96 Which tissue is responsible for the movement in our body?

- Ans**
- ☒ 1. Cartilage
 - ☒ 2. Epithelial tissue
 - ☒ 3. Muscular tissue
 - ☒ 4. Areolar tissue

Q.97 Which of the following is/are NOT present in the plasma?

- Ans**
- ☒ 1. Undigested food
 - ☒ 2. Hormones
 - ☒ 3. Salts
 - ☒ 4. Proteins

Q.98 Which of the following is treated with dry slaked lime $[\text{Ca}(\text{OH})_2]$ to make bleaching powder?

- Ans**
- ☒ 1. Carbon dioxide gas
 - ☒ 2. Chlorine gas
 - ☒ 3. Hydrogen gas
 - ☒ 4. Water

Q.99 The work done by a constant force acting on a body is _____.

- Ans**
- ☒ 1. always positive
 - ☒ 2. always zero
 - ☒ 3. either positive or negative
 - ☒ 4. always negative

Q.100 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

YTL, QLD, IDV, AVN, ?

- Ans**
- ☒ 1. SNF
 - ☒ 2. SNG
 - ☒ 3. SMG
 - ☒ 4. SMF



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	28/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 6 @ \$ 7 & 9 # 1 * £ 5 3 2 + % 8 4 Ω (Right)

How many such symbols are there, each of which is immediately preceded by a number and also immediately followed by another number?

- Ans**
- ☒ 1. 4
 - ☒ 2. 1
 - ☒ 3. 2
 - ☒ 4. 3

Q.2 If 6 men and 8 boys can do a piece of work in 10 days, while 26 men and 48 boys can do the same in 2 days, the time taken by 25 boys in doing the same type of work will be:

- Ans**
- ☒ 1. 6 days
 - ☒ 2. 5 days
 - ☒ 3. 4 days
 - ☒ 4. 8 days

Q.3 B, C, D, E, F, G and K are sitting around a circular table, facing the centre. Only two people sit between E and F when counted from the left of F. G sits third to the left of K. C sits to the immediate right of K. C sits second to the left of E. B is not an immediate neighbour of G.

Who sits third to the right of B?

- Ans**
- ☒ 1. K
 - ☒ 2. D
 - ☒ 3. F
 - ☒ 4. G

Q.4 In a certain code language,

'A + B' means 'A is the sister of B',

'A – B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is Z related to C if 'X – Y x Z + A x B ÷ C'?

- Ans
- ✓ 1. Wife's sister
 - ✗ 2. Mother
 - ✗ 3. Daughter
 - ✗ 4. Wife's mother

Q.5 Which of the following are cells of phloem?

- Ans
- ✗ 1. Tracheids and companion cells
 - ✗ 2. Tracheids and vessels
 - ✓ 3. Sieve tubes and companion cells
 - ✗ 4. Sieve cells and vessels

Q.6 Who is the author of INDIA'S ECONOMY 2024: Disparities in Fractured Democracy?

- Ans
- ✗ 1. Kingshuk Nag
 - ✓ 2. Satyaki Roy
 - ✗ 3. Sanjaya Baru
 - ✗ 4. Milan Vaishnav

Q.7 The sale bill of an article after two successive discounts of 20% each is ₹16,000. The MRP of the article is:

- Ans
- ✓ 1. ₹25,000
 - ✗ 2. ₹25,220
 - ✗ 3. ₹24,000
 - ✗ 4. ₹24,560

Q.8 Which of the following seeds are dispersed by animals, especially spiny seeds with hooks, that get attached to their bodies and are carried to distant places?

- Ans
- ✓ 1. Xanthium and Urena
 - ✗ 2. Castor and Balsam
 - ✗ 3. Drumstick and Maple
 - ✗ 4. Sunflower and Madar

Q.9 In July 2024, the first Project PARI (Public Art of India), an initiative by the Ministry of Culture, Government of India, was organised in which of the following locations?

- Ans
- ✗ 1. Ahmedabad
 - ✓ 2. New Delhi
 - ✗ 3. Hyderabad
 - ✗ 4. Bengaluru

Q.10 In a right-angled triangle, if the hypotenuse is 10 units and one of its sides is 8 units then find the area of the triangle.

Ans

- ☐ 1. 48 sq. units
- ☐ 2. 16 sq. units
- ☐ 3. 32 sq. units
- ☒ 4. 24 sq. units

Q.11 Every cell has a _____ around it to keep its own contents separate from the external environment.

Ans

- ☐ 1. mitochondria
- ☐ 2. nucleus
- ☐ 3. cell wall
- ☒ 4. membrane

Q.12 What will come in the place of '?' in the following equation, if '-' and '+' are interchanged and '×' and '÷' are interchanged?

$17 + 13 \times 3 \div 12 - 4 = ?$

Ans

- ☐ 1. 206
- ☐ 2. 211
- ☒ 3. 221
- ☐ 4. 241

Q.13 What is the equivalent resistance of a series combination of resistors?

Ans

- ☐ 1. The reciprocal of the sum of the individual resistances.
- ☒ 2. The sum of the individual resistances.
- ☐ 3. The product of the individual resistances.
- ☐ 4. The difference between the individual resistances.

Q.14 The National Pension System Vatsalya (NPS Vatsalya) was launched on _____.

Ans

- ☐ 1. 8 September 2024
- ☐ 2. 28 September 2024
- ☒ 3. 18 September 2024
- ☐ 4. 26 September 2024

Q.15 Which of the following gases present in the atmosphere is used by terrestrial organisms for respiration?

Ans

- ☐ 1. Nitrogen
- ☒ 2. Oxygen
- ☐ 3. Neon
- ☐ 4. Hydrogen

Q.16 On simple interest, a certain sum of money amounts to ₹1,250 in 2 years and to ₹2,000 in 5 years. Find the rate of interest per annum (rounded off to two places of decimal).

Ans

- ☒ 1. 33.33%
- ☐ 2. 27.27%
- ☐ 3. 16.67%
- ☐ 4. 11.11%

Q.17 How many prime numbers lie between 1 and 30?

- Ans
- ☒ 1. 10
 - ☐ 2. 8
 - ☐ 3. 9
 - ☐ 4. 11

Q.18 Among the following cases, which kind of magnetic field production is found similar to the magnetic-field of a bar magnet?

- Ans
- ☐ 1. A circular loop carrying current.
 - ☐ 2. A rectangular loop carrying current.
 - ☐ 3. An infinitely long wire carrying current.
 - ☒ 4. A solenoid of finite length carrying current.

Q.19 If $a - b = 1$ and $a^3 - b^3 = 61$, then the value of ab is :

- Ans
- ☒ 1. 20
 - ☐ 2. 60
 - ☐ 3. -20
 - ☐ 4. 30

Q.20 Evaluate the given expression.

$$\left(\frac{-2}{5}\right)^{-2} \times \left(\frac{-4}{5}\right)^4$$

- Ans
- ☐ 1. $\frac{25}{26}$
 - ☐ 2. $\frac{25}{64}$
 - ☒ 3. $\frac{64}{25}$
 - ☐ 4. $\frac{26}{25}$

Q.21 Which of the following examples is NOT an example of combination reaction?

- Ans
- ☐ 1. Burning of coal
 - ☐ 2. Formation of slaked lime from quick lime
 - ☐ 3. Formation of water
 - ☒ 4. Formation of iron sulphate from copper sulphate and iron

Q.22 Which of the following reproduces by budding?

- Ans
- ☐ 1. Mosquito
 - ☐ 2. Liver fluke
 - ☐ 3. Algae
 - ☒ 4. Hydra

Q.23 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 5 1 8 3 6 3 6 8 4 5 7 6 7 1 9 2 4 6 2 7 8 6 1 8 8 1 7 7 3 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 2
 - ☒ 2. 4
 - ☒ 3. 3
 - ☒ 4. 5

Q.24 Which of the following organisms show a parasitic nutritive strategy?

- Ans**
- ☒ 1. Cuscuta
 - ☒ 2. Acacia
 - ☒ 3. Mosses
 - ☒ 4. Orchids

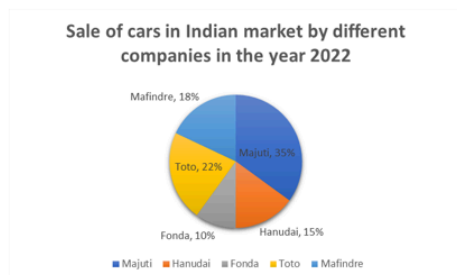
Q.25 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HJG, KMI, NPM, QSP, ?

- Ans**
- ☒ 1. VTS
 - ☒ 2. TVS
 - ☒ 3. VST
 - ☒ 4. TSV

Q.26 Study the following pie-chart and answer the question that follows.

The following pie-chart shows the breakup of the percentage sale of cars by different companies in India in the year 2022.



If the total number of cars sold in India in the year 2022 was 15,00,000, then what was the number of cars sold by Mafindre in India in the year 2022?

- Ans**
- ☒ 1. 3,00,000
 - ☒ 2. 2,40,000
 - ☒ 3. 2,80,000
 - ☒ 4. 2,70,000

Q.27 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$3 + 13 \times 26 \div 8 - 4 = ?$$

- Ans**
- ☒ 1. 63
 - ☒ 2. 43
 - ☒ 3. 73
 - ☒ 4. 53

Q.28 Which of the following is NOT a characteristic of a gas?

- Ans**
- ☐ 1. It is highly compressible.
 - ☐ 2. The particles are very loosely packed.
 - ☐ 3. The rate of diffusion is very high.
 - ☒ 4. It has a fixed shape.

Q.29 Hariteja walked to his school at a speed of 4 km/h and returned on a scooter at 20 km/h. His average speed during the two-way journey is:

- Ans**
- ☐ 1. 12 km/h
 - ☐ 2. 6 km/h
 - ☒ 3. $\frac{20}{3}$ km/h
 - ☐ 4. 8 km/h

Q.30 Select the parasitic plant from the given options.

- Ans**
- ☐ 1. Cucumber
 - ☒ 2. Cuscuta
 - ☐ 3. Cabbage
 - ☐ 4. Cactus

Q.31 By 20% decrease in the price of rice, people can buy 10 kg more rice for ₹100. What is the original price of 1 kg of rice?

- Ans**
- ☒ 1. ₹2.50
 - ☐ 2. ₹5.00
 - ☐ 3. ₹4.50
 - ☐ 4. ₹1.50

Q.32 Union Budget 2024-25 enhanced the limit of Mudra loans under the 'Tarun' category to _____ for entrepreneurs who have availed and successfully repaid previous loans.

- Ans**
- ☐ 1. ₹15 lakh
 - ☒ 2. ₹20 lakh
 - ☐ 3. ₹12 lakh
 - ☐ 4. ₹25 lakh

Q.33 If the length of a rectangle is thrice its breadth and the perimeter of that rectangle is 48 cm, then find its area (in cm²).

- Ans**
- ☐ 1. 84
 - ☐ 2. 112
 - ☒ 3. 108
 - ☐ 4. 96

Q.34 Which of the following does NOT correctly match a change in the state of matter with its corresponding process?

- Ans**
- ☐ 1. Gas to Solid: Deposition
 - ☒ 2. Gas to Liquid: Sublimation
 - ☐ 3. Solid to Gas: Sublimation
 - ☐ 4. Liquid to Gas: Evaporation

Q.35 What least digit must be assigned to k so that the 7-digit number 86325k6 is divisible by 11?

- Ans**
- ☐ 1. 1
 - ☒ 2. 3
 - ☐ 3. 4
 - ☐ 4. 2

Q.36 Which of the following statements is/are correct related to respiration?

- (i) Pyruvate is converted into ethanol and carbon dioxide in yeast during fermentation.
- (ii) The break-down of pyruvate using oxygen takes place in chloroplast.
- (iii) In muscle cells, pyruvate is converted into lactic acid.

- Ans**
- ☐ 1. Only (i) and (ii)
 - ☐ 2. Only (i)
 - ☒ 3. Only (i) and (iii)
 - ☐ 4. (i), (ii) and (iii)

Q.37 Which institution launched India's first-ever book on sports psychology?

- Ans**
- ☐ 1. Indian Institute of Management (IIM)
 - ☐ 2. National Sports University
 - ☒ 3. International Institute of Sports Management (IISM)
 - ☐ 4. Sports Authority of India (SAI)

Q.38 Which of the following organisms has NO genetically predetermined sex?

- Ans**
- ☐ 1. Dogs
 - ☐ 2. Pigeon
 - ☐ 3. Human
 - ☒ 4. Snail

Q.39 JMHK is related to NQLO in a certain way based on the English alphabetical order. In the same way, MPKN is related to QTOR. To which of the following options is PSNQ related, following the same logic?

- Ans**
- ☐ 1. WTRU
 - ☐ 2. TWUR
 - ☒ 3. TWRU
 - ☐ 4. WTUR

Q.40 Kartik starts from Point A and drives 42 km towards South. He then takes a left turn, drives 25 km, turns left and drives 12 km. He then takes a left turn and drives 20 km. He takes a final right turn, drives 30 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☒ 1. 5 km towards West
 - ☐ 2. 5 km towards South
 - ☐ 3. 5 km towards East
 - ☐ 4. 5 km towards North

Q.41 The potential energy possessed by an object of mass 8 kg when it is at a height of 5 m above the ground will be (g is acceleration due to gravity in SI unit):

- Ans**
- ☐ 1. 100g J
 - ☐ 2. 200g J
 - ☒ 3. 40g J
 - ☐ 4. 20g J

Q.42 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

912, 865, 826, 779, 740, ?

- Ans**
- ☐ 1. 650
 - ☒ 2. 693
 - ☐ 3. 675
 - ☐ 4. 689

Q.43 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. Only five people sit between B and L. Z sits to the immediate left of L. Only one person sits between Z and C. A sits at some place to the left of Y but at some place to the right of X.

Who sits third from the left end of the line?

- Ans**
- ☒ 1. A
 - ☐ 2. Y
 - ☐ 3. C
 - ☐ 4. Z

Q.44 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 54 :: 8 : Y

- Ans**
- ☐ 1. X = 10, Y = 39
 - ☐ 2. X = 10, Y = 59
 - ☐ 3. X = 11, Y = 36
 - ☒ 4. X = 11, Y = 39

Q.45 Which of the following is an example of a heterogeneous solution?

- Ans**
- ☐ 1. Mixture of ethanol in water
 - ☒ 2. Mixture of oil in water
 - ☐ 3. Lemonade
 - ☐ 4. Tincture of iodine

Q.46 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(16, 4, 20)

(36, 9, 45)

- Ans**
- ☒ 1. (56, 14, 70)
 - ☐ 2. (56, 12, 70)
 - ☐ 3. (54, 14, 70)
 - ☐ 4. (56, 14, 65)

Q.47 Pipes A and B can fill a tank in 7 hours and 10 hours, respectively, and pipe C can empty the full tank in 14 hours. All three pipes are opened together, but pipe A is closed after 4.5 hours. In how many hours will the remaining part of tank be filled?

- Ans**
- ☐ 1. 16
 - ☐ 2. 24
 - ☐ 3. 12
 - ☒ 4. 8

Q.48 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

QL-GK-ON

MH-CG-KJ

- Ans**
- ☐ 1. PJ-EI-ML
 - ☐ 2. OJ-EH-MK
 - ☒ 3. OJ-EI-ML
 - ☐ 4. PJ-EI-MK

Q.49 A blanket is sold for ₹1,148, which results in a loss of 30%. For how much should it be sold to gain 5%?

- Ans**
- ☐ 1. ₹1,423
 - ☐ 2. ₹1,734
 - ☐ 3. ₹1,543
 - ☒ 4. ₹1,722

Q.50 The median of the observations 4, 14, 11, 9, 7, 8, 9, 12, 4 and 6 is:

- Ans**
- ☐ 1. 9.5
 - ☐ 2. 9
 - ☒ 3. 8.5
 - ☐ 4. 8

Q.51 The relation between power (P), voltage (V) and resistance (R) is given by ____.

- Ans**
- ✓ 1. $P = \frac{V^2}{R}$
 - ✗ 2. $P = V^2 R$
 - ✗ 3. $P = \frac{R}{2V^2}$
 - ✗ 4. $P = \frac{R^2}{V}$

Q.52 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 3 @ 2 % 9 + 7 £ * 5 6 # Ω \$ 1 & 8 4 (Right)

How many such symbols are there, each of which is immediately preceded by a symbol and also immediately followed by another symbol?

- Ans**
- ✓ 1. 1
 - ✗ 2. 2
 - ✗ 3. 0
 - ✗ 4. 3

Q.53 What causes the wavy appearance of objects seen through a turbulent stream of hot air?

- Ans**
- ✓ 1. Refraction of light
 - ✗ 2. Diffraction of light
 - ✗ 3. Absorption of light
 - ✗ 4. Interference of light

Q.54 Which of the following statements is INCORRECT for colloid?

- Ans**
- ✓ 1. Colloid is a homogeneous mixture.
 - ✗ 2. They do not settle down when left undisturbed.
 - ✗ 3. Colloid is a heterogeneous mixture.
 - ✗ 4. Colloidal particles scatter a beam of light passing through it.

Q.55 Six boxes P, Q, R, S, T and U are kept one over the other but not necessarily in the same order. P is kept third from the bottom. Only two boxes are kept between P and Q. Only three boxes are kept between Q and R. S is kept immediately below R. T is kept immediately below Q.

Q. How many boxes are kept between U and S?

- Ans**
- ✗ 1. One
 - ✗ 2. Three
 - ✗ 3. Zero
 - ✓ 4. Two

Q.56 In which plant do the buds produced in the notches along the leaf margin, fall on the soil and develop into a new plant?

- Ans**
- ✗ 1. Grapes
 - ✓ 2. Bryophyllum
 - ✗ 3. Rose
 - ✗ 4. Jasmine

Q.57 In a test, B got 60 marks while A got 75 marks. What percentage of A's marks was B's marks?

- Ans**
- ☐ 1. 65%
 - ☐ 2. 75%
 - ☒ 3. 80%
 - ☐ 4. 60%

Q.58 Which phenomenon is responsible for the blue colour of the sky?

- Ans**
- ☒ 1. Scattering of light
 - ☐ 2. Total internal reflection
 - ☐ 3. Reflection
 - ☐ 4. Atmospheric refraction

Q.59 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. BVP
 - ☒ 2. PKI
 - ☐ 3. KEY
 - ☐ 4. UOI

Q.60 At which of the following temperatures does a liquid change into a solid upon cooling?

- Ans**
- ☐ 1. Condensation point
 - ☒ 2. Freezing point
 - ☐ 3. Boiling point
 - ☐ 4. Melting point

Q.61 The problem of myopia in human eye can be corrected by using:

- Ans**
- ☐ 1. a convex lens of suitable power
 - ☐ 2. a convex mirror of suitable focal length
 - ☒ 3. a concave lens of suitable power
 - ☐ 4. a plain glass plate

Q.62 _____ an initiative by the Ministry of Culture, Government of India, being executed by Lalit Kala Akademi and National Gallery of Modern Art, in July 2024.

- Ans**
- ☐ 1. Project PIAR
 - ☐ 2. Project PRAI
 - ☐ 3. Project APRI
 - ☒ 4. Project PARI

Q.63 Which of the following statements is true about suspension?

- Ans**
- ☒ 1. The particles of a suspension can be seen by the naked eye.
 - ☐ 2. It is a homogeneous mixture.
 - ☐ 3. The solute particles don't settle down when a suspension is left undisturbed.
 - ☐ 4. The solute particles cannot be separated from the mixture.

Q.64 At the 2024 Paris Olympics, Manu Bhaker made history by becoming the first Indian woman to win an Olympic shooting medal and the first Indian to win ____ medals in shooting events.

- Ans**
- ☐ 1. 4
 - ☒ 2. 2
 - ☐ 3. 5
 - ☐ 4. 3

Q.65 Hindustan Aeronautics Limited (HAL) has been upgraded to which status by the Ministry of Finance in 2024?

- Ans**
- ☒ 1. Maharatna CPSE
 - ☐ 2. Mini Ratna CPSE
 - ☐ 3. Saksham CPSE
 - ☐ 4. Navratna CPSE

Q.66 As per the SDG India Index 2023-24 prepared by NITI Aayog, what is India's composite score?

- Ans**
- ☐ 1. 60
 - ☐ 2. 65
 - ☐ 3. 95
 - ☒ 4. 71

Q.67 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☒ 1. OS-NR
 - ☐ 2. IM-HK
 - ☐ 3. LP-KN
 - ☐ 4. FJ-EH

Q.68 A sum of money is distributed among four people A, B, C and D in the ratio 4 : 7 : 9 : 3. If B gets ₹600 more than A, then how much more will C get than D?

- Ans**
- ☐ 1. ₹800
 - ☐ 2. ₹600
 - ☒ 3. ₹1,200
 - ☐ 4. ₹1,400

Q.69 Which unicellular organism has a whip-like structure at one end of the cell and binary fission occurs in a definite orientation in relation to these structures?

- Ans**
- ☐ 1. Amoeba
 - ☐ 2. Yeast
 - ☐ 3. Plasmodium
 - ☒ 4. Leishmania

Q.70 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All buds are flowers.

All insects are flowers.

Conclusions:

(I) All buds are insects.

(II) All flowers are buds.

- Ans**
- ☒ 1. Only conclusion (II) follows
 - ☒ 2. Neither conclusion (I) nor (II) follows
 - ☒ 3. Only conclusion (I) follows
 - ☒ 4. Both conclusions (I) and (II) follow

Q.71 Evaluate the given expression.

$$36 - [12 + (3 \times 10 \div 2)]$$

- Ans**
- ☒ 1. 2
 - ☒ 2. 1
 - ☒ 3. 10
 - ☒ 4. 9

Q.72 In a parallel combination of two different resistors, which of the following is/are correct?

(A) The potential difference across each resistor has the same value.

(B) The current flowing through each resistor has the same value.

- Ans**
- ☒ 1. Both 'A' and 'B' are incorrect.
 - ☒ 2. 'A' is incorrect and 'B' is correct.
 - ☒ 3. 'A' is correct and 'B' is incorrect.
 - ☒ 4. Both 'A' and 'B' are correct.

Q.73 The phenomenon of change of liquid into vapours at any temperature below its boiling point is known as _____.

- Ans**
- ☒ 1. fusion
 - ☒ 2. sublimation
 - ☒ 3. evaporation
 - ☒ 4. deposition

Q.74 'When a sailor jumps out of a rowing boat, the boat moves backwards' is an example of which law of motion?

- Ans**
- ☒ 1. Newton's third law of motion
 - ☒ 2. Newton's first law of motion
 - ☒ 3. Newton's second law of motion
 - ☒ 4. Law of inertia

Q.75 Which of the following phenomena is responsible for Tyndall effect?

- Ans**
- ☒ 1. Scattering of light
 - ☐ 2. Dispersion of light
 - ☐ 3. Refraction of light
 - ☐ 4. Reflection of light

Q.76 Ramu has been given a tub of water with a refractive index of 1.33, a mug of oil with a refractive index of 1.46, a bottle of glycerine with a refractive index of 1.5 and a glass-slab with a refractive index of 1.65. Light will travel fastest in:

- Ans**
- ☐ 1. glycerine
 - ☐ 2. oil
 - ☒ 3. water
 - ☐ 4. glass-slab

Q.77 The laws of reflection are applicable to:

- Ans**
- ☐ 1. only plane reflecting surface
 - ☒ 2. all types of reflecting surfaces including spherical surfaces
 - ☐ 3. only curved reflecting surface
 - ☐ 4. all types of reflecting surfaces excluding spherical surfaces

Q.78 Select the most appropriate hydrogen atom radius from the given options.

- Ans**
- ☐ 1. 10^{-8} m
 - ☐ 2. 10^{-12} m
 - ☒ 3. 10^{-10} m
 - ☐ 4. 10^{-6} m

Q.79 In September 2024, researchers at (the) _____ developed a 'brain on a chip' that can store and process data in 16,500 states within molecular film.

- Ans**
- ☐ 1. Indian Space Research Organisation (ISRO)
 - ☐ 2. Indian Institute of Space Sciences
 - ☐ 3. IIT Bombay
 - ☒ 4. Indian Institute of Science (IISc)

Q.80 The sum of three sides of an isosceles triangle is 20 cm, and the ratio of an equal side to the base is 3 : 4, The altitude of the triangle is:

- Ans**
- ☒ 1. $2\sqrt{5}$ cm
 - ☐ 2. $3\sqrt{3}$ cm
 - ☐ 3. $3\sqrt{5}$ cm
 - ☐ 4. $4\sqrt{5}$ cm

Q.81 How many eggs is/are produced every month by one of the ovaries?

- Ans**
- ☐ 1. Three
 - ☐ 2. Four
 - ☒ 3. One
 - ☐ 4. Two

Q.82 Which of the following statements is true regarding a dilute solution?

- Ans**
- ☐ 1. It exhibits a heterogeneous appearance.
 - ☒ 2. It has a small amount of solute dissolved in a large amount of solvent.
 - ☐ 3. It contains a large amount of solute dissolved in a small amount of solvent.
 - ☐ 4. It has an equal ratio of solute to solvent by mass.

Q.83 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ABC, EDH, IFM, MHR, ?

- Ans**
- ☐ 1. RSW
 - ☒ 2. QJW
 - ☐ 3. QNW
 - ☐ 4. QIW

Q.84 _____ is found as chromatin material in a non-dividing cell's structure.

- Ans**
- ☐ 1. RNA
 - ☒ 2. DNA
 - ☐ 3. Ribosome
 - ☐ 4. Nucleus

Q.85 If 7, 12, 21 and k are in proportion, the value of k is:

- Ans**
- ☐ 1. 24
 - ☒ 2. 36
 - ☐ 3. 27
 - ☐ 4. 35

Q.86 The smallest six-digit natural number that is exactly divisible by 8, 10, 12 and 16 is:

- Ans**
- ☐ 1. 100020
 - ☐ 2. 100040
 - ☐ 3. 100060
 - ☒ 4. 100080

Q.87 Whenever an object falls toward the earth, acceleration is involved. Which of the following forces provides this acceleration?

- Ans**
- ☐ 1. Nuclear force
 - ☐ 2. Electromagnetic force
 - ☒ 3. Earth's gravitational force
 - ☐ 4. Earth's repulsive force

Q.88 Find the simple interest on ₹700 at 7% per month in 9 months.

- Ans**
- ☐ 1. ₹434
 - ☐ 2. ₹461
 - ☐ 3. ₹474
 - ☒ 4. ₹441

Q.89 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some pens are sketch pens.

All sketch pens are erasers.

Some erasers are rulers.

Conclusions:

(I) Some rulers are sketch pens.

(II) Some erasers are pens.

- Ans**
- ☐ 1. Only conclusion (I) follows.
 - ☐ 2. Neither conclusion (I) nor (II) follows.
 - ☐ 3. Both conclusions (I) and (II) follow.
 - ☒ 4. Only conclusion (II) follows.

Q.90 After a hot sunny day, people sprinkle water on the roof or open ground because:

- Ans**
- ☒ 1. large latent heat of vaporisation of water helps to cool the hot surface
 - ☐ 2. less latent heat of vaporisation of water helps to cool the hot surface
 - ☐ 3. large latent heat of vaporisation of water does not help to cool the hot surface
 - ☐ 4. large latent heat of vaporisation of water helps to heat the cold surface

Q.91 Which of the following are bacterial infections that occur due to sexual contact?

A. Gonorrhoea

B. AIDS

C. Syphilis

- Ans**
- ☐ 1. Both A and B
 - ☐ 2. A, B and C
 - ☒ 3. Both A and C
 - ☐ 4. Both B and C

Q.92 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Even though sugar is added in most of the food items cooked, it is not good for health.

Reasons:

I. Sugar adds more taste into any food being cooked.

II. Sugar is the most consumed material in the country

- Ans**
- ☒ 1. Both I and II are possible reasons.
 - ☒ 2. Only I is a possible reason.
 - ☒ 3. Only II is a possible reason.
 - ☒ 4. Neither I nor II is a possible reason.

Q.93 Which of the following is NOT an example of a homogeneous mixture?

- Ans**
- ☒ 1. Orange juice with pulp
 - ☒ 2. Sugar solution
 - ☒ 3. Vinegar
 - ☒ 4. Pure Air

Q.94 The average of the first 10 odd prime numbers is:

- Ans**
- ☒ 1. 13.8
 - ☒ 2. 17
 - ☒ 3. 12.9
 - ☒ 4. 15.8

Q.95 The value of $\left[\frac{\cos 50^\circ}{1 + \sin 50^\circ} \right] + \left[\frac{1 + \sin 50^\circ}{\cos 50^\circ} \right]$ is:

- Ans**
- ☒ 1. $2 \tan 50^\circ$
 - ☒ 2. $2 \sec 50^\circ$
 - ☒ 3. $2 \cot 50^\circ$
 - ☒ 4. $2 \operatorname{cosec} 50^\circ$

Q.96 Ravi is younger than Kishan by 3 years. If the ages of Ravi and Kishan are in the ratio 7 : 8, then how old is Kishan?

- Ans**
- ☒ 1. 24 years
 - ☒ 2. 21 years
 - ☒ 3. 18 years
 - ☒ 4. 27 years

Q.97 In a certain code language, 'I Drink Juice' is written as 'Hu Pu Nu' and 'We Drink Water' is written as 'Tu Su Hu' and 'Juice and Water' is written as 'Pu Du Tu'. How is 'We' written in the given language?

- Ans**
- ☒ 1. Hu
 - ☒ 2. Pu
 - ☒ 3. Tu
 - ☒ 4. Su

Q.98 In a certain code language, 'He Loves Cricket' is written as 'Ki Mi Gi', 'She Loves To Play' is written as 'Si Di Ci Ki', and 'He Play Chess' is written as 'Ti Gi Di'. How is 'Chess' written in the given language?

- Ans**
- ☐ 1. Gi
 - ☒ 2. Ti
 - ☐ 3. Di
 - ☐ 4. Ki

Q.99 What is the cause of the apparent elevation of a star's position when viewed near the horizon?

- Ans**
- ☐ 1. Atmospheric absorption of starlight
 - ☐ 2. Reflection of starlight away from the normal
 - ☒ 3. Atmospheric refraction of starlight towards the normal
 - ☐ 4. The gravitational force of Earth on starlight

Q.100 By what per cent does the curved surface area of a cylinder decrease, if the radius is increased by 20% and the height is decreased by 30%?

- Ans**
- ☐ 1. 20%
 - ☒ 2. 16%
 - ☐ 3. 14%
 - ☐ 4. 23%

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	28/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 18.8 :: 21 : Y

- Ans**
- ☒ 1. X = 20, Y = 26.8
 - ☒ 2. X = 15, Y = 24.8
 - ☒ 3. X = 11, Y = 29.4
 - ☒ 4. X = 17, Y = 22.6

Q.2 Which of the following statements is correct related to male reproductive system?

- Ans**
- ☒ 1. Sperm formation requires higher temperature than the normal body temperature.
 - ☒ 2. Testes are located in the abdominal cavity.
 - ☒ 3. Testes secrete testosterone hormone.
 - ☒ 4. Formation of sperm takes place in seminal vessel.

Q.3 Rough endoplasmic reticulum looks rough under a microscope because it has particles called _____ attached to its surface.

- Ans**
- ☒ 1. chromosomes
 - ☒ 2. ribosomes
 - ☒ 3. protein particles
 - ☒ 4. lysosomes

Q.4 If + means -, - means ×, × means ÷, and ÷ means +, then what will come in place of the question mark (?) in the following equation?

$$16 \div 96 \times 6 - 4 + 20 = ?$$

- Ans**
- ☒ 1. 60
 - ☒ 2. 56
 - ☒ 3. 54
 - ☒ 4. 50

Q.5 The cost of 2 tables and 3 chairs is ₹540, while that of 2 tables and 1 chair is ₹470. What is the cost of 2 tables and 2 chairs combinedly?

- Ans**
- ✓ 1. ₹505
 - ✗ 2. ₹525
 - ✗ 3. ₹545
 - ✗ 4. ₹485

Q.6 When an object is thrown upward, the force of gravity is _____.

- Ans**
- ✗ 1. Zero
 - ✓ 2. opposite to the direction of motion
 - ✗ 3. independent of direction of motion
 - ✗ 4. the same as the direction of motion

Q.7 In November 2024, Indian Space Research Organisation (ISRO) started the country's first analogue space mission at which of the following places to simulate life in an interplanetary habitat?

- Ans**
- ✗ 1. Mount Abu
 - ✗ 2. Rameshwaram
 - ✓ 3. Leh
 - ✗ 4. Itanagar

Q.8 The ratio of the radius of the base to the height of a cylinder is 3 : 1. If its volume is 9702 cm^3 , then the curved surface area of the cylinder is: (Use $\pi = \frac{22}{7}$)

- Ans**
- ✗ 1. 616 cm^2
 - ✗ 2. 946 cm^2
 - ✗ 3. 668 cm^2
 - ✓ 4. 924 cm^2

Q.9 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

17, 20, 26, 35, 47, ?

- Ans**
- ✗ 1. 63
 - ✗ 2. 60
 - ✗ 3. 64
 - ✓ 4. 62

Q.10 Which of the following elements is extracted by electrolysis reduction?

- Ans**
- ✗ 1. Ag
 - ✗ 2. Zn
 - ✓ 3. Na
 - ✗ 4. Pb

Q.11 Three candidates contested in an election and received 1036, 7044 and 12,120 votes, respectively. What percentage of the total number of votes did the winning candidate get?

- Ans**
- ☐ 1. 65%
 - ☒ 2. 60%
 - ☐ 3. 90%
 - ☐ 4. 57%

Q.12 A pipe can fill a tank in 12 hours. Another pipe can empty the filled tank in 18 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans**
- ☐ 1. 48
 - ☐ 2. 36
 - ☐ 3. 24
 - ☒ 4. 12

Q.13 The average of the first 50 natural numbers is:

- Ans**
- ☐ 1. 25
 - ☒ 2. 25.5
 - ☐ 3. 21.25
 - ☐ 4. 12.25

Q.14 If $x + y = 16$ and $xy = 48$, find the value of $x^2 + y^2$.

- Ans**
- ☐ 1. 144
 - ☐ 2. 150
 - ☐ 3. 164
 - ☒ 4. 160

Q.15 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. Only two people sit to the right of Q. Only two people sit between Q and B. Only two people sit between F and P. P sits to the immediate left of Q. E sits to the immediate right of R. Who sits at the third position from the left end of the row?

- Ans**
- ☐ 1. R
 - ☐ 2. P
 - ☒ 3. A
 - ☐ 4. B

Q.16 Which of the following is a characteristic property of acids?

- Ans**
- ☐ 1. They turn red litmus paper blue.
 - ☒ 2. They turn blue litmus paper red.
 - ☐ 3. They have a pH greater than 7.
 - ☐ 4. They have a slippery feel.

Q.17 A body is thrown up and it reaches a height of 5m and then falls down, the total displacement and the total distance covered by the body respectively would be:

- Ans**
- ☐ 1. 10m, 0m
 - ☐ 2. 0m, 0m
 - ☒ 3. 0m, 10m
 - ☐ 4. 5m, 5m

Q.18 According to one of the laws of refraction, the _____ ray, the refracted ray and the normal to the interface of two transparent media at the point of incidence, all lie in the same plane.

- Ans**
- ☐ 1. Parallel
 - ☐ 2. Reflected
 - ☒ 3. Incident
 - ☐ 4. Emergent

Q.19 The distance between two points on a map is 5 cm. The scale of the map is 1 : 6,00,000. The actual distance between the two points (in km) is:

- Ans**
- ☐ 1. 30,000
 - ☐ 2. 3000
 - ☒ 3. 30
 - ☐ 4. 300

Q.20 Who is one of the authors of the book 'Overthrowing Cricket's Empire: How Every Team Beat England for the First Time' released in July 2024?

- Ans**
- ☒ 1. Abishek Mukherjee
 - ☐ 2. Joy Bhattacharjya
 - ☐ 3. R Ashwin
 - ☐ 4. Aniket Mishra

Q.21 To promote Indian Culture and Art, President Draupadi Murmu conferred which of the following awards in October 2024?

- Ans**
- ☐ 1. 69th National Film Awards
 - ☐ 2. 68th National Film Awards
 - ☒ 3. 70th National Film Awards
 - ☐ 4. 67th National Film Awards

Q.22 What compound is formed when a small amount of hydrochloric acid is added to a beaker containing copper oxide?

- Ans**
- ☐ 1. Copper (I) chloride
 - ☐ 2. Copper (IV) chloride
 - ☐ 3. Copper (III) chloride
 - ☒ 4. Copper (II) chloride

Q.23 Which of the following is NOT the characteristic of particles of the matter?

- Ans**
- ☐ 1. They attract each other.
 - ☐ 2. They are continuously moving.
 - ☒ 3. They are very large in size.
 - ☐ 4. They have space between them.

Q.24 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', then the resultant of which of the following would be 113?

- Ans**
- ☐ 1. 96 C 12 B 2 D (42 A 6) D 3 C 20
 - ☐ 2. 96 D 12 A 2 C (42 B 6) A 3 C 20
 - ☐ 3. 96 C 12 A 2 D (42 A 6) A 3 D 20
 - ☒ 4. 96 D 12 B 2 C (42 A 6) B 3 C 20

Q.25 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. M is kept second from the bottom. Only three boxes are kept between M and B. P is kept at one of the positions below M. Only E is kept between B and F. A is kept at one of the positions above B. How many boxes are kept between L and P?

- Ans**
- ☒ 1. One
 - ☐ 2. Three
 - ☐ 3. Two
 - ☐ 4. Four

Q.26 Who was appointed as the new Managing Director of Boeing Defence India in February 2024?

- Ans**
- ☐ 1. Sanjay Gupta
 - ☐ 2. Vijay Mehta
 - ☐ 3. Arun Kumar
 - ☒ 4. Nikhil Joshi

Q.27 For a given data, if mean and mode are 42 and 60, respectively, then find the median of the data using empirical relation.

- Ans**
- ☐ 1. 44
 - ☒ 2. 48
 - ☐ 3. 50
 - ☐ 4. 46

Q.28 In a concave mirror, the object is placed between the pole and the focus point of the mirror. What is the nature of the image?

- Ans**
- ☐ 1. Virtual and inverted
 - ☐ 2. Real and erect
 - ☒ 3. Virtual and erect
 - ☐ 4. Real and inverted

Q.29 Where was the 8th India Water Week 2024 held?

- Ans**
- ☐ 1. Bangalore
 - ☐ 2. Mumbai
 - ☒ 3. New Delhi
 - ☐ 4. Indore

Q.30 Work done can be defined as _____.

- Ans**
- ☒ 1. force \times displacement
 - ☐ 2. force $-$ displacement
 - ☐ 3. force $+$ displacement
 - ☐ 4. force / displacement

Q.31 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. FHK
 - ☐ 2. UWZ
 - ☒ 3. JLP
 - ☐ 4. PRU

Q.32 Iodine is necessary for which gland to make the thyroxine hormone?

- Ans**
- ☒ 1. Thyroid gland
 - ☐ 2. Pineal gland
 - ☐ 3. Thymus
 - ☐ 4. Pancreas

Q.33 Justice Sanjiv Khanna took over as the _____ Chief Justice of India on 11 November 2024.

- Ans**
- ☐ 1. 50th
 - ☐ 2. 53rd
 - ☐ 3. 52nd
 - ☒ 4. 51st

Q.34 When a body falls freely under gravity, then which of the following quantities DOES NOT remain constant:

- Ans**
- ☐ 1. Mass
 - ☐ 2. Universal Gravitational Constant
 - ☒ 3. Distance
 - ☐ 4. Acceleration

Q.35 Which of the following compounds undergoes thermal decomposition to produce calcium oxide and carbon dioxide?

- Ans**
- ☐ 1. Calcium chloride
 - ☒ 2. Calcium carbonate
 - ☐ 3. Calcium nitrate
 - ☐ 4. Calcium sulphate

Q.36 A positive number, when added to its square, gives 56. The number is:

- Ans**
- ☐ 1. 12
 - ☐ 2. 9
 - ☐ 3. 8
 - ☒ 4. 7

Q.37 In a certain code language, 'someday in paradise' is written as 'yd pl ws' and 'in dense forest' is written as 'fc ws nm'. How is 'in' coded in the given language?

- Ans**
- ☐ 1. yd
 - ☐ 2. fc
 - ☐ 3. nm
 - ☒ 4. ws

Q.38 Which of the following is part of mechanical energy?

- Ans**
- ☐ 1. Only Light energy
 - ☐ 2. Only Heat energy
 - ☐ 3. Only Chemical energy
 - ☒ 4. Potential energy

Q.39 The position(s) of how many letters will remain unchanged if each of the letters in the word ARTICLE is arranged in the English alphabetical order ?

- Ans**
- ☒ 1. 1
 - ☒ 2. 2
 - ☒ 3. 0
 - ☒ 4. 3

Q.40 A and B working alone can do a work in 40 days and 30 days, respectively. They started the work together, but B left after some time and A finished the remaining work in 5 days. How many days after starting did B leave the work?

- Ans**
- ☒ 1. 12 days
 - ☒ 2. 14 days
 - ☒ 3. 15 days
 - ☒ 4. 16 days

Q.41 Ramesh invested ₹1,232 at 5% p.a. simple interest in a bank. What amount will he get after 3 years?

- Ans**
- ☒ 1. ₹1,848.80
 - ☒ 2. ₹1,416.80
 - ☒ 3. ₹2,145.80
 - ☒ 4. ₹1,285.80

Q.42 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All shirts are pants.

Some pants are tie.

Conclusions:

(I) At least some pants are shirts.

(II) Some shirts are tie.

- Ans**
- ☒ 1. Only conclusion II follows
 - ☒ 2. Only conclusion I follows
 - ☒ 3. Neither conclusion I nor II follows
 - ☒ 4. Both conclusions I and II follow

Q.43 Which of the following statements is /are true about the field around a current carrying solenoid:

- (i) The field inside the solenoid is uniform.
- (ii) The field outside the solenoid is same in magnitude as the field inside the solenoid.
- (iii) The field around the solenoid is similar to the field around a bar magnet.

- Ans**
- ☒ 1. Both (i) and (iii)
 - ☒ 2. Only (iii)
 - ☒ 3. Only (i)
 - ☒ 4. Both (ii) and (iii)

Q.44 Asexual reproduction by fragmentation occurs:

- Ans**
- ✓ 1. only in simple body organised multicellular organisms
 - ✗ 2. in all multicellular organisms
 - ✗ 3. only in unicellular organisms
 - ✗ 4. only in complex body organised multicellular organisms

Q.45 If the angles $(5x - 2)^\circ$ and 82° form a pair of supplementary angles, then the value of x is:

- Ans**
- ✓ 1. 20
 - ✗ 2. 45
 - ✗ 3. 30
 - ✗ 4. 90

Q.46 Given below is a cause followed by possible effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause:

There has been an increase in the number of thefts of bicycles being reported in the apartments in locality X in the last 2 months.

Effects:

(I) Police have instructed security guards of locality X to record details of all entries and exits and verify the phone numbers of all delivery personnel.

(II) Many apartment complexes have decided to install multiple CCTV cameras inside and outside their gates.

(III) More women police constables have been appointed in the police station adjoining locality X.

- Ans**
- ✗ 1. Only I can be a possible effect
 - ✓ 2. Both I and II can be the possible effects
 - ✗ 3. Only II is can be a possible effect
 - ✗ 4. Both II and III can be the possible effects

Q.47 In the process of photosynthesis, what happens to the carbohydrates (glucose) that are produced?

- Ans**
- ✗ 1. Carbohydrates are stored in the form of glycogen.
 - ✗ 2. All the carbohydrates are stored in the form of a starch.
 - ✓ 3. First, carbohydrates are utilised for energy production and the rest are stored in the form of starch.
 - ✗ 4. All the carbohydrates are immediately used as energy.

Q.48 Which of the following is the most common application of plaster of Paris?

- Ans**
- ✗ 1. Remove the hardness of water
 - ✗ 2. Baking
 - ✗ 3. Fire extinguisher
 - ✓ 4. Creating casts for supporting fractured bones

Q.49 If the simple interest on a sum of money at 8% per annum in 2 years is ₹2,000, find the compound interest on the same sum for the same period at the same rate in case of annual compounding.

- Ans**
- ✓ 1. ₹2,080
 - ✗ 2. ₹2,040
 - ✗ 3. ₹1,960
 - ✗ 4. ₹1,660

Q.50 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. RYT
 - ☒ 2. MTP
 - ☒ 3. JQL
 - ☒ 4. FMH

Q.51 A dishonest shopkeeper professes to sell his goods at cost price. However, he uses a false weight and thus gains 25%. For a kg, he uses a weight of:

- Ans**
- ☒ 1. 850 gm
 - ☒ 2. 800 gm
 - ☒ 3. 700 gm
 - ☒ 4. 900 gm

Q.52 Select the bisexual flower from the provided options.

- Ans**
- ☒ 1. Papaya
 - ☒ 2. Mustard
 - ☒ 3. Pumpkin
 - ☒ 4. Watermelon

Q.53 Apical meristem increases the _____ of the stem and the root.

- Ans**
- ☒ 1. flowers
 - ☒ 2. length
 - ☒ 3. girth
 - ☒ 4. branches

Q.54 Which of the following organisms have three-chambered hearts?

- Ans**
- ☒ 1. Amphibians
 - ☒ 2. Birds
 - ☒ 3. Fishes
 - ☒ 4. Mammals

Q.55 $\sec^2 A + (\operatorname{cosec}^2 A - 1) - (1 + \tan^2 A) - \cot^2 A =$ _____.

- Ans**
- ☒ 1. 1
 - ☒ 2. $\sec^2 A$
 - ☒ 3. 0
 - ☒ 4. $\cot^2 A$

Q.56 If a 4-digit number 13z4 is divisible by 6, then the greatest possible value of digit 'z' is:

- Ans**
- ☐ 1. 1
 - ☐ 2. 4
 - ☐ 3. 3
 - ☒ 4. 7

Q.57 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ZSN, QJE, HAV, YRM, ?

- Ans**
- ☐ 1. PJC
 - ☐ 2. PJD
 - ☒ 3. PID
 - ☐ 4. PIC

Q.58 Which of the following parts of a plant does NOT take part in vegetative propagation?

- Ans**
- ☐ 1. Leaves
 - ☐ 2. Root
 - ☐ 3. Stem
 - ☒ 4. Flower

Q.59 The magnetic field due to a current carrying coil increases when:

- Ans**
- ☐ 1. current through the coil is decreased
 - ☐ 2. number of turns of the coil is decreased
 - ☐ 3. One moves away from the coil
 - ☒ 4. current through the coil is increased

Q.60 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 96 :: 53 : Y

- Ans**
- ☐ 1. X = 58, Y = 112
 - ☐ 2. X = 49, Y = 118
 - ☐ 3. X = 52, Y = 104
 - ☒ 4. X = 47, Y = 108

Q.61 If each vowel in the word FRIENDLY is changed to the letter immediately preceding it in the English alphabetical order and each consonant is changed to the letter immediately following it in the English alphabetical order, the how many letters will appear twice in the group of letters thus formed?

- Ans**
- ☐ 1. 3
 - ☐ 2. 2
 - ☒ 3. 0
 - ☐ 4. 1

Q.62 The force of gravitation between two bodies is F ; if the mass of one of the bodies is increased to four times its initial value, then the gravitational force between the bodies will now be:

- Ans**
- ☐ 1. $F/4$
 - ☐ 2. $2F$
 - ☐ 3. F
 - ☒ 4. $4F$

Q.63 Which of the following pairs belongs to homologous series of alkenes?

- Ans**
- ☒ 1. C_3H_6 and C_4H_8
 - ☐ 2. CH_4 and C_4H_8
 - ☐ 3. C_2H_6 and C_3H_{10}
 - ☐ 4. CH_4 and C_2H_4

Q.64 Which of the following Asian countries conducted the '8th International Ancient Arts Festival and Symposium' in November 2024?

- Ans**
- ☐ 1. Nepal
 - ☐ 2. Bangladesh
 - ☐ 3. Bhutan
 - ☒ 4. India

Q.65 Which of the following is the longest part of the alimentary canal?

- Ans**
- ☐ 1. Large intestine
 - ☐ 2. Food pipe
 - ☐ 3. Stomach
 - ☒ 4. Small intestine

Q.66 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JAIL - ALIJ - LIAJ

ZEAL - ELAZ - LAEZ

- Ans**
- ☐ 1. MAIN - AMIN - NAIM
 - ☐ 2. COLD - ODLC - LCOD
 - ☐ 3. GILE - GLIE - ELIG
 - ☒ 4. BORE - OERB - EROB

Q.67 Express $0.\overline{52}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

- Ans**
- ☐ 1. $\frac{52}{90}$
 - ☐ 2. $\frac{53}{99}$
 - ☐ 3. $\frac{50}{99}$
 - ☒ 4. $\frac{52}{99}$

Q.68 Consider a ray passing through the principal focus and not parallel to the principal axis of a concave mirror, after reflection, it will:

- Ans**
- ☐ 1. pass through the principal focus
 - ☐ 2. emerge obliquely to the principal axis
 - ☒ 3. emerge parallel to the principal axis
 - ☐ 4. pass through the centre of curvature

Q.69 To gather intelligence about demand and supply of drugs in border villages, Punjab police launched which mission in association with Border Security Force (BSF) and Village Defence Committees (VDCs) in June 2024?

- Ans**
- ☒ 1. Mission Nishchay
 - ☐ 2. Mission Mukti
 - ☐ 3. Mission Sathi
 - ☐ 4. Mission Madad

Q.70 Which of the following is NOT a characteristic of a solution?

- Ans**
- ☐ 1. The particles of a solution are smaller than 1 nm (10^{-9} metre) in diameter.
 - ☐ 2. Because of very small particle size, particles do not scatter a beam of light passing through the solution.
 - ☐ 3. A solution is a homogenous mixture.
 - ☒ 4. The solute particles can be separated from the mixture by the process of filtration.

Q.71 The ratio between volume of a sphere and volume of a circumscribing right circular cylinder is:

- Ans**
- ☐ 1. 1 : 1
 - ☐ 2. 2 : 1
 - ☐ 3. 1 : 2
 - ☒ 4. 2 : 3

Q.72 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some rocks are apples.

Some apples are horses.

Some horses are nails.

Conclusions:

(I) Some nails are apples.

(II) Some horses are rocks.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☐ 2. Both conclusions (I) and (II) follow.
 - ☒ 3. Neither conclusion (I) nor (II) follows.
 - ☐ 4. Only conclusion (I) follows.

Q.73 A is twice as old as B. B is $\frac{1}{3}$ as old as C. The sum of ages of A, B and C is 42 years, find the sum of the ages of A and B.

- Ans**
- ☐ 1. 12 years
 - ☒ 2. 21 years
 - ☐ 3. 15 years
 - ☐ 4. 23 years

Q.74 Who among the following from the Indian state of Odisha won the third Rohini Nayyar Prize for his outstanding contribution to rural development?

- Ans**
- ☐ 1. Sethrichem Sangtam
 - ☐ 2. Azim Premji
 - ☒ 3. Anil Pradhan
 - ☐ 4. Deenanath Rajput

Q.75 The pH value of the neutral solution is _____.

- Ans**
- ☐ 1. 5
 - ☐ 2. 14
 - ☐ 3. 0
 - ☒ 4. 7

Q.76 What is the mass number of an atom having 13 protons and 14 neutrons?

- Ans**
- ☐ 1. 13 u
 - ☐ 2. 14 u
 - ☐ 3. 1 u
 - ☒ 4. 27 u

Q.77 In the Earth's crust, metal ores are present in the form of _____.

- Ans**
- ☒ 1. oxides, sulphides and carbonates
 - ☐ 2. only carbonates
 - ☐ 3. only sulphides
 - ☐ 4. only oxides

Q.78 Which of the following statements is/are correct related to eco-system?

- (i) Non-biodegradable substance harms the various members of eco-system.
- (ii) Non-biodegradable substances break-down by biological processes.
- (iii) Non-biodegradable substances never persist in the environment.

- Ans**
- ☒ 1. Only (i)
 - ☐ 2. Only (ii) and (iii)
 - ☐ 3. Only (i) and (ii)
 - ☐ 4. (i), (ii) and (iii)

Q.79 Kevin starts from point A and drives 7 km towards the North. He then takes two simultaneous right turns and drives 2 km and 1 km, respectively. He then takes a left turn and drives 3 km. He then takes two simultaneous right turns and drives 3 km each. He takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 2 km South
 - ☐ 2. 1 km West
 - ☐ 3. 2 km North
 - ☒ 4. 2 km West

Q.80 Which of the following pairs of metals are found in free state?

- Ans**
- ☒ 1. Gold and silver
 - ☐ 2. Gold and sodium
 - ☐ 3. Sodium and potassium
 - ☐ 4. Silver and potassium

Q.81 In a certain code language,
'P + Q' means 'P is the mother of Q',
'P - Q' means 'P is the husband of Q',
'P x Q' means 'P is the sister of Q' and
'P ÷ Q' means 'P is the brother of Q'.
How is A related to E if 'A + B - C + D x E'?

- Ans**
- ☐ 1. Father's sister
 - ☒ 2. Father's mother
 - ☐ 3. Mother's sister
 - ☐ 4. Mother's mother

Q.82 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All schools are colleges.

No college is a university.

Conclusions:

(I) Some colleges are not schools.

(II) Some schools may be universities.

- Ans**
- ☐ 1. Neither conclusion I nor II follows
 - ☐ 2. Only conclusion II follows
 - ☒ 3. Only conclusion I follows
 - ☐ 4. Both conclusions I and II follow

Q.83 The value of $\frac{0.5 \times 10.6 - 0.2 \times 1.4}{0.4}$ is:

- Ans**
- ☒ 1. 12.55
 - ☐ 2. 1.255
 - ☐ 3. 12.25
 - ☐ 4. 125.5

Q.84 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

YES, ZGV, AIY, BKB, ?

- Ans**
- ☐ 1. CMD
 - ☒ 2. CME
 - ☐ 3. CMF
 - ☐ 4. CNE

Q.85 Arvind spends 75% of his income. His income is increased by 20% and he increased his expenditure by 10%. His savings are increased by:

- Ans**
- ☒ 1. 50%
 - ☐ 2. 10%
 - ☐ 3. 25%
 - ☐ 4. 37.5%

Q.86 What is the SI unit of acceleration?

- Ans**
- ☐ 1. m s
 - ☒ 2. m s^{-2}
 - ☐ 3. m s^2
 - ☐ 4. m s^{-1}

Q.87 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 9 # 1 * £ & % 4 6 @ 8 \$ 7 & 3 Ω 5 (Right)

How many such symbols are there, each of which is immediately preceded by a symbol and also immediately followed by an odd number?

- Ans**
- ☒ 1. None
 - ☐ 2. One
 - ☐ 3. Two
 - ☐ 4. More than two

Q.88 _____ is the process through which plants lose water in the form of water vapour.

- Ans**
- ☐ 1. Transportation
 - ☐ 2. Imbibition
 - ☐ 3. Transcription
 - ☒ 4. Transpiration

Q.89 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. Only three people sit to the right of A. B sits second from the left end. F is an immediate neighbour of C and G. D sits second to the left of C. How many people sit between E and D?

- Ans**
- ☐ 1. Three
 - ☐ 2. Four
 - ☒ 3. One
 - ☐ 4. Two

Q.90 If John travels 90 km at a speed of 30 km/h and returns at a speed of 60 km/h, his average speed is:

- Ans**
- ☐ 1. 30 km/h
 - ☐ 2. 60 km/h
 - ☒ 3. 40 km/h
 - ☐ 4. 45 km/h

Q.91 In a certain code language, 'TREF' is coded as '3528' and 'KERF' is coded as '5438'. What is the code for 'K' in the given code language?

- Ans**
- ☐ 1. 3
 - ☐ 2. 8
 - ☒ 3. 4
 - ☐ 4. 5

Q.92 In the set {61, 62...100}, the sum of the second greatest and the second smallest prime numbers is:

- Ans**
- ☐ 1. 164
 - ☐ 2. 150
 - ☐ 3. 158
 - ☒ 4. 156

Q.93 Which of the following statements is INCORRECT?

- Ans**
- ☐ 1. Binary fission occurs in a definite orientation in Leishmania.
 - ☒ 2. Plasmodium divides into many daughter cells simultaneously by binary fission.
 - ☐ 3. In Amoeba, the splitting of the two cells during division can take place in any plane.
 - ☐ 4. Yeast can put out small buds that separate and grow further.

Q.94 The natural tendency of objects to resist a change in their state of rest or of uniform motion is called_____.

- Ans**
- ☒ 1. inertia
 - ☐ 2. force
 - ☐ 3. motion
 - ☐ 4. momentum

Q.95 By defeating which state's team had Punjab won the Syed Mushtaq Ali T20 Trophy at the IS Bindra PCA Stadium in November 2023?

- Ans**
- ☒ 1. Gujarat
 - ☐ 2. Madhya Pradesh
 - ☐ 3. Maharashtra
 - ☐ 4. Karnataka

Q.96 Which of the following diseases is caused by Leishmania?

- Ans**
- ☒ 1. Kala-azar
 - ☐ 2. Dengue
 - ☐ 3. Malaria
 - ☐ 4. Anaemia

Q.97 If 12, 24, 45 and y are in proportion, then the value of y is:

- Ans**
- ☐ 1. 30
 - ☐ 2. 25
 - ☐ 3. 60
 - ☒ 4. 90

Q.98 VSUR is related to KHJG in a certain way based on the English alphabetical order. In the same way, YVXU is related to NKMJ. To which of the following options is SPRO related, following the same logic?

- Ans**
- ☒ 1. HEGD
 - ☐ 2. GEHD
 - ☐ 3. GEDH
 - ☐ 4. HEDG

Q.99 Two successive discounts of 12% and 15% on any number of toys bought are equivalent to a single discount of:

- Ans**
- ☐ 1. 27%
 - ☐ 2. 26%
 - ☐ 3. 26.2%
 - ☒ 4. 25.2%

Q.100 Carbon has the unique ability to form bonds with other atoms of carbon. This property is known as _____.

- Ans**
- ☐ 1. cyclisation
 - ☐ 2. Crystallisation
 - ☒ 3. catenation
 - ☐ 4. Isomerisation

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	28/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Given below is a cause followed by possible effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause:

Heavy rains and flash floods have inundated many low lying areas of City X.

Effects:

(I) The State Government has appointed a new head for the municipality of City X.

(II) The State Government has evacuated over 5500 people stranded in low lying areas of City X.

(III) Food and water is being distributed at multiple locations to help citizens who have been evacuated from City X.

- Ans**
- ☒ 1. Both I and II can be the possible effects
 - ☒ 2. Both II and III can be the possible effects
 - ☒ 3. Only II can be a possible effect
 - ☒ 4. Only I can be a possible effect

Q.2 In a certain code language,
 'P + Q' means 'P is the mother of Q',
 'P - Q' means 'P is the wife of Q',
 'P x Q' means 'P is the father of Q' and
 'P ÷ Q' means 'P is the brother of Q'.
 How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
- ☒ 1. Mother's sister
 - ☒ 2. Mother's mother
 - ☒ 3. Father's mother
 - ☒ 4. Father's sister

Q.3 A shopkeeper sells an item for ₹571.20 after giving two successive discounts of 20% and 15% on its marked price. What is the marked price (in ₹) of the item?

- Ans**
- ☒ 1. 780
 - ☒ 2. 820
 - ☒ 3. 840
 - ☒ 4. 760

Q.4 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. PSN
 - ☒ 2. WZV
 - ☐ 3. UXS
 - ☐ 4. QTO

Q.5 In 2024, what major upgrade did the Indian Air Force (IAF) focus on to enhance its defense capabilities?

- Ans**
- ☒ 1. Upgrading the Sukhoi-30MKI fleet with new avionics
 - ☐ 2. Acquisition of advanced drones for surveillance
 - ☐ 3. Development of indigenously produced submarines
 - ☐ 4. Expansion of the cyber defense unit

Q.6 _____ is useful for the survival of species over time.

- Ans**
- ☒ 1. Variation
 - ☐ 2. Budding
 - ☐ 3. Reproduction
 - ☐ 4. Population

Q.7 At what rate (in percentage) per annum will ₹1,300 give ₹650 as simple interest in 10 years?

- Ans**
- ☐ 1. 8%
 - ☐ 2. 7%
 - ☒ 3. 5%
 - ☐ 4. 4%

Q.8 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$24 \times 6 \div 3 - 11 + 13 = ?$$

- Ans**
- ☐ 1. 12
 - ☐ 2. 9
 - ☐ 3. 8
 - ☒ 4. 10

Q.9 Which of the following was NOT one of the nine priority areas of Union Budget 2024-25, aimed at generating ample opportunities for all?

- Ans**
- ☐ 1. Employment and skilling
 - ☒ 2. Sustainable development of fisheries
 - ☐ 3. Energy security
 - ☐ 4. Manufacturing and services

Q.10 YTXS is related to QLPK in a certain way based on the English alphabetical order. In the same way, UPTO is related to MHLG. To which of the following options is RMQL related, following the same logic ?

- Ans**
- ☐ 1. EJID
 - ☐ 2. EJDI
 - ☒ 3. JEID
 - ☐ 4. JEDI

Q.11 If each vowel in the word PLASTID is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order, and the set of letters thus arrived are then rearranged in reverse of English alphabetical order, then which of the following letters will be third from the left in the group of letter thus formed?

- Ans**
- ☐ 1. H
 - ☐ 2. K
 - ☒ 3. O
 - ☐ 4. R

Q.12 What happens to the motion of an object when balanced forces act on it?

- Ans**
- ☐ 1. It slows down.
 - ☒ 2. Its state of motion remains unchanged.
 - ☐ 3. It changes its direction of motion.
 - ☐ 4. It speeds up.

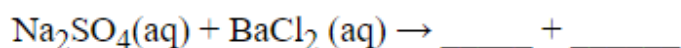
Q.13 Find the magnitude of applied force on a box of mass 10 kg for 20 s. It increases the box's velocity from 5 m s^{-1} to 15 m s^{-1} .

- Ans**
- ☒ 1. 5 N
 - ☐ 2. 10 N
 - ☐ 3. 4 N
 - ☐ 4. 1 N

Q.14 In a certain code language, 'POEM' is coded as '7591' and 'MINT' is coded as '6728'. What is the code for 'M' in the given code language?

- Ans**
- ☐ 1. 2
 - ☒ 2. 7
 - ☐ 3. 6
 - ☐ 4. 1

Q.15 What are the balanced products of the following reaction?



- Ans**
- ☐ 1. $2\text{BaSO}_2(\text{s}) + 2\text{NaCl}(\text{aq}) + 2\text{O}_2(\text{g})$
 - ☐ 2. $\text{BaSO}_2(\text{s}) + \text{NaCl}(\text{aq}) + \text{O}_2(\text{g})$
 - ☒ 3. $\text{BaSO}_4(\text{s}) + 2\text{NaCl}(\text{aq})$
 - ☐ 4. $\text{BaSO}_4(\text{s}) + 2\text{NaCl}_2(\text{aq})$

Q.16 The smallest ratio out of 1 : 1, 2 : 1, 1 : 3 and 3 : 1 is:

- Ans**
- ☐ 1. 3 : 1
 - ☒ 2. 1 : 3
 - ☐ 3. 2 : 1
 - ☐ 4. 1 : 1

Q.17 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

HN18, KQ27, NT36, QW45, ?

- Ans**
- ☒ 1. TZ55
 - ☒ 2. TZ54
 - ☐ 3. SY54
 - ☐ 4. SY55

Q.18 A spherical mirror, whose reflecting surface faces towards the centre of the sphere, is called a _____.

- Ans**
- ☒ 1. concave mirror
 - ☐ 2. plane mirror
 - ☐ 3. convex mirror
 - ☐ 4. plano-convex mirror

Q.19 Express the speed of 36 km/h in m/s.

- Ans**
- ☐ 1. 78 m/s
 - ☒ 2. 10 m/s
 - ☐ 3. 60 m/s
 - ☐ 4. 11 m/s

Q.20 Which of the following represents the molecular formula for carbon monoxide?

- Ans**
- ☒ 1. CO
 - ☐ 2. CO₂
 - ☐ 3. CO₃
 - ☐ 4. C₂O

Q.21 The wickets taken by a bowler in 10 cricket matches are 2, 6, 4, 5, 0, 2, 1, 3, 2, 3. The mode of the data is:

- Ans**
- ☒ 1. 2
 - ☐ 2. 3
 - ☐ 3. 1
 - ☐ 4. 0

Q.22 Due to decrease in manpower, the production in a factory decreases by 25%. By what percentage should the working hours be increased to restore the original production?

- Ans**
- ☐ 1. $43\frac{6}{7}\%$
 - ☐ 2. 50%
 - ☐ 3. 25%
 - ☒ 4. $33\frac{1}{3}\%$

Q.23 Which of the following is produced when carbon dioxide reacts with calcium hydroxide?





- Ans**
- ☐ 1. CaO + H₂O
 - ☐ 2. CO + H₂O
 - ☐ 3. H₂CO₃ + H₂O
 - ☒ 4. CaCO₃ + H₂O

Q.24 The sum of three consecutive multiples of 9 is 2457, find the smallest one.


- Ans**
-  1. 999
 -  2. 990
 -  3. 810
 -  4. 819

Q.25 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
-  1. WC – BF
 -  2. TZ – YC
 -  3. BH – GK
 -  4. AD – YW

Q.26 18 boys and 24 girls can complete a piece of work in 16 days. All of them started working together but after 12 working days, all girls and 6 boys stopped working. 12 boys completed the remaining work in 9 days. How many days will it take to complete the entire job if only 24 girls have to complete the job?


- Ans**
-  1. 40 days
 -  2. 48 days
 -  3. 24 days
 -  4. 32 days

Q.27 If + means \div , \div means \times , \times means $+$, and $-$ means $+$, then what will come in place of the question mark (?) in the following equation?





$$27 \div 66 \times 11 - 7 + 10 = ?$$

- Ans**
-  1. 59
 -  2. 60
 -  3. 58
 -  4. 56

Q.28 A tank was filled with 300 ltr of water. During the day, 87 ltr 225 ml of water was used. How much water was left in the tank at the end of the day?

- Ans**
-  1. 212 ltr 775 ml
 -  2. 212 ltr 675 ml
 -  3. 212 ltr 875 ml
 -  4. 212 ltr 825 ml

Q.29 Two numbers are respectively 20% and 25% more than a third number. What percentage of the second number is the first number?

- Ans**
-  1. 80%
 -  2. 125%
 -  3. 96%
 -  4. 85%

Q.30 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
(7, 28, 56)
(9, 36, 72)

- Ans**
- ☒ 1. (13, 50, 104)
 - ☒ 2. (13, 52, 104)
 - ☒ 3. (11, 52, 104)
 - ☒ 4. (13, 52, 94)

Q.31 A dealer buys three varieties of apples at ₹50, ₹40 and ₹30 per kilogram respectively. He mixes them in the ratio 2 : 4 : 9 respectively, by weight, and sells them at a profit of 30%. At what approximate price (per kilogram) does he sell the mixed variety of apples?

- Ans**
- ☒ 1. ₹23.50
 - ☒ 2. ₹45.90
 - ☒ 3. ₹10.80
 - ☒ 4. ₹75.00

Q.32 Cranial nerves arising from the brain and spinal nerves arising from the spinal cord together constitute the:

- Ans**
- ☒ 1. peripheral nervous system
 - ☒ 2. autonomic nervous system
 - ☒ 3. endocrine system
 - ☒ 4. central nervous system

Q.33 Which one of the following options is correctly paired according to their mode of action?

- Ans**
- ☒ 1. Condom – Mechanical barrier
 - ☒ 2. Tubectomy – Chemical barrier
 - ☒ 3. Contraceptive pills – Uterine device
 - ☒ 4. Copper T – Hormonal imbalance

Q.34 Where is glucose converted into pyruvate?

- Ans**
- ☒ 1. Ribosome
 - ☒ 2. Cytoplasm
 - ☒ 3. Golgi-complex
 - ☒ 4. Mitochondria

Q.35 Who among the following is a Tamil Nadu bus conductor, known for planting 3 lakh saplings over 30 years, has won multiple awards for his eco-activism?

- Ans**
- ☒ 1. MS Swaminathan
 - ☒ 2. Vijay Kumar
 - ☒ 3. Sundar Pichai
 - ☒ 4. Marimuthu Yoganathan

Q.36 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

HE-JG-LN

MJ-OL-QS

- Ans**
- ☒ 1. PM-RO-TU
 - ☒ 2. QN-SP-UW
 - ☒ 3. OL-QN-ST
 - ☒ 4. RO-TQ-VW

Q.37 At what temperature does water transform into steam under normal atmospheric pressure?

- Ans**
- ☒ 1. 50°C (122°F)
 - ☒ 2. 100°C (212°F)
 - ☒ 3. 80°C (176°F)
 - ☒ 4. 0°C (32°F)

Q.38 Which gas is primarily produced during the burning of coke?

- Ans**
- ☒ 1. Oxygen
 - ☒ 2. Sulphur dioxide
 - ☒ 3. Carbon dioxide
 - ☒ 4. Nitrogen dioxide

Q.39 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. Only A is kept above E. Only two boxes are kept between E and F. Only P is kept below M. B is not kept immediately above F. Which box is kept second above L?

- Ans**
- ☒ 1. A
 - ☒ 2. E
 - ☒ 3. B
 - ☒ 4. F

Q.40 Project PARI is an initiative launched by which of the following organisations/Ministries to celebrate and enhance the public art scene in India?

- Ans**
- ☒ 1. Sahitya Akademi
 - ☒ 2. Lalit Kala Akademi
 - ☒ 3. Centre for Cultural Resources and Training (CCRT)
 - ☒ 4. Union Ministry of Culture

Q.41 The displacement of a body is perpendicular to the direction in which the force is applied; the work done in this case will be:

- Ans**
- ☒ 1. Negative
 - ☒ 2. Infinite
 - ☒ 3. Positive
 - ☒ 4. Zero

Q.42 Burning of unsaturated compounds gives which of the following?

- Ans**
- ☐ 1. Clean flame
 - ☐ 2. Green flame
 - ☒ 3. Yellow flame
 - ☐ 4. Red flame

Q.43 In surrogacy cases, the surrogate as well as the commissioning mother may be granted maternity leave of how many days, in case either or both of them are government servants, as per new rule passed by the Indian Government in June 2024?

- Ans**
- ☐ 1. 45
 - ☐ 2. 30
 - ☒ 3. 180
 - ☐ 4. 90

Q.44 In a certain code language, 'PAIN' is coded as '9315' and 'LIFT' is coded as '4256'. What is the code for 'I' in the given code language?

- Ans**
- ☒ 1. 5
 - ☐ 2. 2
 - ☐ 3. 4
 - ☐ 4. 1

Q.45 If a sum of money doubles itself in 10 years on compound interest, then in how many more years will it become 16 times of itself at the same rate of interest?

- Ans**
- ☐ 1. 10
 - ☐ 2. 20
 - ☐ 3. 40
 - ☒ 4. 30

Q.46 If the volume of a cube is 512 cm^3 , then the measure of the main diagonal of the cube will be:

- Ans**
- ☐ 1. $17\sqrt{3} \text{ cm}$
 - ☐ 2. $14\sqrt{3} \text{ cm}$
 - ☐ 3. $7\sqrt{3} \text{ cm}$
 - ☒ 4. $8\sqrt{3} \text{ cm}$

Q.47 Find the area of a rhombus whose side is 25 cm and one of the diagonals is 30 cm?


- Ans**
- ☐ 1. 360 sq cm
 - ☒ 2. 600 sq cm
 - ☐ 3. 225 sq cm
 - ☐ 4. 720 sq cm


Q.48 The ratio between the present ages of Amit and Amita is 7 : 5, respectively. The ratio between Amit's age 5 years ago and Amita's age 5 years hence is 1 : 1. What is the sum of the present age of Amit and Amita?


- Ans**
- ☐ 1. 70 years
 - ☐ 2. 40 years
 - ☐ 3. 50 years
 - ☒ 4. 60 years


Q.49 Match the hormones with their respective functions.

Hormones	Functions
1. Thyroxin	a. Control body's growth and development
2. Growth hormone	b. Male sex organ development
3. Testosterone	c. Controls the level of blood sugar in the body
4. Insulin	d. Controls the body's metabolism of fat, protein and carbohydrates.

Ans  1. 1-d, 2-b, 3-c, 4-a

 2. 1-b, 2-a, 3-d, 4-c

 3. 1-d, 2-a, 3-b, 4-c

 4. 1-a, 2-c, 3-b, 4-d

Q.50 In September 2024, L&T Semiconductor Technologies (SiLT) signed an agreement with which of the following companies to co-develop advanced processors for edge devices, hybrid cloud systems and areas like mobility, industrial, energy and servers?

Ans  1. Dell


 2. Intel


 3. Nvidia


 4. IBM

Q.51 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits fourth to the right of F. Only two people sit between A and Q. Only two people sit between R and Q. P sits to the immediate left of B. How many people sit between P and E when counted from the right of E?

Ans  1. Three

 2. Two

 3. One

 4. Four

Q.52 How many seats did the Indian National Congress win in Rajasthan in Lok Sabha election 2024?

Ans  1. 8


 2. 14


 3. 25


 4. 1

Q.53 Which of the options below represents the correct chemical formula of calcium hydroxide?

Ans  1. $\text{Ca}(\text{OH})_2$


 2. $\text{Mg}(\text{OH})_2$


 3. NaOH


 4. KOH

Q.54 The pressure exerted on a body is 10 Nm^{-2} , if the area of the body is 2 m^2 ; then the thrust acting on the body will be:

Ans  1. 2 N

 2. 5 N

 3. 10 N

 4. 20 N

Q.55 Study the table given below and answer the question. The table shows the sale and profits of Company X.

Year	Sale (in cr)	Profits (in cr)
2019	20	2
2020	25	4
2021	30	6
2022	32	6.5
2023	34	7

What were the profits as a percentage of sale in 2021?

- Ans**
- ☐ 1. 10%
 - ☐ 2. 15%
 - ☐ 3. 25%
 - ☒ 4. 20%

Q.56 What is the filtration unit of the kidney?

- Ans**
- ☐ 1. Seminiferous tubule
 - ☒ 2. Nephron
 - ☐ 3. Neuron
 - ☐ 4. Sperm

Q.57 The ratio of copper and zinc in the brass is 13 : 7. How much zinc will there be in 100 kg of brass?

- Ans**
- ☒ 1. 35 kg
 - ☐ 2. 14 kg
 - ☐ 3. 42 kg
 - ☐ 4. 70 kg

Q.58 Simplify the following expression:

$$\frac{\cos \theta}{1 - \sin \theta} + \frac{1 - \sin \theta}{\cos \theta}$$

- Ans**
- ☒ 1. $2 \sec \theta$
 - ☐ 2. $2 \cos \theta$
 - ☐ 3. $2 \sin \theta$
 - ☐ 4. $1 + 2 \sin \theta$

Q.59 A can do a piece of work in 5 days. B can do it in 20 days. With the assistance of C, they completed the work in 2 days. C alone can do it in _____ days.

- Ans**
- ☐ 1. 3
 - ☒ 2. 4
 - ☐ 3. 5
 - ☐ 4. 6

Q.60 Methane, on burning with oxygen, gives which of the following products?

- Ans**
- ☐ 1. Carbonic acid
 - ☐ 2. Carbon monoxide only
 - ☐ 3. Carbon monoxide and water
 - ☒ 4. Carbon dioxide and water

Q.61 Which of the following statements about a colloidal solution is INCORRECT?

- Ans**
- ☒ 1. Components cannot be separated by the process of filtration.
 - ☒ 2. Colloidal solutions are a heterogeneous mixture.
 - ☒ 3. Milk is not a colloidal solution.
 - ☒ 4. Fog is an example of a colloidal solution.

Q.62 Organisms whose cells lack a nuclear membrane are called _____.

- Ans**
- ☒ 1. cytoplasm
 - ☒ 2. chromatin
 - ☒ 3. eukaryotes
 - ☒ 4. prokaryotes

Q.63 Asexual reproduction does NOT involve the formation of _____.

- Ans**
- ☒ 1. zygotes
 - ☒ 2. spores
 - ☒ 3. buds
 - ☒ 4. leaves

Q.64 Which of the following symbols were used by Bohr to represent different electron orbits in his atomic model?

- Ans**
- ☒ 1. R, S T, U, V....
 - ☒ 2. A, B, C, D, E....
 - ☒ 3. K, L, M, N, O....
 - ☒ 4. W, X, Y, Z, A....

Q.65 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All roses are lilies.

No lily is a marigold.

Conclusions:

(I) All lilies are roses.

(II) No rose is a marigold.

- Ans**
- ☒ 1. Only conclusion II follows
 - ☒ 2. Neither conclusion I nor II follows
 - ☒ 3. Both conclusions I and II follow
 - ☒ 4. Only conclusion I follows

Q.66 Who was appointed as the Head Coach of the Indian men's cricket team in July 2024?

- Ans**
- ☒ 1. MS Dhoni
 - ☒ 2. VVS Laxman
 - ☒ 3. Gautam Gambhir
 - ☒ 4. Rahul Dravid

Q.67 If each vowel in the word DREAMS is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter following it in the English alphabetical order and the set of letters thus arrived are then rearranged in English alphabetical order, then which of the following letters will be fourth from the right in the group of letters thus formed?

- Ans**
- ☒ 1. F
 - ☐ 2. N
 - ☐ 3. E
 - ☐ 4. S

Q.68 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All watches are perfumes.

No watch is a tie.

Conclusions:

(I) All perfumes are watches.

(II) No perfume is a tie.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☒ 2. Neither conclusion I nor II follows
 - ☐ 3. Only conclusion II follows
 - ☐ 4. Both conclusions I and II follow

Q.69 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 7 2 5 5 2 1 9 2 4 1 2 2 6 9 5 5 5 3 8 5 5 3 1 1 6 3 3 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 0
 - ☒ 2. 2
 - ☐ 3. 3
 - ☐ 4. 1

Q.70 If a 4-digit number $12z4$ is divisible by 4, then the greatest possible value of 'z' is:

- Ans**
- ☐ 1. 6
 - ☐ 2. 4
 - ☐ 3. 2
 - ☒ 4. 8

Q.71 If $AB = k + 3$, $BC = 2k$ and $AC = 4k - 5$, then for what value of 'k' does B lie on AC?

- Ans**
- ☐ 1. 3
 - ☒ 2. 8
 - ☐ 3. 2
 - ☐ 4. 5

Q.72 Which of the following metals is most ductile?

- Ans**
- ☐ 1. Lead
 - ☐ 2. Sodium
 - ☒ 3. Gold
 - ☐ 4. Lithium

Q.73 Where was the Ministry of Coal's first-ever coal gallery, an exhibition titled 'Black Diamond: Unveiling the Depths,' inaugurated in October 2024?

- Ans**
- ☐ 1. Raipur
 - ☒ 2. New Delhi
 - ☐ 3. Dhanbad
 - ☐ 4. Ranchi

Q.74 Which of the following correctly represents the relationship between u(object distance), v (image distance) and f (focal length) of a spherical mirror?

- Ans**
- ☐ 1. $\frac{1}{v} - \frac{1}{u} = \frac{1}{2f}$
 - ☐ 2. $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$
 - ☒ 3. $\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$
 - ☐ 4. $\frac{1}{v} + \frac{1}{u} = \frac{1}{2f}$

Q.75 If $y^3 = 0.008$, then the value of y^5 is:

- Ans**
- ☐ 1. 0.0032
 - ☐ 2. 0.000032
 - ☒ 3. 0.00032
 - ☐ 4. 0.032

Q.76 If a current of 1 A is flowing through a conductor for 10 secs, then the charge flowing through it (in coulombs) will be:

- Ans**
- ☒ 1. 10
 - ☐ 2. 100
 - ☐ 3. 1
 - ☐ 4. 0.1

Q.77 If a stone is thrown up, the value of acceleration due to gravity 'g' will be taken as _____.

- Ans**
- ☐ 1. zero
 - ☐ 2. infinite
 - ☐ 3. positive
 - ☒ 4. negative

Q.78 Divit starts from point A and drives 4 km towards the East. He then takes two simultaneous right turns and drives 2 km and 4 km, respectively. He takes another right turn and drives 5 km. He then takes a left turn and drives 3 km. He takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 3 km north
 - ☐ 2. 3 km South
 - ☒ 3. 3 km East
 - ☐ 4. 3 km West

Q.79 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only one person sits between F and G when counted from the right of F. Only one person sits between G and D when counted from right of G. Only one person sits between F and L when counted from left of F. Only two people sit between E and D when counted from left of D. Only one person sits between N and L when counted from right of N. Who sits to the immediate right and left of M, respectively?

- Ans**
- ☐ 1. N and E
 - ☐ 2. E and N
 - ☐ 3. D and E
 - ☒ 4. F and L

Q.80 The effective resistance of the parallel combination of two resistors is always _____.

- Ans**
- ☐ 1. greater than the resistance of the individual resistors
 - ☐ 2. equal to the product of resistance of the individual resistors
 - ☐ 3. equal to the sum of the resistance of the resistors
 - ☒ 4. less than the resistance of the individual resistors

Q.81 If $a + b + c = 9$ and $ab + bc + ca = 23$, then $a^2 + b^2 + c^2 = ?$

- Ans**
- ☐ 1. 127
 - ☒ 2. 35
 - ☐ 3. 25
 - ☐ 4. 58

Q.82 Which of the following options is the same as Newton's second law of motion?

- Ans**
- ☐ 1. The rate of change of momentum of an object is independent of the applied unbalanced force.
 - ☐ 2. Applied force on a body is inversely proportional to the acceleration of the body.
 - ☒ 3. If an object is in motion, applied force is directly proportional to the acceleration.
 - ☐ 4. An object at rest will remain at rest when external force is not applied.

Q.83 The ovule develops and gets converted into which of the following after fertilisation?

- Ans**
- ☐ 1. Fruit
 - ☒ 2. Seed
 - ☐ 3. Sepal
 - ☐ 4. Anther

Q.84 An electric lamp, whose resistance is $10\ \Omega$, and a conductor of $2\ \Omega$ resistance are connected to a $24\ \text{V}$ battery in series. Then the current through the circuit will be _____.

- Ans**
- ☒ 1. $2\ \text{A}$
 - ☐ 2. $3\ \text{A}$
 - ☐ 3. $1\ \text{A}$
 - ☐ 4. $4\ \text{A}$

Q.85 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. $13 -$ Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

$(6, 12, 48)$

$(8, 16, 64)$

- Ans**
- ☐ 1. $(15, 30, 130)$
 - ☐ 2. $(5, 30, 120)$
 - ☒ 3. $(15, 30, 120)$
 - ☐ 4. $(15, 40, 120)$

Q.86 Which of the following shows Tyndall effect?

- Ans**
- ☐ 1. Solutions
 - ☒ 2. Colloids
 - ☐ 3. Gases
 - ☐ 4. Metals

Q.87 The sum of the first five prime numbers is:

- Ans**
- ☐ 1. 27
 - ☒ 2. 28
 - ☐ 3. 29
 - ☐ 4. 26

Q.88 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

$19, 26, 33, 40, 47, ?$

- Ans**
- ☒ 1. 54
 - ☐ 2. 52
 - ☐ 3. 51
 - ☐ 4. 53

Q.89 Which of the given statements is/are correct?

- a) There are two types of waste: biodegradable and non-biodegradable.
- b) We should collect dry waste and wet waste separately.

- Ans**
- ☐ 1. Only b)
 - ☒ 2. Both a) and b)
 - ☐ 3. Neither a) nor b)
 - ☐ 4. Only a)

Q.90 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GKF JNI MQL PTO ?

- Ans**
- ☒ 1. SWR
 - ☐ 2. WRS
 - ☐ 3. WSR
 - ☐ 4. SRW

Q.91 Which part of the flower grows and ripens to form a fruit?

- Ans**
- ☐ 1. Pollen tube
 - ☐ 2. Petal
 - ☐ 3. Anther
 - ☒ 4. Ovary

Q.92 The value of acceleration due to gravity 'g' is _____.

- Ans**
- ☒ 1. greater at the poles than at the equator
 - ☐ 2. greater at the equator than at the poles
 - ☐ 3. the same at the poles and equator
 - ☐ 4. negative at the equator and positive at the poles

Q.93 Identify the process with the given description.

‘The seed contains the future plant or embryo which develops into a seedling under appropriate conditions’.

- Ans**
- ☐ 1. Regeneration
 - ☒ 2. Germination
 - ☐ 3. Plantation
 - ☐ 4. Fermentation

Q.94 Nine men went to a restaurant. Eight of them spent ₹3 each on their meals and the ninth spent ₹2 more than the average expenditure of all the nine. Determine the total money spent by them.

- Ans**
- ☒ 1. ₹29.25
 - ☐ 2. ₹30.25
 - ☐ 3. ₹32
 - ☐ 4. ₹35

Q.95 Genes that control the characteristics of a trait are located on:

- Ans**
- ☐ 1. lysosome
 - ☐ 2. vacuoles
 - ☒ 3. chromosomes
 - ☐ 4. endoplasmic reticulum

Q.96 Which team won the Khelo India Para Games 2023 held in New Delhi in December 2023?

- Ans**
- ☒ 1. Haryana
 - ☐ 2. Uttar Pradesh
 - ☐ 3. Gujarat
 - ☐ 4. Tamil Nadu

Q.97 A negative sign in magnification of spherical mirrors indicates that the _____.

- Ans**
- ☒ 1. image is real
 - ☐ 2. image is virtual
 - ☐ 3. image is enlarged
 - ☐ 4. image is diminished

Q.98 Which of the following has two ends: one which is hydrophilic and the other which is hydrophobic?

- Ans**
- ☐ 1. Perfume
 - ☒ 2. Soap
 - ☐ 3. Water
 - ☐ 4. Cream

Q.99 Nutrition is provided to the embryo from the mother's blood with the help of the:

- Ans**
- ☐ 1. oviduct
 - ☒ 2. placenta
 - ☐ 3. ovary
 - ☐ 4. scrotum

Q.100 Find the greatest number by which when the numbers 57, 95 and 211 are divided, it leaves the same remainder in each case.

- Ans**
- ☐ 1. 4
 - ☒ 2. 2
 - ☐ 3. 1
 - ☐ 4. 3

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	29/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Evaluate the given expression.

$$(-18) + 6 \div 3 + 5$$

- Ans
- ☒ 1. 11
 - ☒ 2. 1
 - ☒ 3. -1
 - ☒ 4. -11

Q.2 If each vowel in the word ARTICULATE is changed to the letter immediately following it in the English alphabetical order and each consonant is changed to the letter immediately preceding it in the English alphabetical order, then which of the following letters will appear more than twice in the group of letters thus formed?

- Ans
- ☒ 1. J
 - ☒ 2. K
 - ☒ 3. S
 - ☒ 4. B

Q.3 Different cell organelles such as mitochondria, ribosome, etc., together constitute the basic unit of life called the:

- Ans
- ☒ 1. tissue
 - ☒ 2. organ
 - ☒ 3. cell
 - ☒ 4. organ system

Q.4 Rani has borrowed an amount of ₹2,00,000 from a bank to start a business. How much simple interest will she pay at a rate of 7% per annum after 2 years?

- Ans
- ☒ 1. ₹28,500
 - ☒ 2. ₹28,000
 - ☒ 3. ₹26,000
 - ☒ 4. ₹24,000

Q.5 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. Only three people sit between R and E when counted from the left of R. Only two people sit between E and Q. B sits third to the right of Q. F sits to the immediate left of P. Who sits to the immediate right of A?

- Ans**
- ☐ 1. R
 - ☐ 2. Q
 - ☒ 3. B
 - ☐ 4. E

Q.6 If F_1 force is required to accelerate an object of 5 kg mass at 10 m s^{-2} and F_2 force to accelerate an object of 10 kg mass at 12 m s^{-2} , then which of the following statements is true?

- Ans**
- ☒ 1. $F_2 > F_1$
 - ☐ 2. $F_1 = F_2$
 - ☐ 3. $F_2 = -2 \times F_1$
 - ☐ 4. $F_1 > F_2$

Q.7 A, B, C alone can do a piece of work in 9, 12 and 18 days, respectively. They all started the work together, but A left after 3 days. In how many days was the remaining work completed?

- Ans**
- ☐ 1. $\frac{11}{4}$
 - ☐ 2. $\frac{5}{2}$
 - ☐ 3. 2
 - ☒ 4. $\frac{9}{5}$

Q.8 A pipe can fill a tank in 12 hours. Another pipe can empty the filled tank in 28 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans**
- ☐ 1. 14
 - ☐ 2. 21
 - ☐ 3. 28
 - ☒ 4. 7

Q.9 Gas to liquid and liquid to solid conversion is:

- Ans**
- ☒ 1. condensation and solidification respectively
 - ☐ 2. fusion and vaporisation respectively
 - ☐ 3. solidification and condensation respectively
 - ☐ 4. sublimation and fusion respectively

Q.10 Which of the following statements about the reaction of a non-metallic oxide with a base is/are correct?

Statement I: The reaction of non-metallic oxide with base produces salt and water.

Statement II: Non-metallic oxides are acidic in nature.

- Ans**
- ☐ 1. Only statement I is correct.
 - ☒ 2. Both statements I and II are correct.
 - ☐ 3. Neither statement I nor II is correct.
 - ☐ 4. Only statement II is correct.

Q.11 In a certain code language,
'P + Q' means 'P is the father of Q',
'P - Q' means 'P is the wife of Q',
'P x Q' means 'P is the brother of Q' and
'P ÷ Q' means 'P is the sister of Q'.
How is A related to E if 'A + B - C + D x E'?

- Ans**
- ☐ 1. Father's brother
 - ☒ 2. Mother's father
 - ☐ 3. Mother's brother
 - ☐ 4. Father's father

Q.12 In a certain code language, 'WHELP' is coded as '24681' and 'HELPS' is coded as '12674'. What is the code for 'W' in the given code language?

- Ans**
- ☐ 1. 1
 - ☐ 2. 4
 - ☐ 3. 2
 - ☒ 4. 8

Q.13 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
(4, 12, 48)
(7, 21, 84)

- Ans**
- ☐ 1. (5, 45, 180)
 - ☒ 2. (15, 45, 180)
 - ☐ 3. (15, 45, 170)
 - ☐ 4. (15, 25, 180)

Q.14 Which of the following statements is correct?

- Ans**
- ☐ 1. At maturity, the rate of general body growth in humans begins to get faster.
 - ☐ 2. In sexual mode of reproduction, germ-cells from one individual have to join together.
 - ☒ 3. At maturity, the rate of general body growth in humans begins to slow down.
 - ☐ 4. At maturity, the reproductive tissue stops to mature in humans.

Q.15 What is the energy currency for most cellular processes?

- Ans**
- ☒ 1. ATP
 - ☐ 2. NAD
 - ☐ 3. DNA
 - ☐ 4. RNA

Q.16 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All villas are buildings.

Some buildings are apartments.

Conclusions:

(I) All buildings are villas.

(II) Some villas are not apartments.

- Ans**
- ☒ 1. Only conclusion I follows
 - ☒ 2. Neither conclusion I nor II follows
 - ☒ 3. Only conclusion II follows
 - ☒ 4. Both conclusions I and II follow

Q.17 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

194, 249, 199, 244, 204, ?

- Ans**
- ☒ 1. 239
 - ☒ 2. 219
 - ☒ 3. 224
 - ☒ 4. 234

Q.18 What was India's rank out of 127 countries in the 2024 Global Hunger Index released in October 2024?

- Ans**
- ☒ 1. 99
 - ☒ 2. 111
 - ☒ 3. 97
 - ☒ 4. 105

Q.19 Protein digesting enzyme pepsin is secreted in the:

- Ans**
- ☒ 1. duodenum
 - ☒ 2. ileum
 - ☒ 3. stomach
 - ☒ 4. mouth

Q.20 To promote the dialogue of traditions, national values and cultures, India participated in the BRICS Literature Forum 2024 in _____.

- Ans**
- ☒ 1. Bhutan
 - ☒ 2. Russia
 - ☒ 3. China
 - ☒ 4. Nepal

Q.21 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two reasons explain(s) the event/observation/information given in the statement.

Statement:

Many trains on the Arakkonam–Chennai route are running several hours late today.

Reasons:

(I) Railways has decided to run two holiday special trains between Kolkata and Patna from November to December 2023.

(II) A major train accident occurred at Arakkonam Junction last night, where seven bogies of an express train derailed and fell across the tracks.

- Ans**
- ☐ 1. Neither I nor II is a possible reason
 - ☒ 2. Only II is a possible reason
 - ☐ 3. Both I and II are possible reasons
 - ☐ 4. Only I is a possible reason

Q.22 When a more reactive metal is placed in a salt solution containing a less reactive metal, it replaces the less reactive metal. This reaction is known as _____.

- Ans**
- ☐ 1. Neutralisation reaction
 - ☐ 2. Combination reaction
 - ☐ 3. Decomposition reaction
 - ☒ 4. Displacement reaction

Q.23 The cost of 2 tables and 3 chairs is ₹540, while that of 2 tables and 1 chair is ₹470. What is the cost of 35 chairs?

- Ans**
- ☐ 1. ₹1,185
 - ☐ 2. ₹1,205
 - ☐ 3. ₹1,245
 - ☒ 4. ₹1,225

Q.24 A porter lifts a luggage weighing 10 kg from the ground and puts it on his head 1 m above the ground. Then the work done by him on the luggage (g is acceleration due to gravity in SI unit) is _____.

- Ans**
- ☐ 1. 20g J
 - ☐ 2. 15g J
 - ☒ 3. 10g J
 - ☐ 4. 18g J

Q.25 In January 2024, what significant milestone did the Indian Air Force (IAF) achieve in terms of landing operations?

- Ans**
- ☒ 1. First successful night landing at the Kargil airfield with a C-130J Super Hercules
 - ☐ 2. First deployment of the Garud Special Forces using a C-130J Super Hercules
 - ☐ 3. First operation of a C-130J Super Hercules at the world's highest airstrip
 - ☐ 4. First landing of a C-130J Super Hercules aircraft at Daulat Beg Oldie

Q.26 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

153, 17
216, 24

Ans

- ☒ 1. 225, 35
- ☒ 2. 189, 31
- ☒ 3. 243, 27
- ☒ 4. 171, 18

Q.27 Which of the following statements is/are correct?

A) Zinc and lead are more reactive elements than copper.
B) Zinc and lead are less reactive elements than copper.
C) An iron nail become yellow in colour when it is dipped in the copper sulphate solutions.

Ans

- ☒ 1. Only A and C
- ☒ 2. Only A
- ☒ 3. Only C
- ☒ 4. Only A and B

Q.28 Convex mirrors are fitted on the sides of vehicles because they always give _____.

Ans

- ☒ 1. a real image
- ☒ 2. an erect and an enlarged image
- ☒ 3. a narrower field of the view
- ☒ 4. an erect and diminished image

Q.29 If the focal length of a lens is -25 cm, the power of the lens will be:

Ans

- ☒ 1. -0.04 D
- ☒ 2. $+4$ D
- ☒ 3. -4 D
- ☒ 4. $+0.04$ D

Q.30 Which team of Indian Space Research Organisation (ISRO) won the Vigyan Team award in 2024?

Ans

- ☒ 1. Chandrayaan-3 Team
- ☒ 2. Chandrayaan-2 Team
- ☒ 3. Aditya-L1 Team
- ☒ 4. XPoSat Team

Q.31 In which of the pairs of the following numbers is none of the two numbers a prime number, but the two numbers are co-primes?

Ans

- ☒ 1. (11, 17)
- ☒ 2. (19, 27)
- ☒ 3. (8, 25)
- ☒ 4. (21, 35)

Q.32 If the area of an equilateral triangle is $16\sqrt{3}$ sq cm, then the length of each side of the triangle is:

- Ans**
- ☒ 1. 10 cm
 - ☒ 2. 8 cm
 - ☒ 3. 12 cm
 - ☒ 4. 5 cm

Q.33 Using the empirical relation between the mean, median and mode, find the value of the mode if the median is 30 and mean is 25.

- Ans**
- ☒ 1. 40
 - ☒ 2. 60
 - ☒ 3. 50
 - ☒ 4. 30

Q.34 The value of $\frac{\sin^2 48^\circ + \sin^2 42^\circ}{\tan^2 40^\circ - \operatorname{cosec}^2 50^\circ}$ is:

- Ans**
- ☒ 1. 1
 - ☒ 2. 0
 - ☒ 3. -1
 - ☒ 4. 2

Q.35 If 50 is subtracted from 60% of a number, then the result is 40. 60% of the same number is:

- Ans**
- ☒ 1. 90
 - ☒ 2. 120
 - ☒ 3. 150
 - ☒ 4. 60

Q.36 Manju ranked 17th from the bottom and 8th from the top in his class. How many students are there in his class?

- Ans**
- ☒ 1. 25
 - ☒ 2. 24
 - ☒ 3. 23
 - ☒ 4. 22

Q.37 Study the following table and answer the question.

Number of candidates appeared and qualified in a competitive examination from different states over the years.

State	Year			
	2020		2021	
	Appeared	Qualified	Appeared	Qualified
A	500	100	600	150
B	600	200	800	250
C	400	50	500	100
D	300	60	400	80

For which state did the percentage of students qualified did NOT change from 2020 to 2021?

- Ans**
- ☒ 1. D
 - ☒ 2. C
 - ☒ 3. A
 - ☒ 4. B

Q.38 Carbon has the unique ability to form bonds with other atoms of carbon, giving rise to large molecules. This property is called _____.

- Ans**
- ☒ 1. Catenation
 - ☐ 2. Polymerisation
 - ☐ 3. Cyclisation
 - ☐ 4. Metallic bonding

Q.39 Which of the following statements is true?

- Ans**
- ☐ 1. The weight of an object is the power with which it is attracted towards the earth.
 - ☒ 2. The mass of an object is constant and does not change from place to place.
 - ☐ 3. The weight is equal to the product of velocity and acceleration due to gravity.
 - ☐ 4. The weight of an object is constant and does not change from place to place.

Q.40 If the mass of a football is 3 kg, then what would be its weight on the earth? (Given, $g = 9.8 \text{ m s}^{-2}$)

- Ans**
- ☐ 1. 35 N
 - ☒ 2. 29.4 N
 - ☐ 3. 25 N
 - ☐ 4. 30.5 N

Q.41 Sodium or potassium salt of long chain carboxylic acid is known as which of the following?

- Ans**
- ☐ 1. Both detergent and soap
 - ☐ 2. Micelle
 - ☒ 3. Soap
 - ☐ 4. Detergent

Q.42 A dentist usually uses:

- Ans**
- ☐ 1. a plano-convex mirror
 - ☐ 2. a convex mirror
 - ☒ 3. a concave mirror
 - ☐ 4. a plane mirror

Q.43 Which of the following is NOT a property of a colloid?

- Ans**
- ☐ 1. Particles of colloids do not settle down when left undisturbed.
 - ☐ 2. Colloids cannot be separated by filtration.
 - ☐ 3. Colloid is a heterogeneous mixture.
 - ☒ 4. Colloid is a homogeneous mixture.

Q.44 In an ecosystem, physical factors like temperature, rainfall, wind, soil and minerals are:

- Ans**
- ☐ 1. decomposers
 - ☒ 2. abiotic components
 - ☐ 3. biotic components
 - ☐ 4. living components

Q.45 A father's age is seven times that of his son's age. Three years from now, the age of the father will be five times that of his son's age. After how many years will their combined age be 58 years?

- Ans**
- ✓ 1. 5 years
 - ✗ 2. 6 years
 - ✗ 3. 4 years
 - ✗ 4. 2 years

Q.46 Who among the following scientists was the first to use a glass prism to discover the spectrum of sunlight?

- Ans**
- ✓ 1. Sir Isaac Newton
 - ✗ 2. Albert Einstein
 - ✗ 3. Prof CV Raman
 - ✗ 4. Archimedes

Q.47 If $x + \frac{1}{x} = 6$, then $x^2 + \frac{1}{x^2} = ?$

- Ans**
- ✗ 1. 38
 - ✗ 2. 36
 - ✓ 3. 34
 - ✗ 4. 32

Q.48 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group ?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ✗ 1. IPL
 - ✗ 2. ELH
 - ✓ 3. LSP
 - ✗ 4. CJF

Q.49 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ACY, MOK, YAW, KMI, ?

- Ans**
- ✗ 1. WZU
 - ✓ 2. WYU
 - ✗ 3. WZV
 - ✗ 4. WYV

Q.50 Which of the following methods is used for refining impure metals?

- Ans**
- ✓ 1. Electrolytic refining
 - ✗ 2. Oiling
 - ✗ 3. Galvanisation
 - ✗ 4. Painting

Q.51 The area (in cm^2) of an equilateral triangle whose altitude from vertex is 12 cm, is:

- Ans**
- ☐ 1. $27\sqrt{3}$
 - ☐ 2. $\frac{9\sqrt{3}}{2}$
 - ☐ 3. $\frac{9\sqrt{3}}{4}$
 - ☒ 4. $48\sqrt{3}$

Q.52 The mean proportional between two numbers is given as the positive square root of the product of those two numbers. If 72 is the mean proportional between 18 and y, then the value of y is:

- Ans**
- ☐ 1. 588
 - ☐ 2. 488
 - ☐ 3. 388
 - ☒ 4. 288

Q.53 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DJC, YEX, TZS, OUN, ?

- Ans**
- ☐ 1. JPM
 - ☐ 2. JRI
 - ☐ 3. JRM
 - ☒ 4. JPI

Q.54 Who among the following has been appointed as the chairperson of the Lokpal in February 2024?

- Ans**
- ☐ 1. Justice Rajiv Shakdher
 - ☐ 2. Justice Manmohan
 - ☒ 3. Justice Ajay Manikrao Khanwilkar
 - ☐ 4. Justice Suresh Kumar Kait

Q.55 The average of the eight numbers is 72. Find the least number if it is $\frac{1}{16}$ of the sum of the numbers.

- Ans**
- ☐ 1. 16
 - ☐ 2. 18
 - ☒ 3. 36
 - ☐ 4. 28

Q.56 24-carat gold is called _____.

- Ans**
- ☐ 1. spongy gold
 - ☐ 2. impure gold
 - ☒ 3. pure gold
 - ☐ 4. wrought gold

Q.57 Which of the following products is NOT formed when electricity is passed through an aqueous solution of sodium chloride?

Ans

- ☐ 1. Sodium hydroxide
- ☐ 2. Chlorine gas
- ☐ 3. Hydrogen gas
- ☒ 4. Oxygen gas

Q.58 If an object is placed in front of a concave mirror at a distance of 20 cm and the image is formed on the same side at a distance of 40 cm, then the magnification of the mirror will be:

Ans

- ☐ 1. +0.4
- ☐ 2. +2.0
- ☐ 3. -0.4
- ☒ 4. -2.0

Q.59 The number of prime numbers lying between 400 and 430 is:

Ans

- ☐ 1. 6
- ☐ 2. 5
- ☒ 3. 4
- ☐ 4. 3

Q.60 In a certain code language, 'FIRE' is coded as '3718' and 'FARE' is coded as '1438'. What is the code for 'A' in the given code language?

Ans

- ☒ 1. 4
- ☐ 2. 8
- ☐ 3. 3
- ☐ 4. 1

Q.61 The kinetic energy of a moving body of mass 'm' and velocity 'v' is _____.

Ans

- ☐ 1. inversely proportional to its mass and square of its velocity
- ☐ 2. directly proportional to its mass but inversely proportional to its velocity
- ☐ 3. directly proportional to its velocity but inversely proportional to its mass
- ☒ 4. directly proportional to its mass and square of its velocity

Q.62 What will come in the place of '?' in the following equation, if '+' and '+' are interchanged and '×' and '-' are interchanged?

$$27 \div 14 \times 21 + 3 - 4 = ?$$

Ans

- ☐ 1. 16
- ☐ 2. 10
- ☒ 3. 13
- ☐ 4. 15

Q.63 A dishonest shopkeeper pretends to sell his goods at cost price, but uses a false weights and gains $11\frac{1}{9}\%$. For a weight of a kg, he uses:

Ans

- ☒ 1. 900 gm weight
- ☐ 2. 950 gm weight
- ☐ 3. 850 gm weight
- ☐ 4. 875 gm weight

Q.64 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. DI – FK
 - ☒ 2. TY – VA
 - ☒ 3. XB – YC
 - ☒ 4. BG – DI

Q.65 Which of the following is NOT a sign of sexual maturity in girls?

- Ans**
- ☒ 1. Cracking of voice
 - ☒ 2. Increase in breast size
 - ☒ 3. Menstruation
 - ☒ 4. Oily skin

Q.66 The value of a machine depreciates at the rate of 10% per annum. If its present value is ₹1,62,000, then what was the value of the machine 2 years ago?

- Ans**
- ☒ 1. ₹2,00,000
 - ☒ 2. ₹2,04,000
 - ☒ 3. ₹1,90,000
 - ☒ 4. ₹1,86,000

Q.67 MPLO is related to RUQT in a certain way based on the English alphabetical order. In the same way, ILHK is related to NQMP. To which of the following options is FIEH related, following the same logic?

- Ans**
- ☒ 1. NKMJ
 - ☒ 2. KNMJ
 - ☒ 3. KNJM
 - ☒ 4. NKJM

Q.68 What is the process by which autotrophs take in substance from outside and in the presence of sunlight, convert them into stored forms of energy?

- Ans**
- ☒ 1. Photosynthesis
 - ☒ 2. Circulation
 - ☒ 3. Movement
 - ☒ 4. Digestion

Q.69 In how many years will a sum of ₹12,000 become ₹14,520 at a rate of 10% per annum on compound interest, compounded annually?

- Ans**
- ☒ 1. 5
 - ☒ 2. 2
 - ☒ 3. 4
 - ☒ 4. 3

Q.70 The Union Finance Minister, on 9 November 2024, inaugurated Nari Shakti Branches of which of the following banks in Bengaluru, Chennai, Visakhapatnam, and Jaipur?

- Ans**
- ☒ 1. Canara Bank
 - ☒ 2. Union Bank of India
 - ☒ 3. State Bank of India
 - ☒ 4. Bank of Baroda

Q.71 How much prize money was announced by the BCCI for the men's T20 cricket World Cup 2024 winner team?

- Ans**
- ☐ 1. ₹100 crore
 - ☐ 2. ₹50 crore
 - ☐ 3. ₹150 crore
 - ☒ 4. ₹125 crore

Q.72 A single discount equivalent to successive discounts of 40% and 20% is:

- Ans**
- ☐ 1. 55%
 - ☐ 2. 60%
 - ☒ 3. 52%
 - ☐ 4. 50%

Q.73 50 men took a dip in a water tank 40 m long and 20 m broad on a religious day. If the average displacement of water by a man is 4 m³, then the rise in the water level in the tank will be:

- Ans**
- ☐ 1. 35 cm
 - ☐ 2. 20 cm
 - ☐ 3. 50 cm
 - ☒ 4. 25 cm

Q.74 TQSO is related to MJLH in a certain way based on the English alphabetical order. In the same way, VSUQ is related to OLNJ. To which of the following options is ROQM related, following the same logic ?

- Ans**
- ☐ 1. HKJF
 - ☐ 2. HKFJ
 - ☐ 3. KHFJ
 - ☒ 4. KHJF

Q.75 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 6 5 8 6 4 9 5 2 2 4 4 9 3 0 7 5 7 2 9 9 8 8 1 9 1 3 7 2 5 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an even digit?

- Ans**
- ☐ 1. 3
 - ☐ 2. 0
 - ☐ 3. 4
 - ☒ 4. 1

Q.76 A body of mass m and a body of mass 4m are dropped from the same height, the ratio of the time taken by the two bodies to reach the ground would be:

(Air resistance is neglected)

- Ans**
- ☐ 1. 4:1
 - ☐ 2. 1:4
 - ☒ 3. 1:1
 - ☐ 4. 1:2

Q.77 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:


All oil is paint.


All paint is brush.


Conclusions:


(I) Some brushes are oil.

(II) No brush is oil.


Ans  1. Neither conclusion (I) nor (II) follows


 2. Both conclusions (I) and (II) follow


 3. Only conclusion (II) follows


 4. Only conclusion (I) follows

Q.78 The upward and downward growth of a plant is due to which of the following tropisms?

Ans  1. Geotropism


 2. Phototropism


 3. Hydrotropism


 4. Chemotropism

Q.79 Express the speed of 25 m/s in km/h.

Ans  1. 50 km/h


 2. 90 km/h


 3. 15 km/h


 4. 99 km/h

Q.80 Which of the following metals reacts with cold water?


Ans  1. Zinc


 2. Iron


 3. Aluminium


 4. Sodium

Q.81 Gastric glands present in the wall of the stomach do NOT release:


Ans  1. hydrochloric acid


 2. mucus


 3. saliva


 4. pepsin

Q.82 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 99?

Ans  1. 28 C 39 B 3 D 12 A 7

 2. 28 B 39 C 3 A 12 D 7

 3. 28 A 39 D 3 B 12 C 7

 4. 28 D 39 A 3 C 12 B 7

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Q.83 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✓ 1. TXV
 - ✗ 2. OSP
 - ✗ 3. JNK
 - ✗ 4. EIF

Q.84 Which of the following is produced when acid reacts with metals?

- Ans**
- ✗ 1. Only Salt
 - ✗ 2. Salt and water
 - ✗ 3. Only Hydrogen gas
 - ✓ 4. Salt and hydrogen gas

Q.85 ₹ 2,000 is divided between A and B such that half of A's part and one-third of B's part are equal. What is B's part (in ₹)?

- Ans**
- ✓ 1. 1,200
 - ✗ 2. 800
 - ✗ 3. 1,000
 - ✗ 4. 600

Q.86 Which of the following is NOT a role played by NITI Aayog in the localisation of SDGs in India?

- Ans**
- ✗ 1. Benchmarking states based on SDG performance metrics
 - ✓ 2. Preparing the National Indicator Framework (NIF)
 - ✗ 3. Serving as a platform for collaboration among states
 - ✗ 4. Fostering competitive federalism among states and UTs

Q.87 If the power of a lens is +1 Dioptre, then the focal length of the lens will be:

- Ans**
- ✗ 1. 0.5 m
 - ✗ 2. 0.25 m
 - ✓ 3. 1 m
 - ✗ 4. 0.75 m

Q.88 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. Only three people sit between B and L. C sits to the immediate left of L. No one sits to the right of Y. Only two people sit between Y and C. Z sits to the immediate right of A.

How many people sit between X and Z?

- Ans**
- ✓ 1. Two
 - ✗ 2. Three
 - ✗ 3. Four
 - ✗ 4. One

Q.89 In a circuit, suppose the three resistors having the values $5\ \Omega$, $10\ \Omega$, $20\ \Omega$ are connected in parallel; then equivalent resistance of the circuit will be _____.

- Ans**
- ☒ 1. $\frac{40}{7}\ \Omega$
 - ☒ 2. $\frac{20}{7}\ \Omega$
 - ☒ 3. $35\ \Omega$
 - ☒ 4. $20\ \Omega$

Q.90 The HCF of 240, 360 and 480 is:

- Ans**
- ☒ 1. 160
 - ☒ 2. 360
 - ☒ 3. 480
 - ☒ 4. 120

Q.91 Who among the following was appointed Indian men's cricket team's full time T20 international captain in July 2024?

- Ans**
- ☒ 1. Ravindra Jadeja
 - ☒ 2. Shubman Gill
 - ☒ 3. Suryakumar Yadav
 - ☒ 4. Hardik Pandya

Q.92 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 5 % 4 6 @ 8 \$ 7 & 3 Ω 9 2 % # 1 * £ 5 (Right)

How many such symbols are there, each of which is immediately preceded by an odd number and also immediately followed by an odd number?

- Ans**
- ☒ 1. More than two
 - ☒ 2. None
 - ☒ 3. Two
 - ☒ 4. One

Q.93 All activities inside the cell and interactions of the cell with its environment are possible due to three important features observed in almost every cell. Which are the three features?

- Ans**
- ☒ 1. Mitochondria, nucleus and cytoplasm
 - ☒ 2. Mitochondria, nucleus and Golgi apparatus
 - ☒ 3. Plasma membrane, nucleus and cytoplasm
 - ☒ 4. Plasma membrane, nucleus and Golgi apparatus

Q.94 The value of $[(10)^{150} \div (10)^{146}]$ is:

- Ans**
- ☒ 1. 10000
 - ☒ 2. 10^6
 - ☒ 3. 10^5
 - ☒ 4. 1000

Q.95 Select the correct statement related to the characteristics of prokaryotic cell.

- Ans**
- ✓ 1. It has a single chromosome.
 - ✗ 2. Nuclear region is well defined and surrounded by nuclear membrane.
 - ✗ 3. Membrane bound cell organelles are present.
 - ✗ 4. It has more than one chromosome.

Q.96 Read the given statements and select the correct option.

Statement I: Sarvepalli Radhakrishnan and C Rajagopalachari were the first recipients of the Bharat Ratna.

Statements II: Sachin Tendulkar was the first and only cricketer awarded with Bharat Ratna till 2024.

- Ans**
- ✓ 1. Both statement I and statement II are correct.
 - ✗ 2. Statement I is incorrect, while statement II is correct.
 - ✗ 3. Both statement I and statement II are incorrect.
 - ✗ 4. Statement I is correct, while statement II is incorrect.

Q.97 Besides products of photosynthesis, which of the following substances are transported by the phloem in plants?

- Ans**
- ✗ 1. Only Sucrose
 - ✗ 2. Only Water
 - ✓ 3. Both amino acids and sucrose
 - ✗ 4. Only Amino acids

Q.98 The rigid outer covering present outside the plasma membrane in plants is called the:

- Ans**
- ✗ 1. nuclear membrane
 - ✓ 2. cell wall
 - ✗ 3. selectively permeable membrane
 - ✗ 4. cell envelope

Q.99 Match the class of organic compounds (Column I) with the suffix used (Column II).

	Column I		Column II
(i)	Ketone	(a)	-al (-CHO)
(ii)	Alkene	(b)	-one (-C=O)
(iii)	Aldehyde	(c)	-ene (-C=C-)
(iv)	Carboxylic acid	(d)	-oic acid (-COOH)

- Ans**
- ✓ 1. (i)-(b); (ii)-(c); (iii)-(a); (iv)-(d)
 - ✗ 2. (i)-(b); (ii)-(c); (iii)-(d); (iv)-(a)
 - ✗ 3. (i)-(c); (ii)-(d); (iii)-(b); (iv)-(a)
 - ✗ 4. (i)-(c); (ii)-(b); (iii)-(a); (iv)-(d)

Q.100 Honey is produced by the honeybee. So, the honeybee is a _____.

- Ans
- ☐ 1. Decomposer
 - ☒ 2. primary consumer
 - ☐ 3. secondary consumer
 - ☐ 4. producer

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	29/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 An electric water heater converts electrical energy into _____.

- Ans
- ☒ 1. potential energy
 - ☒ 2. wind energy
 - ☒ 3. light energy
 - ☒ 4. heat energy

Q.2 Which of the following statements is/are correct related to transportation?

- (i) Arteries are the vessels which carry blood away from the heart to various organs of the body.
- (ii) The arteries have thin and elastic walls.
- (iii) Veins have valves that ensure that blood flows only in one direction.

- Ans
- ☒ 1. Only (i)
 - ☒ 2. Only (i) and (ii)
 - ☒ 3. Only (i) and (iii)
 - ☒ 4. (i), (ii) and (iii)

Q.3 A pipe can fill a tank in 9 hours. Another pipe can empty the filled tank in 36 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans
- ☒ 1. 4
 - ☒ 2. 8
 - ☒ 3. 12
 - ☒ 4. 16

Q.4 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GJN ILP KNR MPT ?

- Ans
- ☒ 1. ORV
 - ☒ 2. ROV
 - ☒ 3. RVO
 - ☒ 4. OVR

Q.5 What product will be formed when ethanol at 443K with excess concentrated sulphuric acid is heated?

- Ans**
- ☐ 1. Ethyne and hydrogen
 - ☐ 2. Ethane and water
 - ☒ 3. Ethene and water
 - ☐ 4. Only ethyne

Q.6 Known for its rich cultural heritage, which of the following is India's first UNESCO 'City of Literature'?

- Ans**
- ☐ 1. Bhopal
 - ☐ 2. Lucknow
 - ☒ 3. Kozhikode
 - ☐ 4. Jaipur

Q.7 Which of the following compounds is/are saturated?

- (i) C_2H_6
- (ii) C_3H_8
- (iii) C_2H_4
- (iv) C_4H_{10}

- Ans**
- ☒ 1. i, ii and iv
 - ☐ 2. i, ii and iii
 - ☐ 3. i and iv
 - ☐ 4. i and ii

Q.8 What product is formed in the chlor-alkali process?

- Ans**
- ☐ 1. Washing Soda
 - ☐ 2. Sodium Chloride
 - ☒ 3. Sodium Hydroxide
 - ☐ 4. Baking Soda

Q.9 The first and only disabled person to hold the position of State Commissioner for Persons with Disabilities in the history of state, awarded with Padma Shri in 2024, Dr. KS Rajanna belongs to which of the following Indian states?

- Ans**
- ☐ 1. Andhra Pradesh
 - ☐ 2. Tamil Nadu
 - ☒ 3. Karnataka
 - ☐ 4. Kerala

Q.10 A ray of light passing or appear to pass through the principal focus of a concave/convex mirror after reflection _____.

- Ans**
- ☒ 1. will emerge parallel to the principal axis
 - ☐ 2. will emerge perpendicular to the principal axis, only in the case of concave mirror
 - ☐ 3. will emerge perpendicular to the principal axis
 - ☐ 4. will emerge perpendicular to the principal axis, only in the case of convex mirror

Q.11 EHCF is related to ILGJ in a certain way based on the English alphabetical order. In the same way, HKFI is related to LOJM. To which of the following options is MPKN related, following the same logic?

- Ans**
- ☒ 1. QTOR
 - ☐ 2. TQRO
 - ☐ 3. QTRO
 - ☐ 4. TQOR

Q.12 Complex substances are broken down into simpler ones with the use of bio-catalysts called:

- Ans**
- ☐ 1. fat
 - ☐ 2. oil
 - ☐ 3. carbohydrates
 - ☒ 4. enzymes

Q.13 'Charaideo Moidam' of which of the following northeast Indian states were included in the UNESCO World Heritage list in July 2024?

- Ans**
- ☐ 1. Tripura
 - ☒ 2. Assam
 - ☐ 3. Nagaland
 - ☐ 4. Arunachal Pradesh

Q.14 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits second to the right of B. Only one person sits between B and E. R sits to the immediate right of F. P is not an immediate neighbour of E. Who sits third to the left of Q?

- Ans**
- ☐ 1. P
 - ☐ 2. R
 - ☐ 3. A
 - ☒ 4. F

Q.15 Flexibility in plants is due to:




- Ans**
- ☐ 1. sclerenchyma
 - ☒ 2. collenchyma
 - ☐ 3. cambium
 - ☐ 4. parenchyma

Q.16 In a triangular glass prism, there is/are _____.





- Ans**
- ☐ 1. one triangular base and three rectangular lateral surfaces
 - ☐ 2. three triangular bases and one rectangular lateral surface
 - ☒ 3. two triangular bases and three rectangular lateral surfaces
 - ☐ 4. three triangular bases and three rectangular lateral surfaces

Q.17 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?





18, 23, 33, 48, 68, ?

- Ans**
-  1. 90
 -  2. 93
 -  3. 85
 -  4. 95





Q.18 Identify the gas that is evolved when magnesium and manganese react with nitric acid.

- Ans**
-  1. Nitrogen gas
 -  2. Hydrogen gas
 -  3. Oxygen gas
 -  4. Helium gas

Q.19 In a certain code language,
'P + Q' means 'P is the brother of Q',
'P - Q' means 'P is the daughter of Q',
'P x Q' means 'P is the wife of Q' and
'P ÷ Q' means 'P is the son of Q'.
How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
-  1. Brother
 -  2. Daughter's son
 -  3. Son
 -  4. Son's son

Q.20 The value of Universal Gravitational constant is G on a certain planet of mass M, on another planet of mass 4M, the value of the Universal Gravitational constant will be:

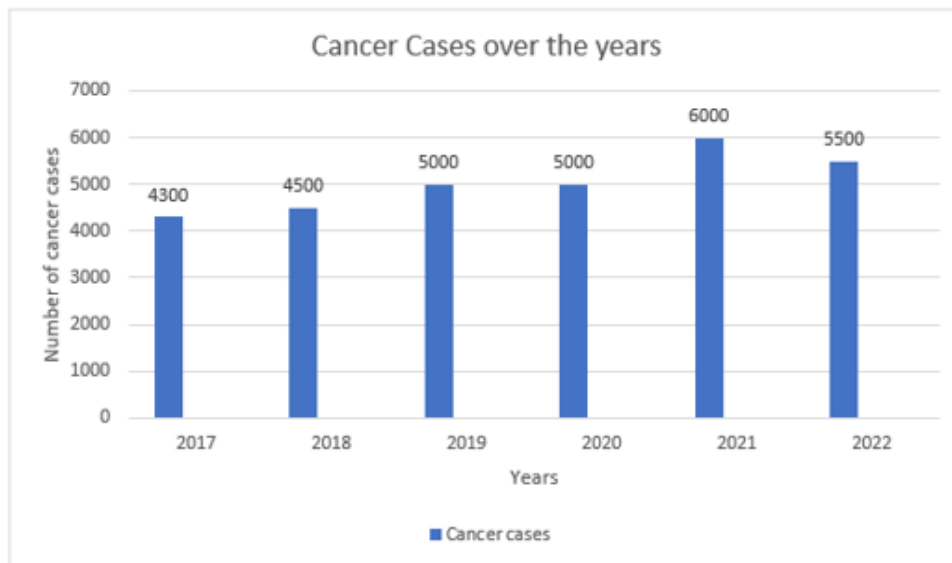
- Ans**
-  1. 4G
 -  2. G/2
 -  3. G
 -  4. Zero

Q.21 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
-  1. WT-XZ
 -  2. RO-SV
 -  3. UR-VX
 -  4. NK-OQ

Q.22 Study the following bar graph and answer the question below.



What is the average number of cancer cases over the years?

- Ans**
- ☐ 1. 5550
 - ☐ 2. 5005
 - ☒ 3. 5050
 - ☐ 4. 5500

Q.23 In an election between two candidates, the candidate who won received 1854 votes, whereas the candidate who lost received 618 votes. What percentage of the total number of votes received by the two candidates went in favour of the winning candidate?

- Ans**
- ☐ 1. 60%
 - ☒ 2. 75%
 - ☐ 3. 70%
 - ☐ 4. 80%

Q.24 A cistern 6m long and 4 m wide contains water up to a depth of 1 m 25 cm. The total area of the wet surface is:

- Ans**
- ☐ 1. 50 m²
 - ☐ 2. 53.5 m²
 - ☐ 3. 55 m²
 - ☒ 4. 49 m²

Q.25 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. No one sits to the right of A. Only four people sit between D and B. E sits second to the right of D. C sits to the immediate left of F. How many people sit between G and B?

- Ans**
- ☐ 1. Four
 - ☐ 2. Two
 - ☐ 3. One
 - ☒ 4. Three

Q.26 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HKO, JMQ, LOS, NQU, ?

- Ans**
- ☒ 1. SPW
 - ☒ 2. SWP
 - ☒ 3. PSW
 - ☒ 4. PWS

Q.27 If the mean and the mode of a particular data set are 36 and 63, respectively, then, using an empirical relation, find the value of the median of the same data set.

- Ans**
- ☒ 1. 55
 - ☒ 2. 45
 - ☒ 3. 40
 - ☒ 4. 39

Q.28 The ratio of the present ages of Manmohan and his wife Manpreet is 7 : 6. After 6 years, the ratio of their ages will be 8 : 7. If at the time of marriage, the ratio of their ages was 4 : 3, then how many years ago from now did they get married?

- Ans**
- ☒ 1. 13 years
 - ☒ 2. 18 years
 - ☒ 3. 16 years
 - ☒ 4. 15 years

Q.29 Who among the following are the founders of the Indian startup Zepto, who have emerged as the youngest billionaires in India according to the 2024 Hurun Rich List?

- Ans**
- ☒ 1. Kaivalya Vohra and Aadit Palicha
 - ☒ 2. Asit Biswal and Rajesh Pradhan
 - ☒ 3. Girish Redekar and Raghuveer Kancherla
 - ☒ 4. Kabeer Biswas and Ankur Agarwal

Q.30 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some walls are roofs.

All roofs are cats.

All cats are grasses.

Conclusions:

(I) Some grasses are walls.

(II) All grasses are roofs.

- Ans**
- ☒ 1. Only conclusion (II) follows.
 - ☒ 2. Neither conclusion (I) nor (II) follows.
 - ☒ 3. Only conclusion (I) follows.
 - ☒ 4. Both conclusions (I) and (II) follow.

Q.31 The sum of three consecutive multiples of 6 is 3240, find the smallest one.

- Ans**
- ☒ 1. 1054
 - ☒ 2. 1074
 - ☒ 3. 1006
 - ☒ 4. 1086

Q.32 The laws of reflection are applicable to _____.

- Ans**
- ☒ 1. both plane and spherical surfaces
 - ☒ 2. neither plane surfaces nor spherical surfaces
 - ☒ 3. only to spherical surface and not to plane surfaces
 - ☒ 4. only to plane surfaces and not to spherical surfaces

Q.33 Select the correct statement.

- Ans**
- ☒ 1. One oviduct forms the uterus.
 - ☒ 2. Many eggs are produced every month by the ovary.
 - ☒ 3. The fallopian tube is also known as womb.
 - ☒ 4. When a girl is born, the ovaries already contain thousands of immature eggs.

Q.34 What is used in the preparation of calcium sulphate hemihydrate?

- Ans**
- ☒ 1. Copper Sulphate
 - ☒ 2. Gypsum
 - ☒ 3. Sodium Hydrogen Carbonate
 - ☒ 4. Sodium Carbonate

Q.35 The chemical formula of ammonium sulphate is _____.

- Ans**
- ☒ 1. $(\text{NH}_4)_2\text{SO}_4$
 - ☒ 2. $(\text{NH}_4)\text{SO}_4$
 - ☒ 3. Ca_2SO_4
 - ☒ 4. Na_2SO_4

Q.36 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 26?

- Ans**
- ☒ 1. 29 A 34 D 2 B 4 C 5
 - ☒ 2. 29 C 34 A 2 D 4 B 5
 - ☒ 3. 29 B 34 C 2 A 4 D 5
 - ☒ 4. 29 D 34 B 2 C 4 A 5

Q.37 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

TODE - EOTD - ODTE

FAST - TAFS - ASFT

- Ans**
- ☒ 1. BACK - KABC - ACBK
 - ☐ 2. GREW - GERW - WERG
 - ☐ 3. NEST - TENS - SENT
 - ☐ 4. PACK - APCK - KACP

Q.38 What is the primary goal of the NASA-ISRO Synthetic Aperture Radar (NISAR) mission?

- Ans**
- ☐ 1. Space tourism
 - ☐ 2. Trade monitoring
 - ☒ 3. Climate action
 - ☐ 4. Defense satellites

Q.39 B is thrice as good a workman as A and therefore is able to finish a job in 60 days less than A. Working together, they can do it in:

- Ans**
- ☒ 1. $22\frac{1}{2}$ days
 - ☐ 2. 30 days
 - ☐ 3. 25 days
 - ☐ 4. 20 days

Q.40 In a certain code language, 'VOCAL' is coded as '46218' and 'OVALS' is coded as '68514'. What is the code for 'S' in the given code language?

- Ans**
- ☐ 1. 1
 - ☐ 2. 6
 - ☒ 3. 5
 - ☐ 4. 4

Q.41 The list price of a washing machine is ₹13,200. It is sold to a retailer after a 20% discount. What is the cost price of the washing machine to the retailer?

- Ans**
- ☒ 1. ₹10,560
 - ☐ 2. ₹10,660
 - ☐ 3. ₹11,560
 - ☐ 4. ₹11,660

Q.42 A resistor has a resistivity ρ . This resistor is now cut into three equal parts. The resistivity of each part will be:

- Ans**
- ☐ 1. 3ρ
 - ☐ 2. $\frac{\rho}{3}$
 - ☒ 3. ρ
 - ☐ 4. 6ρ

Q.43 A perfect square number can never have the digit _____ at the units' place.

- Ans**
- ☐ 1. 1
 - ☐ 2. 9
 - ☐ 3. 4
 - ☒ 4. 8

Q.44 Which of the following metals is least reactive with acids?

- Ans**
- ☐ 1. Zinc
 - ☐ 2. Iron
 - ☐ 3. Aluminium
 - ☒ 4. Copper

Q.45 A constant force F is applied on an object. The work done by the force is positive if the object:

- Ans**
- ☐ 1. Is displaced opposite to the direction of the force
 - ☒ 2. is displaced in the direction of the force
 - ☐ 3. is displaced perpendicular to the force
 - ☐ 4. is not displaced

Q.46 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 7 & 3 Ω 9 5 & 4 6 @ 8 \$ # 1 * £ 5 (Right)

How many such symbols are there, each of which is immediately preceded by an even number and also immediately followed by an odd number?

- Ans**
- ☐ 1. One
 - ☐ 2. More than two
 - ☒ 3. None
 - ☐ 4. Two

Q.47 At what rate (in percentage) per annum simple interest will a sum of money double itself in 8 years?

- Ans**
- ☐ 1. 5.6%
 - ☒ 2. 12.5%
 - ☐ 3. 2.5%
 - ☐ 4. 6.25%

Q.48 A ribbon of length 8 m 54 cm is cut into 7 pieces of equal length. The length of each piece is:

- Ans**
- ☒ 1. 1.22 m
 - ☐ 2. 1.32 m
 - ☐ 3. 1.12 m
 - ☐ 4. 1.02 m

Q.49 Simplify the following expression:

$$\frac{\cos \theta}{1 + \sin \theta} + \frac{1 + \sin \theta}{\cos \theta}$$

- Ans
- ☒ 1. $2 \sec \theta$
 - ☐ 2. $1 + 2 \sin \theta$
 - ☐ 3. $2 \sin \theta$
 - ☐ 4. $2 \cos \theta$

Q.50 Find the value of $(10001 + 12)(10001 - 12)$.

- Ans
- ☐ 1. 1000019857
 - ☐ 2. 10019857
 - ☐ 3. 1000190857
 - ☒ 4. 100019857

Q.51 Which of the following is a function of epithelial tissues?

- Ans
- ☐ 1. Responsible for involuntary movements
 - ☐ 2. Provides response to stimulus
 - ☒ 3. Protection
 - ☐ 4. Storage of fats

Q.52 Which of the following statements is/are true for the gravitational force between two bodies:

- (i) It is repulsive in nature.
- (ii) It's magnitude is same throughout the universe.
- (iii) It is directly proportional to the product of the masses of the bodies.
- (iv) Due to this force the earth goes around the sun.

- Ans
- ☐ 1. Both (i) and (ii)
 - ☐ 2. Only (iii)
 - ☐ 3. Both (ii) and (iii)
 - ☒ 4. Both (iii) and (iv)

Q.53 Apical meristem is present in which of the following?

- Ans
- ☒ 1. Plants
 - ☐ 2. Animals
 - ☐ 3. Bacteria
 - ☐ 4. Virus

Q.54 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

274, 252, 282, 260, 290, 268, ?

- Ans**
- ☐ 1. 272
 - ☐ 2. 280
 - ☐ 3. 284
 - ☒ 4. 298

Q.55 Rajiv starts from point A and drives 2 km towards the West. He then takes a right turn and drives 1 km. He then takes a left turn and drives 3 km. He takes another left turn and drives 1 km. He then takes a final left turn and drives 4 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 1 km South
 - ☒ 2. 1 km East
 - ☐ 3. 1 km West
 - ☐ 4. 1 km North

Q.56 Which team won the title of World Championship of Legends 2024 in cricket?

- Ans**
- ☐ 1. Pakistan
 - ☐ 2. Sri Lanka
 - ☐ 3. Australia
 - ☒ 4. India

Q.57 Which Australian vessel participated in Exercise Malabar, 2024?

- Ans**
- ☐ 1. HMAS Sydney
 - ☒ 2. HMAS Stuart
 - ☐ 3. HMAS Hobart
 - ☐ 4. HMAS Adelaide

Q.58 The number of chromosomes become half in a daughter cell by the process of:

- Ans**
- ☐ 1. binary fission
 - ☐ 2. amitosis
 - ☐ 3. mitosis
 - ☒ 4. meiosis

Q.59 In a mixture of 80 litres, the ratio of milk to water is 3 : 1. The quantity of milk in the mixture is:

- Ans**
- ☐ 1. 40 litres
 - ☐ 2. 80 litres
 - ☐ 3. 20 litres
 - ☒ 4. 60 litres

Q.60 When did the National Human Rights Commission (NHRC) issue an advisory to the Centre, the states and UT administrations to ensure widows' welfare and the protection of their human rights, including the establishment of a 'widows' cell' in each district?

- Ans**
- ☒ 1. June 2024
 - ☐ 2. April 2024
 - ☐ 3. May 2024
 - ☐ 4. August 2024

Q.61 Rajveer has invested ₹16,000 at 10% p.a. for 1 year on compound interest, compounded half-yearly. The amount received by him will be:

- Ans**
- ☐ 1. ₹16,354
 - ☐ 2. ₹17,830
 - ☐ 3. ₹16,542
 - ☒ 4. ₹17,640

Q.62 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tigers are lions.

Some lions are cheetahs.

Conclusions:

I. Some lions are tigers.

II. Some tigers are cheetahs.

- Ans**
- ☐ 1. Only conclusion II follows
 - ☐ 2. Neither conclusion I nor II follows
 - ☐ 3. Both conclusions I and II follow
 - ☒ 4. Only conclusion I follows

Q.63 Which of the following non-metals is liquid at room temperature?

- Ans**
- ☐ 1. Fluorine
 - ☐ 2. Oxygen
 - ☐ 3. Mercury
 - ☒ 4. Bromine

Q.64 Which of the following is the longest cell in our body?

- Ans**
- ☒ 1. Nerve cell
 - ☐ 2. Ovum
 - ☐ 3. Blood cell
 - ☐ 4. Fat cell

Q.65 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. Only two boxes are kept between L and B. Only A is kept above E. No box is kept below B. M is kept at some place below F but at some place above P. Which box is kept third above P?

- Ans**
- ☐ 1. L
 - ☐ 2. E
 - ☐ 3. A
 - ☒ 4. F

Q.66 _____ தண்டு அல்லது வேரை விட்டத்தில் பெரிதாக்குகிறது.

- Ans**
- ☐ 1. பக்கவாட்டு பிரியிழையம் (Underneath meristem)
 - ☐ 2. நுனி ஆக்கு திசு (Apical meristem)
 - ☒ 3. காம்பியம்(Cambium)
 - ☐ 4. இடைஆக்குத் திசு (Intercalary meristem)

Q.67 Which of the following is NOT the correct relation between electric power (P), electric current(I), electric potential difference (V) and resistance(R):

- Ans**
- ☐ 1. $P = \frac{V^2}{R}$
 - ☐ 2. $P = VI$
 - ☐ 3. $P = I^2 R$
 - ☒ 4. $P = IR$

Q.68 Which of the following statements is NOT true regarding the particles of matter?

- Ans**
- ☐ 1. They attract each other.
 - ☒ 2. They do not have spaces in between them.
 - ☐ 3. They are very small.
 - ☐ 4. They are moving constantly.

Q.69 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged?

$$23 - 7 \times 15 \div 5 + 17 = ?$$

- Ans**
- ☐ 1. 30
 - ☐ 2. 24
 - ☒ 3. 27
 - ☐ 4. 25

Q.70 The radius of curvature of any mirror is +20 cm. What is the focal length and nature of this mirror?

- Ans**
- ☐ 1. -40 cm, convex
 - ☒ 2. +10 cm, convex
 - ☐ 3. +40 cm, concave
 - ☐ 4. +10 cm, concave

Q.71 Which of the following hydrocarbons generally produces a clean flame?

- Ans**
- ☐ 1. Ethylene
 - ☒ 2. Ethane
 - ☐ 3. Ethene
 - ☐ 4. Ethyne

Q.72 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) & % 4 6 @ 8 S & 3 Ω 2 7 5 9 # 1 * £ 1 + & @ 5 (Right)

If all the symbols are dropped from the series, which of the following will be sixth from the right?

- Ans**
- ☐ 1. 7
 - ☐ 2. 3
 - ☐ 3. 1
 - ☒ 4. 2

Q.73 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 56 :: 84 : Y

- Ans**
- ☒ 1. X = 96, Y = 54
 - ☒ 2. X = 92, Y = 48
 - ☒ 3. X = 108, Y = 62
 - ☒ 4. X = 98, Y = 32

Q.74 The equivalent fraction of 5.2222..... is:

- Ans**
- ☒ 1. $\frac{47}{9}$
 - ☒ 2. $\frac{48}{100}$
 - ☒ 3. $\frac{422}{99}$
 - ☒ 4. $\frac{38}{9}$

Q.75 Which of the following electrolytes is used in electrolytic refining of copper?

- Ans**
- ☒ 1. CuO
 - ☒ 2. Cu_2Cl_2
 - ☒ 3. Na_2SO_4
 - ☒ 4. CuSO_4

Q.76 What is the direction of the magnetic field produced by a current carrying straight wire?

- Ans**
- ☒ 1. Parallel to the plane of the wire
 - ☒ 2. At an angle 45° to the plane of the wire
 - ☒ 3. Perpendicular to the plane of the wire
 - ☒ 4. At an angle 60° to the plane of the wire

Q.77 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Noise pollution is an invisible danger. It cannot be seen, but it is present nonetheless, both on land and under the sea. Noise pollution is considered to be any unwanted or disturbing sound that affects the health and well-being of humans and other organisms.

Reasons:

- I. Some of its major causes are vehicles, aircraft, industrial machines, loudspeakers, crackers, etc.
- II. When used at high volume, some other appliances also contribute to noise pollution, like television, transistor, radio, etc.

- Ans**
- ☒ 1. Only II is a possible reason.
 - ☒ 2. Neither I nor II is a possible reason.
 - ☒ 3. Only I is a possible reason.
 - ☒ 4. Both I and II are possible reasons.

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Q.78 Who among the following players won the men's player of the year award in the Hockey India Awards 2023 that was held in New Delhi on 31 March 2024?

- Ans**
- ☒ 1. Hardik Singh
 - ☐ 2. Abhishek
 - ☐ 3. Manpreet Singh
 - ☐ 4. PR Sreejesh

Q.79 In a certain code language, 'CARD' is coded as '5193' and 'ROSE' is coded as '8612'. What is the code for 'R' in the given code language?

- Ans**
- ☐ 1. 8
 - ☐ 2. 9
 - ☐ 3. 5
 - ☒ 4. 1

Q.80 In $\triangle ABC$, $BD \perp AC$ at D and $\angle DBC = 54^\circ$. E is a point on BC such that $\angle CAE = 34^\circ$. What is the measure of $\angle AEB$?

- Ans**
- ☐ 1. 56°
 - ☒ 2. 70°
 - ☐ 3. 78°
 - ☐ 4. 80°

Q.81 Which of the following alcohols is used in cough syrups?

- Ans**
- ☒ 1. Ethanol
 - ☐ 2. Methanol
 - ☐ 3. Propanol
 - ☐ 4. Ethanoic acid

Q.82 Which of the following statements is NOT true?

- Ans**
- ☐ 1. The total energy before and after the transformation always remains constant.
 - ☐ 2. Energy can neither be created nor destroyed.
 - ☒ 3. The total energy before and after the transformation is not constant.
 - ☐ 4. Energy can only be transformed from one form to another.

Q.83 Which type of reproduction is seen in Spirogyra?

- Ans**
- ☐ 1. Vegetative propagation
 - ☐ 2. Budding
 - ☒ 3. Fragmentation
 - ☐ 4. Binary fission

Q.84 If a 3-digit number 42a is divisible by 9, then the value of digit 'a' is:

- Ans**
- ☐ 1. 9
 - ☐ 2. 1
 - ☐ 3. 6
 - ☒ 4. 3

Q.85 Match Pradhan Mantri Mudra Yojana Categories with the Loan Amount as updated in the Union Budget 2023-24 and select the correct answer.

List I (Mudra Loans Categories) List II (Loan Amount)

(1) Shishu (A). Upto ₹50,000

(2) Kishor (B). Above ₹50,000 and up to ₹5 lakh

(3) Tarun (C) Above ₹5 lakh and up to ₹10 lakh

(4) Tarun Plus (D). Above ₹10 lakh and up to ₹20 lakh

Codes:

Ans ☐ 1. 1 - B, 2 - A, 3 - D, 4 - C

☐ 2. 1 - A, 2 - C, 3 - B, 4 - D

☐ 3. 1 - A, 2 - B, 3 - D, 4 - C

☒ 4. 1 - A, 2 - B, 3 - C, 4 - D

Q.86 The greatest ratio out of 2 : 3, 5 : 4, 3 : 2 and 4 : 5 is:

Ans ☐ 1. 2 : 3

☐ 2. 5 : 4

☐ 3. 4 : 5

☒ 4. 3 : 2

Q.87 Due to a reduction of 6.25% in the price of sugar, a man can buy 1 kg more for ₹120. The reduced price per kg of sugar is:

Ans ☒ 1. ₹7.5

☐ 2. ₹7

☐ 3. ₹8

☐ 4. ₹6.5

Q.88 Select the correct option related to the function regulated by ovaries.

Ans ☐ 1. Stimulates growth in all organs

☒ 2. Menstrual cycle

☐ 3. Stimulates pituitary glands

☐ 4. Regulates metabolism

Q.89 If a person covers 90 km at a speed of 45 km/h and another distance of 150 km at a speed of 50 km/h, then his average speed for the whole journey is:

Ans ☐ 1. 46 km/h

☒ 2. 48 km/h

☐ 3. 49 km/h

☐ 4. 47 km/h

Q.90 Find the arithmetic mean of the given frequency distribution.

Marks	Frequency
50	3
28	4
85	6
40	7

- Ans**
- ☐ 1. 56.2
 - ☐ 2. 50.5
 - ☒ 3. 52.6
 - ☐ 4. 40.95

Q.91 By what per cent does the curved surface area of a cylinder decrease, if the radius is increased by 30% and the height is decreased by 30%?

- Ans**
- ☐ 1. 0%
 - ☐ 2. 30%
 - ☐ 3. 60%
 - ☒ 4. 9%

Q.92 Pure ghee costs ₹100 per kg. After adulterating it with vegetable oil costing ₹50 per kg, a shopkeeper sells the mixture at the rate of ₹96 per kg, thereby making a profit of 20%. In what ratio does he mix the two?

- Ans**
- ☐ 1. 1 : 2
 - ☐ 2. 3 : 1
 - ☐ 3. 4 : 1
 - ☒ 4. 3 : 2

Q.93 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. FCG
 - ☐ 2. IFK
 - ☐ 3. QNS
 - ☐ 4. LIN

Q.94 Which of the following is the valency of carbon in ethene?

- Ans**
- ☐ 1. Three
 - ☐ 2. Six
 - ☒ 3. Four
 - ☐ 4. Two

Q.95 A tin of biscuits weighs 1 kg 750 g. What is the total weight of 7 such tins?

- Ans**
- ☒ 1. 12.250 kg
 - ☐ 2. 12.350 kg
 - ☐ 3. 12.050 kg
 - ☐ 4. 12.150 kg

Q.96 The position(s) of how many letters will remain unchanged if each of the letters in the word DEFAULT is arranged in the English alphabetical order ?

- Ans**
- ☒ 1. 0
 - ☐ 2. 2
 - ☐ 3. 1
 - ☐ 4. 3

Q.97 In Bryophyllum, vegetative propagation takes place by:

- Ans**
- ☐ 1. pistil
 - ☐ 2. petal
 - ☐ 3. stamen
 - ☒ 4. buds produced in the notches along the leaf margin

Q.98 The contraction and relaxation of which of the following results in movement of the organ?

- Ans**
- ☐ 1. Cartilages
 - ☒ 2. Muscle cells
 - ☐ 3. Bones
 - ☐ 4. Nerve cells

Q.99 When we stretch a spring, the form of energy stored in the spring is _____.

- Ans**
- ☐ 1. electric energy
 - ☒ 2. potential energy
 - ☐ 3. gravitational energy
 - ☐ 4. kinetic energy

Q.100 Which of the following is a biodegradable substance?

- Ans**
- ☒ 1. Dead plant
 - ☐ 2. Glass
 - ☐ 3. Electric wire
 - ☐ 4. Plastic bag

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रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	29/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Convert the decimal number $0.\overline{33}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

- Ans
- ☒ 1. $\frac{1}{99}$
 - ☒ 2. $\frac{1}{3}$
 - ☒ 3. $\frac{1}{33}$
 - ☒ 4. $\frac{1}{9}$

Q.2 An object is placed in front of a concave mirror of focal length f, and it is found that an image of the same size as that of the object is formed. The object distance u is:

- Ans
- ☒ 1. less than f
 - ☒ 2. equal to 2f
 - ☒ 3. greater than 2f
 - ☒ 4. equal to f

Q.3 Identify the INCORRECT statement related to neurons.

- Ans
- ☒ 1. Neurons typically have one long section called the axon.
 - ☒ 2. Each neuron has multiple short, branching sections called dendrites.
 - ☒ 3. Nervous tissue consists of cells known as neurons.
 - ☒ 4. The cell body of a neuron has many nuclei.

Q.4 The energy transfer within the food web has a _____ pattern.

- Ans
- ☒ 1. Unidirectional
 - ☒ 2. Circular
 - ☒ 3. Multidimensional
 - ☒ 4. Bidirectional

Q.5 A shopkeeper lists the price of a fan at 22% above its cost price and offers a 15% discount on its list price. What is the cost price (in ₹) of the fan if he sells it at ₹5,185?

- Ans**
- ☐ 1. 4,800
 - ☒ 2. 5,000
 - ☐ 3. 4,500
 - ☐ 4. 5,680

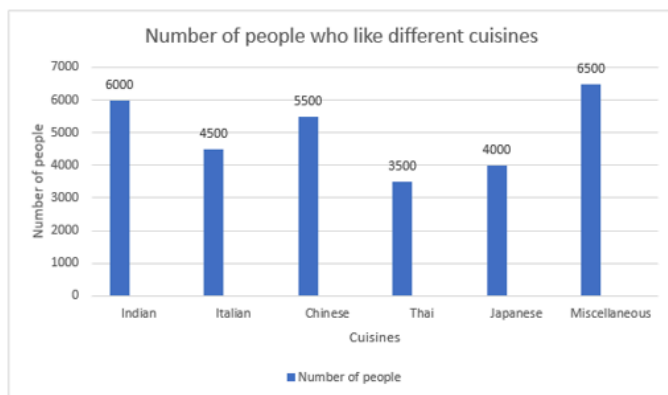
Q.6 What will happen if you pour some acetone on your palm?

- Ans**
- ☐ 1. It will cause no effect on the palm.
 - ☒ 2. It will cause the palm to feel cool.
 - ☐ 3. It will cause the palm to feel hot.
 - ☐ 4. It will cause the palm to feel itchy.

Q.7 Select the INCORRECT pair.

- Ans**
- ☒ 1. Lactic acid – 4 carbon molecules
 - ☐ 2. Pyruvate – 3 carbon molecules
 - ☐ 3. Glucose – 6 carbon molecules
 - ☐ 4. Ethanol – 2 carbon molecules

Q.8 Study the following bar graph and answer the question below.



What is the average number of people who like Indian, Chinese, Thai and miscellaneous cuisines?

- Ans**
- ☐ 1. 5535
 - ☐ 2. 5735
 - ☐ 3. 5355
 - ☒ 4. 5375

Q.9 Which of the following is produced when copper is heated in the presence of air?

- Ans**
- ☒ 1. Black-coloured copper (II) oxide
 - ☐ 2. Brown-coloured copper(II) oxide
 - ☐ 3. Black-coloured copper (I) oxide
 - ☐ 4. Blue-coloured copper(II) oxide

Q.10 What was the speed of the car if it travelled 150 km of distance in 3 hrs?

- Ans**
- ☐ 1. 40 km/h
 - ☒ 2. 50 km/h
 - ☐ 3. 36 km/h
 - ☐ 4. 42 km/h

Q.11 Who among the following won the first 'MTArt Agency x India Art Fair Artist Prize' during the 15th India Art Fair held in February 2024?

- Ans**
- ☐ 1. Asha Parekh
 - ☐ 2. Devika Rani
 - ☒ 3. Sajid Wajid Sheikh
 - ☐ 4. Birendranath Sircar

Q.12 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

WILD - IWLD - WLDI

TALK - ATLK - TLKA

- Ans**
- ☐ 1. FAIL - AFIL - LAIF
 - ☒ 2. VICE - IVCE - VCEI
 - ☐ 3. BOSE - OBSE - OSEB
 - ☐ 4. RICE - RCIE - ECIR

Q.13 Town L is to the south of Town B. Town Q is to the south-east of Town B. Town N is to the north of Town Q. Town M is to the west of Town B. Town N is to the east of Town M. Town L is to the south-west of Town N. What is the position of Town B with respect to Town N?

- Ans**
- ☐ 1. East
 - ☐ 2. North
 - ☒ 3. West
 - ☐ 4. South

Q.14 A current of 1 A is drawn by a filament of an electric bulb for 5 minutes. Then the amount of electric charge that flows through the circuit will be _____.

- Ans**
- ☐ 1. 150 C
 - ☐ 2. 10 C
 - ☒ 3. 300 C
 - ☐ 4. 5 C

Q.15 The kinetic energy E possessed by an object of mass m and moving with a uniform velocity v is _____.

- Ans**
- ☐ 1. $\frac{1}{3} m v^2$
 - ☒ 2. $\frac{1}{2} m v^2$
 - ☐ 3. $m v^2$
 - ☐ 4. $m v^{-2}$

Q.16 The sodium or potassium salts of which acid are defined as soaps?

- Ans**
- ☐ 1. Sulphuric acid
 - ☐ 2. Hydrochloric acid
 - ☒ 3. Carboxylic acid
 - ☐ 4. Nitric acid

Q.17 Seven boxes A, B, E, F, L, M and P are kept one over the other but not necessarily in the same order. Only A is kept above E. Only F is kept between E and B. Only P is kept below M. How many boxes are kept between L and P?

- Ans**
- ☒ 1. One
 - ☐ 2. Three
 - ☐ 3. Four
 - ☐ 4. Two

Q.18 Which of the following statements is correct when an acid is dissolved in water ?

- a) The separation of H^+ ions from HCl molecules cannot occur in the absence of water.
- b) Hydrogen ions must always be shown as H^+ (aq) or hydronium ion (H_3O^+).

- Ans**
- ☐ 1. Only a
 - ☐ 2. Neither a nor b
 - ☒ 3. Both a and b
 - ☐ 4. Only b

Q.19 Which of the following was discovered by Rutherford's gold foil experiment?

- Ans**
- ☐ 1. Electron
 - ☐ 2. Proton
 - ☒ 3. Nucleus
 - ☐ 4. Neutron

Q.20 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

36, 72, 45, 90, 63, 126, ?

- Ans**
- ☐ 1. 95
 - ☒ 2. 99
 - ☐ 3. 106
 - ☐ 4. 83

Q.21 Who among the following concluded his tenure as the 50th Chief Justice of India in November 2024?

- Ans**
- ☐ 1. Justice Abhay S Oka
 - ☐ 2. Justice Sanjeev Khanna
 - ☒ 3. Justice DY Chandrachud
 - ☐ 4. Justice Surya Kant

Q.22 If the earth had no atmosphere, then the colour of the sky would be _____.

- Ans**
- ☒ 1. black
 - ☐ 2. blue
 - ☐ 3. yellow
 - ☐ 4. red

Q.23 There are two classrooms A and B having a certain number of students. If 5 students are shifted from A to B, then B has twice the number of students as A. If 1 student is sent from B to A, then both classrooms will have the same number of students. How many students are there in B?

- Ans**
- ☐ 1. 22
 - ☐ 2. 17
 - ☒ 3. 19
 - ☐ 4. 26

Q.24 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 9 @ 8 \$ 7 & 3 Ω 9 # 1 * £ 5 & % 4 6 (Right)

How many such symbols are there, each of which is immediately preceded by an odd number and also immediately followed by a symbol?

- Ans**
- ☐ 1. More than two
 - ☒ 2. Two
 - ☐ 3. One
 - ☐ 4. None

Q.25 The Finance Minister, in the Union Budget 2024-25, announced the increased loan limit to ₹20 lakhs from the existing ₹10 lakhs of which of the following schemes?

- Ans**
- ☐ 1. Stand-Up India Scheme
 - ☐ 2. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)
 - ☐ 3. Prime Minister's Employment Generation Programme (PMEGP)
 - ☒ 4. Pradhan Mantri MUDRA Yojana (PMMY)

Q.26 The speed of light is _____.

- Ans**
- ☐ 1. greater in glass than in water
 - ☐ 2. same in air, glass and water
 - ☐ 3. greater in water than in air
 - ☒ 4. greater in water than in glass

Q.27 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 19-times of the same work in _____(days).

- Ans**
- ☐ 1. 77
 - ☐ 2. 4
 - ☒ 3. 76
 - ☐ 4. 5

Q.28 Which of the following is the general formula of alkane?

- Ans**
- ☐ 1. $C_{2n}H_{2n}$
 - ☐ 2. C_nH_{2n}
 - ☐ 3. C_nH_n
 - ☒ 4. C_nH_{2n+2}

Q.29 Which of the following is NOT a suitable method to deal with non-biodegradable substances?

- Ans**
- ☐ 1. Reuse them
 - ☐ 2. Reduce their production
 - ☒ 3. Throw them openly
 - ☐ 4. Recycle them

Q.30 Devansh starts from point A and drives 10 km towards the North. He takes two simultaneous right turns and drives 3 km and 6 km, respectively. He takes a final right turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 3 km East
 - ☐ 2. 4 km North
 - ☐ 3. 6 km South
 - ☒ 4. 4 km South

Q.31 Find the compound interest on ₹12,000 in 3 years at a rate of 10% per annum, compounded annually.

- Ans**
- ☐ 1. ₹3,872
 - ☐ 2. ₹3,672
 - ☐ 3. ₹3,772
 - ☒ 4. ₹3,972

Q.32 If a constant force of 2 Newton is applied on a body such that displacement of the body in the direction of the applied force is zero, then the work done by the force is _____.

- Ans**
- ☐ 1. 1 joules
 - ☐ 2. 20 joules
 - ☐ 3. 2 joules
 - ☒ 4. 0

Q.33 If the price of sugar decreases by 20%, then by what percentage must a householder increase her consumption of sugar so as to leave her expenditure on sugar unchanged?

- Ans**
- ☐ 1. $33\frac{1}{3}\%$
 - ☐ 2. $16\frac{2}{3}\%$
 - ☒ 3. 25%
 - ☐ 4. 20%

Q.34 An electric geyser of resistance $4\ \Omega$ produces 100 J of heat per sec. The current flowing through it will be:

- Ans**
- ☒ 1. 5 A
 - ☐ 2. 50 A
 - ☐ 3. 25 A
 - ☐ 4. 2.5 A

Q.35 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(3, 12, 36)

(8, 32, 96)

- Ans**
- ☐ 1. (12, 42, 144)
 - ☐ 2. (14, 48, 144)
 - ☐ 3. (12, 48, 124)
 - ☒ 4. (12, 48, 144)

Q.36 The area (in cm^2) of an equilateral triangle whose altitude from vertex is 9 cm, is:

- Ans**
- ☐ 1. $\frac{9\sqrt{3}}{4}$
 - ☐ 2. $\frac{3\sqrt{3}}{2}$
 - ☐ 3. $12\sqrt{3}$
 - ☒ 4. $27\sqrt{3}$

Q.37 The arithmetic mean of 22.5, 56, 42.5, $2x + 1$, $x - 2$, $3x$, 36 is 30. Find x, where $x > 0$.

- Ans**
- ☒ 1. 9
 - ☐ 2. 7
 - ☐ 3. 6
 - ☐ 4. 4

Q.38 In what duration will a sum of money double itself at 5% per annum simple interest?

- Ans**
- ☐ 1. 18 years
 - ☐ 2. 12 years
 - ☐ 3. 10 years
 - ☒ 4. 20 years

Q.39 Which of the following best describes the mixture of air?

- Ans**
- ☐ 1. Colloids
 - ☐ 2. Suspension
 - ☐ 3. Heterogeneous mixture
 - ☒ 4. Homogeneous mixture

Q.40 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. LH-KN
 - ☒ 2. NJ-MP
 - ☒ 3. JF-IL
 - ☒ 4. QM-PR

Q.41 A man sells two houses at the rate of ₹1.995 lakhs each. On one he gains 5% and on the other he loses 5%. His gain or loss percentage in the whole transaction is:

- Ans**
- ☒ 1. 0.25% loss
 - ☒ 2. 0.25% gain
 - ☒ 3. 25% loss
 - ☒ 4. 2.5% loss

Q.42 Lakhan and Ram start a business by investing ₹48,000 and ₹72,000, respectively. What is Ram's share out of the annual profit of ₹6,530?

- Ans**
- ☒ 1. ₹2,450
 - ☒ 2. ₹2,612
 - ☒ 3. ₹3,080
 - ☒ 4. ₹3,918

Q.43 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. Only two people sit between A and E. Only P sits to the right of Q. Only one person sits between E and Q. R sits at some place to the right of B but at some place to the left of F. Who sits third from the right end of the row?

- Ans**
- ☒ 1. E
 - ☒ 2. F
 - ☒ 3. B
 - ☒ 4. R

Q.44 Which of the following statements is/are correct related to eco-system?

- (i) UV radiation is not damaging to organisms.
- (ii) Ozone at the higher levels of the atmosphere is a product of UV radiation acting on oxygen molecule.
- (iii) The amount of ozone in the atmosphere began to drop sharply in 1980.

- Ans**
- ☒ 1. (i), (ii) and (iii)
 - ☒ 2. Only (ii) and (iii)
 - ☒ 3. Only (i)
 - ☒ 4. Only (i) and (ii)

Q.45 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

PL-QN-ST

JF-KH-MN

- Ans**
- ☒ 1. MI-NK-PQ
 - ☒ 2. TP-UR-WY
 - ☒ 3. SO-TQ-VX
 - ☒ 4. QM-RO-TV

Q.46 Match the following.

(i) Ovary	(a) fertilisation
(ii) Oviduct	(b) implantation
(iii) Uterus	(c) nourishes the growing embryo
(iv) Placenta	(d) makes the female gametes

- Ans**
- ☒ 1. (i)-(d), (ii)-(b), (iii)-(a), (iv)-(c)
 - ☒ 2. (i)-(d), (ii)-(c), (iii)-(b), (iv)-(a)
 - ☒ 3. (i)-(d), (ii)-(a), (iii)-(b), (iv)-(c)
 - ☒ 4. (i)-(b), (ii)-(a), (iii)-(d), (iv)-(c)

Q.47 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 3 Ω 9 # 1 7 3 @ 1 ^ 9 # * £ 5 8 S 7 & * £ 5 (Right)

How many such symbols are there, each of which is immediately preceded by an even number and also immediately followed by a symbol?

- Ans**
- ☒ 1. None
 - ☒ 2. One
 - ☒ 3. More than two
 - ☒ 4. Two

Q.48 In a displacement reaction, what is the key factor that determines whether a more reactive metal will displace a less reactive metal from its compound?

- Ans**
- ☒ 1. Concentration of the compound
 - ☒ 2. Temperature of the reaction
 - ☒ 3. Size of the metal atoms
 - ☒ 4. Position of the metals in the reactivity series

Q.49 Which of the following is a covalent compound?

- Ans**
- ☒ 1. MgCl_2
 - ☒ 2. NaCl
 - ☒ 3. MgO
 - ☒ 4. CH_4

Q.50 Which one of the following organisms shows multiple fission?

- Ans**
- ☒ 1. Plasmodium
 - ☒ 2. Yeast
 - ☒ 3. Hydra
 - ☒ 4. Leishmania

Q.51 What is the measure of each exterior angle of a regular decagon?

- Ans
- ☐ 1. 60°
 - ☐ 2. 30°
 - ☒ 3. 36°
 - ☐ 4. 45°

Q.52 Which of the following statements about solutions is correct?

- Ans
- ☐ 1. A solution is a heterogeneous mixture.
 - ☐ 2. The concentration of a solution can only be expressed in terms of mass per cent.
 - ☒ 3. The solute is present in a smaller amount than the solvent.
 - ☐ 4. Solutions can be separated using simple filtration.

Q.53 Evaluate the given expression.

$$(-20) \times (-1) + 14 \div 7$$

- Ans
- ☐ 1. 18
 - ☐ 2. -22
 - ☒ 3. 22
 - ☐ 4. -18

Q.54 Which of the following is NOT a reproductive part of Rhizopus?

- Ans
- ☐ 1. Sporangiohores
 - ☐ 2. Sporangium
 - ☐ 3. Spores
 - ☒ 4. Hyphae

Q.55 What term is used for the reaction between acids and bases that results in the formation of salt and water?

- Ans
- ☒ 1. Neutralisation reaction
 - ☐ 2. Hydrolysis reaction
 - ☐ 3. Polymerisation reaction
 - ☐ 4. Photosynthesis reaction

Q.56 The ratio of the volumes of two cubes is 729 : 1331. What is the ratio of their total surface areas?

- Ans
- ☐ 1. 27 : 121
 - ☐ 2. 729 : 1331
 - ☒ 3. 81 : 121
 - ☐ 4. 9 : 11

Q.57 The value of $x^{\frac{1}{2}} \times Y^{-1} \times z^{\frac{2}{3}}$, when $x = 9$, $Y = 3$, and $z = 8$ is:

- Ans
- ☐ 1. 6
 - ☐ 2. 18
 - ☒ 3. 4
 - ☐ 4. 12

Q.58 Which city won the UN-Shanghai Global Award for its sustainable urban development initiatives in 2024?

- Ans**
- ☐ 1. Agadir
 - ☐ 2. Doha
 - ☒ 3. Thiruvananthapuram
 - ☐ 4. Melbourne

Q.59 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 9 7 4 5 1 8 2 7 5 1 3 4 2 3 7 4 9 5 2 7 5 6 9 2 8 5 4 1 9 3 (Right)

How many such odd digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 4
 - ☐ 2. 2
 - ☒ 3. 3
 - ☐ 4. 1

Q.60 The ratio between the present ages of Amit and Amita is 7 : 5, respectively. The ratio between Amit's age 5 years ago and Amita's age 5 years hence is 1 : 1. After how many years from now will the age of Amit and Amita together be 72 years?

- Ans**
- ☐ 1. 4 years
 - ☒ 2. 6 years
 - ☐ 3. 5 years
 - ☐ 4. 7 years

Q.61 A book is pushed with a constant force of 1 N. It displaces 1 m in the direction of the force. The work done by the force is:

- Ans**
- ☐ 1. 0
 - ☐ 2. -1 J
 - ☒ 3. +1 J
 - ☐ 4. 2 J

Q.62 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 19 :: 92 : Y

- Ans**
- ☐ 1. X = 98, Y = 24
 - ☐ 2. X = 84, Y = 26
 - ☒ 3. X = 76, Y = 23
 - ☐ 4. X = 88, Y = 21

Q.63 In a certain code language, 'REVS' is coded as '6942' and 'ORES' is coded as '6421'. What is the code for 'V' in the given code language?

- Ans**
- ☐ 1. 2
 - ☒ 2. 9
 - ☐ 3. 4
 - ☐ 4. 6

Q.64 What was the key defense procurement, approved in September 2024, to enhance India's naval defense capabilities?

- Ans**
- ☐ 1. Launch of a new aircraft carrier for the Indian Navy
 - ☐ 2. Acquisition of advanced naval radar systems
 - ☒ 3. Approval of seven Project 17B stealth frigates for the Indian Navy
 - ☐ 4. Procurement of multi-role submarines

Q.65 Which of the following natural phenomena is due to the force of gravitation between the moon and the earth?

- Ans**
- ☐ 1. Blue color of the sky
 - ☐ 2. Thunderstorms
 - ☒ 3. Tides
 - ☐ 4. Rainbow

Q.66 The distance from the focus point of a mirror to the pole is known as:

- Ans**
- ☐ 1. radius of curvature
 - ☒ 2. focal length
 - ☐ 3. aperture
 - ☐ 4. centre of curvature

Q.67 An object is placed between F and 2F of a concave lens. Which of the following options represents the characteristics of the image formed?

- Ans**
- ☐ 1. Virtual and enlarged
 - ☒ 2. Virtual and diminished
 - ☐ 3. Real and diminished
 - ☐ 4. Real and enlarged

Q.68 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?
 $35 \times 7 + 2 \div 6 - 13 = ?$

- Ans**
- ☐ 1. 7
 - ☒ 2. 6
 - ☐ 3. 4
 - ☐ 4. 9

Q.69 What is the mode of the following data?

66, 69, 83, 69, 84, 74, 71, 83, 69, 84, 73, 83, 69, 71, 84, 74, 83, 66, 74, 71, 83, 66, 90, 90

- Ans**
- ☐ 1. 90
 - ☒ 2. 83
 - ☐ 3. 74
 - ☐ 4. 84

Q.70 What is the function of the growth hormone secreted by the pituitary gland?

- Ans**
- ☐ 1. It regulates the blood sugar level.
 - ☐ 2. It regulates the menstrual cycle.
 - ☒ 3. It stimulates growth in all organs.
 - ☐ 4. It regulates metabolism for body growth.

Q.71 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$16 \text{ C } 24 \text{ A } 3 \text{ B } 8 \text{ D } 5 = ?$$

- Ans**
- ✓ 1. 75
 - ✗ 2. 65
 - ✗ 3. 70
 - ✗ 4. 80

Q.72 If A's income is 40% less than B's income, then A's income is what percentage of B's income?

- Ans**
- ✗ 1. 166.67%
 - ✓ 2. 60%
 - ✗ 3. 40%
 - ✗ 4. 75%

Q.73 What was the theme of 'Vigilance Awareness Week' observed from 28th October to 3rd November 2024, which is an initiatives of the Central Vigilance Commission in the fight against corruption?

- Ans**
- ✗ 1. Say No to Corruption; Commit to the Nation
 - ✗ 2. Corruption Free India for a Developed National
 - ✗ 3. Satark Bharat, Samriddh Bharat
 - ✓ 4. Culture of Integrity for Nation's Prosperity

Q.74 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. B sits third from the right end. Only one person sits to the left of D. F sits to the right of B but left of G. E is an immediate neighbour of C and D. How many people sit between A and G?

- Ans**
- ✗ 1. Three
 - ✓ 2. Five
 - ✗ 3. Two
 - ✗ 4. Four

Q.75 In a certain code language,
'P + Q' means 'P is the sister of Q',
'P − Q' means 'P is the son of Q',
'P x Q' means 'P is the husband of Q' and
'P ÷ Q' means 'P is the daughter of Q'.
How is A related to E if 'A + B − C x D ÷ E'?

- Ans**
- ✗ 1. Son's daughter
 - ✗ 2. Daughter
 - ✓ 3. Daughter's daughter
 - ✗ 4. Sister

Q.76 Simplify the following expression:

$$9993 \times 10007$$

- Ans**
- ☐ 1. 91999949
 - ☐ 2. 9999951
 - ☒ 3. 99999951
 - ☐ 4. 9999949

Q.77 An organism simply splits into two equal halves during cell division. What is it known as?

- Ans**
- ☒ 1. Binary fission
 - ☐ 2. Spore formation
 - ☐ 3. Regeneration
 - ☐ 4. Budding

Q.78 In a certain code language, 'REPS' is coded as '9631' and 'EARS' is coded as '6914'. What is the code for 'A' in the given code language?

- Ans**
- ☐ 1. 6
 - ☐ 2. 9
 - ☐ 3. 1
 - ☒ 4. 4

Q.79 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No door is a lock.

No lock is a key

Conclusions:

I. No door is a key.

II. No lock is a door.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☒ 2. Only conclusion II follows
 - ☐ 3. Only conclusion I follows
 - ☐ 4. Neither conclusion I nor II follows

Q.80 Which of the following statements is INCORRECT?

- Ans**
- ☒ 1. All metals are equally reactive.
 - ☐ 2. Silver is less reactive than sodium.
 - ☐ 3. All metals are not equally reactive.
 - ☐ 4. Potassium is more reactive than gold.

Q.81 Which of the following sportspersons was one of the India's flagbearers for the Paris 2024 Olympics?

- Ans**
- ☐ 1. MC Mary Kom
 - ☐ 2. Neeraj Chopra
 - ☐ 3. Vinesh Phogat
 - ☒ 4. A Sharath Kamal

Q.82 Given below is a statement followed by two courses of actions, numbered I and II. You must assume everything in the statement to be true, and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

School X has received a notice from the Commissioner of Police on the many complaints that have been received regarding the traffic jam caused outside the school gates every morning between 8 a.m. and 9 a.m. due to illegal parking of cars.

Courses of Action:

(I) School X should deploy security personnel to monitor the illegal car parking outside school gates and clear any jams being caused.

(II) School X should ban parents from dropping their children by car to the school.

- Ans**
- ☐ 1. Both I and II follow
 - ☒ 2. Only I follows
 - ☐ 3. Neither I nor II follows
 - ☐ 4. Only II follows

Q.83 Organisms having only one cell are called _____.

- Ans**
- ☐ 1. singular
 - ☒ 2. unicellular
 - ☐ 3. multicellular
 - ☐ 4. unisexual

Q.84 A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find the difference between C's and B's shares.

- Ans**
- ☒ 1. ₹240
 - ☐ 2. ₹480
 - ☐ 3. ₹160
 - ☐ 4. ₹360

Q.85 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ORN, QTP, SVR, UXT, ?

- Ans**
- ☐ 1. WVZ
 - ☒ 2. WZV
 - ☐ 3. VZW
 - ☐ 4. VWZ

Q.86 Simplify the given expression.

$$\left(\frac{2}{3} + \frac{1}{3}\right) \times 23 - 13 + 9$$

- Ans**
- ☐ 1. 29
 - ☐ 2. 16
 - ☐ 3. 23
 - ☒ 4. 19

Q.87 Identify the correct match.

- Ans**
- ☐ 1. Bacterial infections : Warts and HIV-AIDS
 - ☐ 2. Viral infections : Gonorrhoea and syphilis
 - ☐ 3. Bacterial infections : Warts and gonorrhoea
 - ☐ 4. Viral infections : Syphilis and HIV-AIDS
 - ☒ 5. Bacterial infections : Gonorrhoea and syphilis
 - ☐ 6. Viral infections : Warts and HIV-AIDS
 - ☐ 7. Bacterial infections : Warts and syphilis
 - ☐ 8. Viral infections : Gonorrhoea and HIV-AIDS

Q.88 Which of the following does NOT have neurons?

- Ans**
- ☒ 1. Adipocyte
 - ☐ 2. Nerves
 - ☐ 3. Spinal cord
 - ☐ 4. Brain

Q.89 The shortest distance measured from the initial to the final position of an object is known as _____.

- Ans**
- ☐ 1. acceleration
 - ☐ 2. velocity
 - ☒ 3. displacement
 - ☐ 4. speed

Q.90 Which of the following Union ministries presented a special festival series titled 'Amrit Parampara' in November 2024?

- Ans**
- ☒ 1. Ministry of Culture
 - ☐ 2. Ministry of External Affairs
 - ☐ 3. Ministry of Textiles
 - ☐ 4. Ministry of Tourism

Q.91 Which of the following edible acids is added to baking soda for making baking powder?

- Ans**
- ☐ 1. Sodium chloride
 - ☒ 2. Tartaric acid
 - ☐ 3. Lactic acid
 - ☐ 4. Vinegar

Q.92 When an object moves in a circular path with uniform speed, its motion is called _____.

- Ans**
- ☐ 1. linear motion
 - ☒ 2. uniform circular motion
 - ☐ 3. motion along a straight line
 - ☐ 4. motion along a hemisphere

Q.93 The number of factors of any prime number is:

- Ans**
- ☒ 1. 1
 - ☒ 2. 2
 - ☒ 3. 4
 - ☒ 4. 3

Q.94 Which group of companies was named the principal sponsor for Team India at the Paris Olympics 2024?

- Ans**
- ☒ 1. Aditya Birla
 - ☒ 2. Adani
 - ☒ 3. Reliance
 - ☒ 4. Puma

Q.95 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All coats are jackets.

Some coats are sweaters.

Conclusions:

(I) Some jackets are not coats.

(II) Some jackets are sweaters.

- Ans**
- ☒ 1. Only conclusion II follows
 - ☒ 2. Only conclusion I follows
 - ☒ 3. Neither conclusion I nor II follows
 - ☒ 4. Both conclusions I and II follow

Q.96 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

IMH, LPK, OSN, RVQ, ?

- Ans**
- ☒ 1. YUT
 - ☒ 2. YTU
 - ☒ 3. UTY
 - ☒ 4. UYT

Q.97 Which of the following endocrine glands secretes growth hormones?

- Ans**
- ☒ 1. Pituitary gland
 - ☒ 2. Testes
 - ☒ 3. Thyroid gland
 - ☒ 4. Adrenal gland

Q.98 $\frac{\sin \theta (1 + \cos \theta)}{1 + \cos \theta - \sin^2 \theta}$, $0^\circ < \theta < 90^\circ$, is equal to :

- Ans**
- ☒ 1. cosec θ
 - ☒ 2. sin θ
 - ☒ 3. tan θ
 - ☒ 4. sec θ

Q.99 A, B and C can do a piece of work in 15, 10 and 30 days, respectively. In how many days can A do the work if he is assisted by B and C on every 3rd day?

- Ans**
-  1. 12 days
 -  2. 9 days
 -  3. 6 days
 -  4. 15 days

Q.100 Dr. Avesh Kumar Tyagi, the recipient of Vigyan Shri Award 2024 in the field of Atomic Energy, is associated with which of the following institutes as of 01 November 2024?

- Ans**
-  1. Variable Energy Cyclotron Centre (VECC), Kolkata
 -  2. Bhabha Atomic Research Centre (BARC), Mumbai
 -  3. Raja Ramanna Centre for Advanced Technology (RRCAT), Indore
 -  4. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam

2024/12/30-13:32:44



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	30/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Pradnya invests ₹2,00,000 in the name of her daughter, who is 16 years old, in a scheme that pays compound interest at a rate of 8% per annum, compounded annually. What will be the total amount due to the daughter when she becomes 18 years old?

- Ans**
- ☒ 1. ₹2,51,250
 - ☒ 2. ₹ 2,52,150
 - ☒ 3. ₹ 2,35,850
 - ☒ 4. ₹2,33,280

Q.2 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All hands are legs.

No leg is an eye.

Conclusions:

I. All legs are hands.

II. No hand is an eye.

- Ans**
- ☒ 1. Both conclusions I and II follow
 - ☒ 2. Only conclusion I follows
 - ☒ 3. Neither conclusion I nor II follows
 - ☒ 4. Only conclusion II follows

Q.3 Ajit starts from point A and drives 6 km towards North. He then takes two simultaneous left turns and drives 2 km each. He then takes a right turn and drives 3 km.. He then takes a left turn and drives 2 km. He takes a final left turn and drives 5 km to reach a point B. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☒ 1. 2 km South
 - ☒ 2. 2 km North
 - ☒ 3. 5 km West
 - ☒ 4. 3 km South

Q.4 An imaginary straight line passing through the pole and the centre of curvature of a spherical mirror is called as _____.

- Ans
- ☐ 1. emergent ray
 - ☐ 2. reflected ray
 - ☒ 3. principal axis
 - ☐ 4. incident ray

Q.5 Who among the following assumed charge as Officer on Special Duty (Defence Secretary-designate) on August 2024?

- Ans
- ☐ 1. Arun Kumar Sharma
 - ☒ 2. Rajesh Kumar Singh
 - ☐ 3. Sandeep Chakravorty
 - ☐ 4. Rajeev Kumar

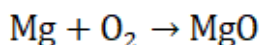
Q.6 Which Indian legendary sportsperson became the first Asian man to be inducted into the Tennis Hall of Fame?

- Ans
- ☐ 1. Ramanathan Krishnan
 - ☐ 2. Rohan Bopanna
 - ☒ 3. Leander Paes
 - ☐ 4. Mahesh Bhupathi

Q.7 In which state did Prime Minister Narendra Modi inaugurate India's first modern, self-sufficient gaushala named Adarsh Gaushala?

- Ans
- ☐ 1. Rajasthan
 - ☒ 2. Madhya Pradesh
 - ☐ 3. Uttar Pradesh
 - ☐ 4. Bihar

Q.8 Identify the balanced chemical equation for the following reaction.



- Ans
- ☐ 1. $\text{Mg} + \frac{3}{2}\text{O}_2 \rightarrow \text{MgO}$
 - ☐ 2. $2\text{Mg} + \frac{3}{2}\text{O}_2 \rightarrow 3\text{MgO}$
 - ☐ 3. $2\text{Mg} + \frac{1}{2}\text{O}_2 \rightarrow 2\text{MgO}$
 - ☒ 4. $\text{Mg} + \frac{1}{2}\text{O}_2 \rightarrow \text{MgO}$

Q.9 Which of the following elements is monoatomic?

- Ans
- ☒ 1. Helium
 - ☐ 2. Nitrogen
 - ☐ 3. Oxygen
 - ☐ 4. Hydrogen

Q.10 The value of a machine depreciates at the rate of 10% per annum. If its present value is ₹1,62,000, then what will be its worth after 2 years?

- Ans**
- ☐ 1. ₹1,26,860
 - ☐ 2. ₹1,32,860
 - ☒ 3. ₹1,31,220
 - ☐ 4. ₹1,27,760

Q.11 A scanner costs ₹7,000 less than a printer. If the cost of the printer is twice the cost of the scanner, then the cost of the scanner is:

- Ans**
- ☐ 1. ₹6,000
 - ☐ 2. ₹14,000
 - ☒ 3. ₹7,000
 - ☐ 4. ₹7,500

Q.12 The ratio between the present ages of Amit and Amita is 7 : 5, respectively. The ratio between Amit's age 5 years ago and Amita's age 5 years hence is 1 : 1. What is the ratio between Amit's age 5 years hence and Amita's age 5 years ago?

- Ans**
- ☐ 1. 1 : 2
 - ☒ 2. 2 : 1
 - ☐ 3. 2 : 3
 - ☐ 4. 3 : 2

Q.13 Which of the following functions is NOT regulated by the medulla in the hind brain?

- Ans**
- ☐ 1. Salivary regulation
 - ☐ 2. Blood pressure regulation
 - ☒ 3. Regulation of hearing
 - ☐ 4. Vomiting control

Q.14 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tablets are laptops.

All laptops are desktops.

Conclusions:

(I) Some desktops are tablets.

(II) No desktops are tablets.

- Ans**
- ☐ 1. Both conclusions (I) and (II) follow
 - ☒ 2. Only conclusion (I) follows
 - ☐ 3. Only conclusion (II) follows
 - ☐ 4. Neither conclusion (I) nor (II) follows

Q.15 What is the sum of the deviations of the values of the data set 5, 6, 7, 9, 10, 12 and 14, from the mean of the values given in the same data set?

- Ans**
- ☐ 1. 1
 - ☒ 2. 0
 - ☐ 3. -1
 - ☐ 4. 2

Q.16 Given below is a cause followed by possible effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause:

The truckers' strike entered its 6th day today in State X, as they protested against the increase in diesel prices.

Effects:

(I) Supply of fruits and vegetables from neighbouring states has dropped drastically in the wholesale markets in the last week across many cities in State X.

(II) Demand for diesel vehicles has been steadily increasing in State X despite an increase in diesel prices.

(III) The auto rickshaw union in City Z has declared an increase in the starting fares for autos for 48 hours starting tomorrow morning at 6 a.m.

- Ans**
- ☐ 1. Both I and II can be the possible effects
 - ☐ 2. Both II and III can be the possible effects
 - ☒ 3. Only I can be a possible effect
 - ☐ 4. Only II can be a possible effect

Q.17 The electric power consumed by a resistor of resistance R , carrying current I , is _____.

- Ans**
- ☐ 1. IR
 - ☐ 2. I/R
 - ☐ 3. IR^2
 - ☒ 4. I^2R

Q.18 To raise awareness on the safe use of digital payment services and prevent scams, which of the following institution of India launched a UPI Safety Awareness Campaign 'Main Moorkh Nahi Hoon'?

- Ans**
- ☐ 1. Reserve Bank of India (RBI)
 - ☐ 2. Data Security Council of India (DSCI)
 - ☒ 3. National Payments Corporation of India (NPCI)
 - ☐ 4. Indian Cybercrime Coordination Centre (I4C)

Q.19 In phloem, which of the following cells are dead cells?

- Ans**
- ☐ 1. Companion cells
 - ☐ 2. Sieve cells
 - ☒ 3. Phloem fibres
 - ☐ 4. Phloem parenchyma

Q.20 Who among the following individuals from India was one of the six recipients of the 2024 Planet Earth Awards?

- Ans**
- ☐ 1. Sunita Narain
 - ☒ 2. S Faizi
 - ☐ 3. Vandana Shiva
 - ☐ 4. RK Pachauri

Q.21 In a certain code language, 'RIFE' is coded as '3647' and 'FORE' is coded as '6438'. What is the code for 'O' in the given code language?

- Ans**
- ☒ 1. 8
 - ☐ 2. 3
 - ☐ 3. 4
 - ☐ 4. 6

Q.22 SIDBI, in November 2024, signed a MoU with which of the following for strengthening the collaboration to support MSMEs through capacity building, credit facilities, and knowledge-sharing?

- Ans**
- ✓ 1. Peenya Industries Association
 - ✗ 2. Ecozen Solutions
 - ✗ 3. Reliance Industries
 - ✗ 4. Upcurve Business Services Pvt Ltd

Q.23 The LCM of the numbers 5, 12.5 and 0.05 is:

- Ans**
- ✗ 1. 125
 - ✗ 2. 12.5
 - ✗ 3. 1.25
 - ✓ 4. 25

Q.24 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

JMP, LOR, NQT, PSV, ?

- Ans**
- ✓ 1. RUX
 - ✗ 2. UXR
 - ✗ 3. URX
 - ✗ 4. RXU

Q.25 Which of the following factors does NOT affect the rate of evaporation?

- Ans**
- ✗ 1. Humidity of the surrounding air
 - ✗ 2. Surface area of the liquid
 - ✗ 3. Temperature of the liquid
 - ✓ 4. Colour of the liquid

Q.26 When iron filings are sprinkled around a magnet, they form a pattern. What does this pattern represent?

- Ans**
- ✗ 1. Neither electric nor magnetic field lines
 - ✗ 2. Both electric and magnetic field lines
 - ✗ 3. Electric field lines
 - ✓ 4. Magnetic field lines

Q.27 Mendel used a number of contrasting visible characters of garden peas. Match the last of the following with Which one of the following options appropriately fills the below blank space?

- A. Round / Wrinkled seeds
- B. Tall / Short plants
- C. White / _____ flowers

- Ans**
- ✗ 1. Yellow
 - ✗ 2. Green
 - ✓ 3. Violet
 - ✗ 4. Pink

Q.28 1 kilowatt is equal to _____.

- Ans**
- ✓ 1. 1000 J s^{-1}
 - ✗ 2. 1000 J s^{-2}
 - ✗ 3. 1000 J s
 - ✗ 4. 1000 J

Q.29 The process of fermentation involves the conversion of sugars into which of the following compounds?

- Ans**
- ✗ 1. Ethene
 - ✗ 2. Ethanoic acid
 - ✗ 3. Methane
 - ✓ 4. Ethanol

Q.30 Why does the following action take place in plants?

Plant cells change shape by changing the amount of water in them, resulting in swelling or shrinking, and therefore in changing shape.

- Ans**
- ✓ 1. In immediate response to some stimulus
 - ✗ 2. To maintain balance
 - ✗ 3. To conserve energy
 - ✗ 4. In fear

Q.31 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

2 B 18 D 20 A 4 C 15 =?

- Ans**
- ✗ 1. 48
 - ✗ 2. 47
 - ✓ 3. 46
 - ✗ 4. 45

Q.32 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 114 :: 26 : Y

- Ans**
- ✗ 1. X = 31, Y = 72
 - ✗ 2. X = 39, Y = 86
 - ✓ 3. X = 38, Y = 78
 - ✗ 4. X = 42, Y = 84

Q.33 What was the theme of the first Asian Buddhist Summit, held in November 2024?

- Ans**
- ✓ 1. Role of Buddha Dhamma in Strengthening Asia
 - ✗ 2. Role of Buddha Dhamma in Establishing Global Peace
 - ✗ 3. Role of Buddha Dhamma in Maintaining World Peace Order
 - ✗ 4. Role of Buddha Dhamma in Strengthening World

Q.34 Which of the options represents the correct and balanced chemical equation for the reaction between a metallic oxide and an acid?



- Ans**
- ☒ 1. $\text{CuO} + \text{HCl} \rightarrow \text{CuOH} + \text{HCl}$
 - ☒ 2. $\text{CuO} + 2\text{HCl} \rightarrow \text{CuCl}_2 + \text{O}_2$
 - ☒ 3. $\text{CuO} + 2\text{HCl} \rightarrow \text{CuCl}_2 + \text{H}_2\text{O}$
 - ☒ 4. $\text{CuO} + \text{HCl} \rightarrow \text{CuCl} + \text{H}_2$

Q.35 Heating of ethanol at 443 K with excess concentrated sulphuric acid yields which of the following?

- Ans**
- ☒ 1. Ethane
 - ☒ 2. Acetic acid
 - ☒ 3. Ether
 - ☒ 4. Ethene

Q.36 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(32, 78, 93)

(29, 75, 90)

- Ans**
- ☒ 1. (43, 79, 94)
 - ☒ 2. (25, 71, 76)
 - ☒ 3. (35, 81, 92)
 - ☒ 4. (38, 84, 99)

Q.37 What is the name of the connective tissue that connects two bones to each other?

- Ans**
- ☒ 1. Adipose tissue
 - ☒ 2. Tendon
 - ☒ 3. Cartilage
 - ☒ 4. Ligament

Q.38 If each vowel in the word PAINTER is changed to the nearest consonant succeeding it in the English alphabetical order and each consonant is changed to the nearest vowel succeeding it in English alphabetical order, then which of the following letters is repeated thrice in the new group of letters thus formed?

- Ans**
- ☒ 1. O
 - ☒ 2. U
 - ☒ 3. F
 - ☒ 4. B

Q.39 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. NKR
 - ☒ 2. JGM
 - ☒ 3. TQW
 - ☒ 4. QNT

Q.40 XZYU is related to NLOK in a certain way based on the English alphabetical order. In the same way, USVR is related to KILH. To which of the following options is QORN related, following the same logic?

- Ans**
- ☐ 1. GEDH
 - ☐ 2. HEDG
 - ☒ 3. GEHD
 - ☐ 4. HEGD

Q.41 If $9 : 12 :: 12 : k$, then find the value of $k + 1$.

- Ans**
- ☐ 1. 18
 - ☒ 2. 17
 - ☐ 3. 15
 - ☐ 4. 16

Q.42 Triveni's salary was first decreased by 16% and subsequently increased by 25%. The net percentage change in her salary was:

- Ans**
- ☐ 1. 10% increase
 - ☐ 2. 10% decrease
 - ☐ 3. 5% decrease
 - ☒ 4. 5% increase

Q.43 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 17-times of the same work in _____(days).

- Ans**
- ☐ 1. 4
 - ☒ 2. 68
 - ☐ 3. 5
 - ☐ 4. 69

Q.44 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 0 8 3 5 6 2 1 6 4 1 4 3 8 7 9 0 6 9 3 4 1 3 0 2 7 1 8 8 9 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 6
 - ☒ 2. 5
 - ☐ 3. 4
 - ☐ 4. 3

Q.45 Zinc metal reacts with sodium hydroxide to produce _____.

- Ans**
- ☐ 1. zinc hydroxide
 - ☐ 2. zinc oxide
 - ☐ 3. sodium hydride
 - ☒ 4. sodium zincate

Q.46 The list price of an article is ₹1,200 and a discount of 15% is offered on the list price. The selling price of the article is:

- Ans**
- ☐ 1. ₹1,140
 - ☒ 2. ₹1,020
 - ☐ 3. ₹1,120
 - ☐ 4. ₹1,080

Q.47 Archana can eat 21 litchis in 60 minutes. She wants to know how many minutes it would take her to eat 35 litchis at the same pace.

- Ans**
- ☐ 1. 120 minutes
 - ☐ 2. 80 minutes
 - ☐ 3. 90 minutes
 - ☒ 4. 100 minutes

Q.48 The value of $(\sec A + \tan A)(1 - \sin A)$ is:

- Ans**
- ☐ 1. $\tan A$
 - ☐ 2. $\cot A$
 - ☐ 3. $\sin A$
 - ☒ 4. $\cos A$

Q.49 Which of the following is the best example of a heterogeneous mixture?

- Ans**
- ☐ 1. Sugar in water
 - ☒ 2. Mixture of iron chloride and iron fillings
 - ☐ 3. Salt in water
 - ☐ 4. Copper sulphate solution

Q.50 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. No one sits to the right of F. Only three people sit between F and E. Only two people sit between E and P. A sits third to the left of R. Q sits to the immediate right of R. How many people sit between B and P?

- Ans**
- ☐ 1. Four
 - ☐ 2. Two
 - ☒ 3. Three
 - ☐ 4. One

Q.51 What is the momentum p , of an object of mass m , moving with a velocity v ?

- Ans**
- ☐ 1. $P = v m^{-1}$
 - ☐ 2. $P = m v^{-2}$
 - ☒ 3. $P = m v$
 - ☐ 4. $p = (mv)^{-2}$

Q.52 How many water molecules are present in plaster of Paris?

- Ans**
- ☒ 1. Half molecules of water
 - ☐ 2. Zero molecules of water
 - ☐ 3. One molecule of water
 - ☐ 4. Three molecules of water

Q.53 The tube which grows out of pollen grain to reach the ovary, travels through the:

- Ans**
- ☒ 1. style
 - ☐ 2. filament
 - ☐ 3. petal
 - ☐ 4. anther

Q.54 Which organelle is the powerhouse of the cell?

- Ans**
- ☐ 1. Golgi apparatus
 - ☐ 2. Plastids
 - ☒ 3. Mitochondria
 - ☐ 4. Endoplasmic reticulum

Q.55 What is the SI unit of pressure?

- Ans**
- ☐ 1. N m
 - ☐ 2. N
 - ☐ 3. $N m^{-1}$
 - ☒ 4. $N m^{-2}$

Q.56 In a certain code language, 'AMBER' is coded as '79612' and 'UMBRA' is coded as '12659'. What is the code for 'U' in the given code language?

- Ans**
- ☐ 1. 9
 - ☐ 2. 2
 - ☒ 3. 5
 - ☐ 4. 1

Q.57 Identify the INCORRECT statement about regeneration.

- Ans**
- ☒ 1. Amoeba exhibit regeneration.
 - ☐ 2. Hydra and Planaria show regeneration mode of reproduction
 - ☐ 3. Specialised cells are responsible for regeneration.
 - ☐ 4. These specialist cells multiply rapidly and produce a large number of new cells.

Q.58 Spores in Rhizopus are present in blobs, which are known as:

- Ans**
- ☐ 1. sacs
 - ☐ 2. fruiting bodies
 - ☒ 3. sporangia
 - ☐ 4. buds

Q.59 Which of the following statements is/are INCORRECT?


- (i) The transport of insoluble product of photosynthesis is known as translocation.
- (ii) Respiration is the evaporative loss of water through stomata.
- (iii) Photosynthesis is the process by which autotrophs take in substances from outside and in the absence of sunlight convert them into stored forms of energy.


- Ans**
- ☒ 1. (i), (ii) and (iii)
 - ☐ 2. Only (i) and (ii)
 - ☐ 3. Only (ii) and (iii)
 - ☐ 4. Only (i)


Q.60 $\left(x + \frac{1}{x}\right)\left(x - \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4}\right)$

is equal to:

Ans  1. $x^8 - \frac{1}{x^8}$

 2. $x^4 - \frac{1}{x^4}$


 3. $x^{10} - \frac{1}{x^{10}}$


 4. $x^6 - \frac{1}{x^6}$

Q.61 A body, starting from rest, falls from a building and reaches the ground in 2 secs. What will be the velocity of the body when it reaches the ground? (Acceleration due to gravity = 10 ms^{-2})

Ans  1. 5 m/s

 2. 20 m/s


 3. 10 m/s


 4. 15 m/s


Q.62 D, E, F, G, L, M and N are sitting around a circular table facing the centre. E sits to the immediate right of D. Only three people sit between E and L when counted from the left of E. Only three people sit between D and G when counted from the left of D. N sits to the immediate right of M.

How many people sit between F and M when counted from the left of M?

Ans  1. Two

 2. Three

 3. Four

 4. One

Q.63 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

16, 27, 38, 49, 60, ?

Ans  1. 71

 2. 73

 3. 70


 4. 72


Q.64 which of the following is/ are correct related to Adrenalin hormone ?


(i) Heart beats faster


(ii) Breathing rate increases

(iii) Decreases blood pressure

Ans  1. Only (ii) and (iii)

 2. Only (i) and (iii)

 3. Only (i) and (ii)

 4. (i), (ii) and (iii)

Q.65 Which of the following cells have dendrites and axons?

- Ans
- ☐ 1. White blood cells
 - ☐ 2. Fibres
 - ☒ 3. Nerve cells
 - ☐ 4. Red blood cells

Q.66 Which of the following device is governed by Flemming's Left Hand Rule

- Ans
- ☐ 1. Electric Iron
 - ☒ 2. Electric motor
 - ☐ 3. Electric Geyser
 - ☐ 4. Electric Bulb

Q.67 Who among the following was awarded the 'Best Film Critic' for his work in Hindi language as part of the National Film Awards 2022 in 2024?

- Ans
- ☐ 1. Anirudha Bhattacharjee
 - ☐ 2. Parthiv Dhar
 - ☒ 3. Deepak Dua
 - ☐ 4. Mithun Chakraborty

Q.68 A sum when invested at $12\frac{1}{2}\%$ simple interest per annum amounts to ₹8,250 after 2 years. What is the simple interest in 1 year?

- Ans
- ☐ 1. ₹910
 - ☐ 2. ₹1,650
 - ☒ 3. ₹825
 - ☐ 4. ₹1,700

Q.69 The value of universal gravitational constant is _____.

- Ans
- ☐ 1. $6.7 \text{ N m}^2 \text{ kg}^{-2}$
 - ☐ 2. $5 \times 10^{-1} \text{ N m}^2 \text{ kg}^{-2}$
 - ☒ 3. $6.7 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$
 - ☐ 4. $1 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$

Q.70 How much amount did the Board of Control for Cricket in India Secretary Jay Shah provide to the Indian Olympic Association (IOA) as a support for the Indian contingent for Paris Olympics 2024?

- Ans
- ☐ 1. 10.5 crore
 - ☐ 2. 12.5 crore
 - ☐ 3. 14.5 crore
 - ☒ 4. 8.5 crore

Q.71 What least natural number must be added to 6072 to make it a perfect square?

- Ans
- ☒ 1. 12
 - ☐ 2. 16
 - ☐ 3. 6
 - ☐ 4. 10

Q.72 Which of the following is NOT a function of blood?

- Ans**
- ☒ 1. Helps in the synthesis of starch
 - ☐ 2. Transports waste materials
 - ☐ 3. Transports hormones
 - ☐ 4. Transports gases

Q.73 Two trains of length 220 m and 280 m are running towards each other on parallel lines at 42 km/h and 30 km/h, respectively. In how much time will they be clear of each other from the moment they meet?

- Ans**
- ☐ 1. 21 sec
 - ☒ 2. 25 sec
 - ☐ 3. 20 sec
 - ☐ 4. 10 sec

Q.74 If 'I' stands for '+', 'J' stands for '×', 'K' stands for '+', and 'L' stands for '−', what will be come in place of the question mark '?' in the following equation?

$$148 \text{ I } 104 \text{ L } 126 \text{ I } (76 \text{ K } 2) \text{ I } (11 \text{ J } 3) \text{ L } 55 = ?$$

- Ans**
- ☐ 1. 168
 - ☐ 2. 154
 - ☐ 3. 122
 - ☒ 4. 142

Q.75 Which of the following phenomena CANNOT be explained using the universal law of gravitation?

- Ans**
- ☐ 1. Tides
 - ☒ 2. Firing of a gun
 - ☐ 3. Motion of the moon around the earth
 - ☐ 4. Motion of planets around the Sun

Q.76 The HCF of 45, 78 and 117 is:

- Ans**
- ☐ 1. 9
 - ☐ 2. 7
 - ☒ 3. 3
 - ☐ 4. 5

Q.77 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$78 \text{ A } 13 \text{ B } 15 \text{ D } 20 \text{ C } 30 = ?$$

- Ans**
- ☐ 1. 90
 - ☐ 2. 110
 - ☐ 3. 80
 - ☒ 4. 100

Q.78 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group ?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☒ 1. RYT
 - ☒ 2. JQK
 - ☒ 3. FMH
 - ☒ 4. NUP

Q.79 If the ratio of the volume of two spheres is 1:8, then the ratio of their surface area is:

- Ans**
- ☒ 1. 1:2
 - ☒ 2. 1:4
 - ☒ 3. 1:6
 - ☒ 4. 1:8

Q.80 The average monthly income of P and Q is ₹5,050. The average monthly income of Q and R is ₹6,250 and the average monthly income of P and R is ₹5,200. The monthly income of P (in ₹) is:

- Ans**
- ☒ 1. 4,000
 - ☒ 2. 4,050
 - ☒ 3. 5,000
 - ☒ 4. 3,500

Q.81 Which of the following is produced when acid reacts with a base?

- Ans**
- ☒ 1. Salt and hydrogen ion
 - ☒ 2. Salt and hydrogen gas
 - ☒ 3. Salt and water
 - ☒ 4. Only water

Q.82 When a body of mass m is raised to a height H against gravity, the potential energy of the body is:

- Ans**
- ☒ 1. increased by an amount mgH
 - ☒ 2. decreased by an amount $mgH/2$
 - ☒ 3. increased by an amount $mgH/2$
 - ☒ 4. decreased by an amount mgH

Q.83 In November 2024, the Union Cabinet approved which of the following new Central Sector schemes that seeks to provide financial support to meritorious students by providing education loan upto ₹7.5 lakhs with a 75% credit guarantee by the Government of India?

- Ans**
- ☒ 1. PM Shikshalaxmi
 - ☒ 2. PM ShikshaDhan
 - ☒ 3. PM Vidyalaxmi
 - ☒ 4. PM VidyaDhan

Q.84 The gravitational potential energy of an object of mass ' m ' raised through a height ' h ' from the earth's surface is given by _____.

- Ans**
- ☒ 1. $ma v$
 - ☒ 2. ma
 - ☒ 3. $mg h$
 - ☒ 4. $mg v$

Q.85 Which of the following organisms reproduce by spore formation?

- Ans**
- ☐ 1. Leishmania
 - ☐ 2. Earthworm
 - ☒ 3. Rhizopus
 - ☐ 4. Hydra

Q.86 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

MOVE - MOVE - EVOM

EXAM - EXAM - MAXE

- Ans**
- ☐ 1. NOSE - NSOE - ESON
 - ☐ 2. DRAW - DRAW - RAWD
 - ☒ 3. READ - READ - DAER
 - ☐ 4. MOST - OMST - TOSM

Q.87 Simplify $\frac{2.46 \times 2.46 - 1.46 \times 1.46}{2.46 - 1.46}$ and select the most appropriate fraction.

- Ans**
- ☒ 1. $\frac{392}{100}$
 - ☐ 2. $\frac{392}{10000}$
 - ☐ 3. $\frac{392}{10}$
 - ☐ 4. $\frac{392}{1000}$

Q.88 In a certain code language,
'P + Q' means 'P is the son of Q',
'P - Q' means 'P is the wife of Q',
'P x Q' means 'P is the husband of Q' and
'P ÷ Q' means 'P is the brother of Q',
How is A related to E if 'A + B - C + D x E'?

- Ans**
- ☒ 1. Son's son
 - ☐ 2. Daughter's son
 - ☐ 3. Brother
 - ☐ 4. Son

Q.89 Kevin ranked 15th from the top and 20th from the bottom in his class. How many students are there in his class?

- Ans**
- ☐ 1. 36
 - ☐ 2. 33
 - ☒ 3. 34
 - ☐ 4. 35

Q.90 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ADI EHM ILQ MPU ?

- Ans**
- ☐ 1. TYQ
 - ☐ 2. TQY
 - ☒ 3. QTY
 - ☐ 4. QYT

Q.91 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 7 & 3 Ω 9 # 1 * £ & % 4 6 @ 8 \$ 5 (Right)

If all the symbols are dropped from the series, which of the following will be fifth from the right?

- Ans**
- ☐ 1. 3
 - ☐ 2. 9
 - ☒ 3. 1
 - ☐ 4. 4

Q.92 An atom has 17 protons, 18 neutrons, and 17 electrons. What is its mass number?

- Ans**
- ☐ 1. 18
 - ☒ 2. 35
 - ☐ 3. 24
 - ☐ 4. 34

Q.93 Which of the following oxides is amphoteric in nature?

- Ans**
- ☐ 1. Sodium peroxide
 - ☐ 2. Copper oxide
 - ☐ 3. Calcium oxide
 - ☒ 4. Aluminium oxide

Q.94 If a force of 2 N gives a mass m_1 , an acceleration of 8 m s^{-2} and a mass m_2 , an acceleration of 15 m s^{-2} , what will be the total mass if both the masses were tied together?

- Ans**
- ☐ 1. $\frac{10}{40} \text{ kg}$
 - ☐ 2. $\frac{3}{10} \text{ kg}$
 - ☐ 3. $\frac{4}{10} \text{ kg}$
 - ☒ 4. $\frac{23}{60} \text{ kg}$

Q.95 The cost price of a toy is ₹210. What should be its MRP so that after a discount of 5% the shopkeeper gains 90%?

- Ans**
- ☐ 1. ₹480
 - ☐ 2. ₹400
 - ☒ 3. ₹420
 - ☐ 4. ₹450

Q.96 If $AB = k + 3$, $BC = 2k$ and $AC = 5k - 5$, then for what value of 'k' does B lie on AC?

- Ans**
- ☐ 1. 3
 - ☒ 2. 4
 - ☐ 3. 8
 - ☐ 4. 2

Q.97 Which of the following compounds is used as an antacid?

- Ans**
- ☐ 1. Calcium oxide
 - ☐ 2. Calcium hydroxide
 - ☒ 3. Magnesium hydroxide
 - ☐ 4. Sodium chloride

Q.98 If a 3-digit number $2y5$ is divisible by 11, then the value of digit 'y' is:

- Ans**
- ☒ 1. 7
 - ☐ 2. 2
 - ☐ 3. 9
 - ☐ 4. 3

Q.99 If the volume of a cube is 729 cm^3 , then the measure of the main diagonal of the cube will be:

- Ans**
- ☐ 1. 9 cm
 - ☐ 2. 7 cm
 - ☐ 3. $7\sqrt{3}$ cm
 - ☒ 4. $9\sqrt{3}$ cm

Q.100 A and B can do a piece of work in 12 days and 16 days, respectively. Both work for 3 days and then A goes away. Find how long will B take to complete the remaining work?

- Ans**
- ☐ 1. 12 days
 - ☐ 2. 15 days
 - ☐ 3. 10 days
 - ☒ 4. 9 days

2024/12/30-23:06:04



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	30/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 If each vowel in the word DIALECT is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order and then the group of letters thus formed is arranged in English alphabetical order, then which of the following letters will be third from the right?

- Ans**
- ☒ 1. E
 - ☒ 2. M
 - ☒ 3. F
 - ☒ 4. J

Q.2 নিচে একটি বিবৃতিকে অনুসরণ করে, I এবং II সংখ্যায়ুক্ত দুটি সম্ভাব্য কারণ দেওয়া হয়েছে। বিবৃতিটি মনোযোগ সহকারে পড়ুন এবং দুটির মধ্যে কোন কারণটি/কারণগুলি বিবৃতিতে প্রদত্ত ঘটনা/পর্যবেক্ষণ/তথ্যকে সম্যকরূপে ব্যাখ্যা করে তা নির্ধারণ করুন।

বিবৃতি - প্রাথমিকভাবে মানুষের দ্বারা উৎপন্ন গ্রিনহাউস গ্যাসের কারণে গত শতাব্দীতে পৃথিবী পৃষ্ঠের গড় তাপমাত্রার অস্বাভাবিক দ্রুত বৃদ্ধি বিশ্ব উষ্ণায়ন ঘটায়।

কারণ:

- I. জীববিশেষজ্ঞ জ্বালানী জ্বালিয়ে বিদ্যুৎ এবং তাপ উৎপন্ন করার ফলে বিশ্বব্যাপী গ্রিনহাউস গ্যাস নির্গমনের অধিকাংশ ঘটনা ঘটে।
- II. অরণ্য ছেদন বিশ্বব্যাপী গ্রিনহাউস গ্যাস নির্গমনের জন্য দায়ী। এটি তাদের প্রায় 25% এর জন্য দায়ী।

- Ans**
- ☒ 1. শুধুমাত্র I সম্ভাব্য কারণ।
 - ☒ 2. I ও II উভয়ই সম্ভাব্য কারণ।
 - ☒ 3. শুধুমাত্র II সম্ভাব্য কারণ।
 - ☒ 4. I বা II কোনোটিই সম্ভাব্য কারণ নয়।

Q.3 The average of 7 consecutive numbers is 33. The greatest of these numbers is:

- Ans**
- ☒ 1. 30
 - ☒ 2. 28
 - ☒ 3. 36
 - ☒ 4. 33

Q.4 OLQN is related to URWT in a certain way based on the English alphabetical order. In the same way, LINK is related to ROTQ. To which of the following options is IFKH related, following the same logic?

- Ans**
- ☒ 1. OLQN
 - ☐ 2. LONQ
 - ☐ 3. LOQN
 - ☐ 4. OLNQ

Q.5 Which of the following numbers is divisible by all the natural numbers from 1 to 10 (both inclusive)?

- Ans**
- ☐ 1. 1000
 - ☒ 2. 2520
 - ☐ 3. 504
 - ☐ 4. 608

Q.6 A boy of weight 600 N climbs up a rope through a height of 10 m. He takes 20 s to accomplish this task. What is the power expended by him?

- Ans**
- ☒ 1. 300 W
 - ☐ 2. 200 W
 - ☐ 3. 100 W
 - ☐ 4. 150 W

Q.7 In an electric circuit, the device that acts as a variable resistor is called _____.

- Ans**
- ☐ 1. galvanometer
 - ☐ 2. ammeter
 - ☐ 3. voltmeter
 - ☒ 4. rheostat

Q.8 When sodium hydroxide reacts with water, which of the following products is/are formed?

- Ans**
- ☐ 1. Only $\text{Na}^+(\text{aq})$ ions
 - ☐ 2. Both $\text{Na}^+(\text{aq})$ and Cl_2
 - ☐ 3. Only $\text{OH}^-(\text{aq})$ ions
 - ☒ 4. Both $\text{Na}^+(\text{aq})$ and $\text{OH}^-(\text{aq})$ ions

Q.9 The volume of a cube of side $6xyz^2$ is:

- Ans**
- ☐ 1. $26xyz^2$
 - ☐ 2. $36xyz^2$
 - ☐ 3. $216x^3y^3z^3$
 - ☒ 4. $216x^3y^3z^6$

Q.10 Which of the following quantities determine the rate of work performed by a machine?

- Ans**
- ☐ 1. Total force exerted
 - ☒ 2. Power
 - ☐ 3. Rate of change of velocity
 - ☐ 4. Total energy consumed

Q.11 Which of the following is NOT part of India's 12 forts nominated for UNESCO World Heritage under the title 'Maratha Military Landscapes of India' for 2024-25?

- Ans**
- ☐ 1. Rajgad
 - ☐ 2. Raigad
 - ☒ 3. Karnala Fort
 - ☐ 4. Salher

Q.12 Find the simple interest on ₹5,000 as a sum borrowed at 4% per year rate of interest for 5 years.

- Ans**
- ☐ 1. ₹800
 - ☐ 2. ₹1,200
 - ☐ 3. ₹1,300
 - ☒ 4. ₹1,000

Q.13 কারখানায় একটি পণ্য উৎপাদন করতে মনজিভের ₹2,000 খরচ হয়েছিল। কারখানা থেকে পণ্যটিকে শোরুম পর্যন্ত পরিবহনের জন্য তাকে উৎপাদন খরচের 10% বায় করতে হয়েছিল। মনজিৎ শোরুম থেকে যে পণ্য বিক্রি করেছিলেন সেটি পণ্যটির উৎপাদন এবং পরিবহনের মোট খরচের চেয়ে 15% অধিক। মনজিৎ কত দামে পণ্যটি শোরুম থেকে বিক্রি করেছিলেন?

- Ans**
- ☐ 1. ₹2,500
 - ☐ 2. ₹2,250
 - ☐ 3. ₹2,300
 - ☒ 4. ₹2,530

Q.14 In plants, after fertilisation the ovary develops into a _____.

- Ans**
- ☐ 1. Seed
 - ☐ 2. Flower
 - ☐ 3. Seedling
 - ☒ 4. Fruit

Q.15 In which organelle of the plant cells does photosynthesis take place?

- Ans**
- ☒ 1. Chloroplast
 - ☐ 2. Mitochondria
 - ☐ 3. Nucleus
 - ☐ 4. Ribosome

Q.16 A একটি কাজ 4 দিনে করতে পারে। B এটি 20 দিনে করতে পারে। C এর সহায়তায় তারা 2 দিনে কাজটি শেষ করে। C একা কাজটি _____ দিনে করতে পারবে।

- Ans**
- ☐ 1. 6
 - ☐ 2. 7
 - ☒ 3. 5
 - ☐ 4. 4

Q.17 Which of the following is the melting point of ice?

- Ans**
- ☒ 1. 273.15 K
 - ☐ 2. 373.15 K
 - ☐ 3. 200.15 K
 - ☐ 4. 300.15 K

Q.18 Which of the following is NOT a unicellular organism?

- Ans
- ☒ 1. Paramecium
 - ☒ 2. Bacteria
 - ☒ 3. Fungi
 - ☒ 4. Chlamydomonas

Q.19 Which of the following is obtained when dilute HCl is added to a beaker that contains copper oxide?

- Ans
- ☒ 1. The blue-green colour of copper (II) chloride
 - ☒ 2. The red colour of copper (II) chloride
 - ☒ 3. The blue-green colour of copper (III) chloride
 - ☒ 4. The colourless solution of copper (II) chloride

Q.20 একটি উদ্ভিদ কোশকে, ওই কোশের চেয়ে বেশি জলের ঘনত্ব বিশিষ্ট একটি মাধ্যমে স্থাপন করা হলে কী ঘটবে?

- Ans
- ☒ 1. এটি সম্ভবত শুকিয়ে যাবে
 - ☒ 2. এটি ফেটে যাবে
 - ☒ 3. এটিতে কোন পরিবর্তন দেখা যাবে না
 - ☒ 4. এটি সম্ভবত স্ফীত হবে

Q.21 Select the INCORRECT statement related to tropism.

- Ans
- ☒ 1. Chemotropism – movement towards chemical
 - ☒ 2. Phototropism – movement towards water
 - ☒ 3. Hydrotropism – movement towards water
 - ☒ 4. Geotropism – in response to the pull of earth or gravity

Q.22 The speed of a train is 90 km/h. What is the distance covered by it in 10 minutes?

- Ans
- ☒ 1. 13 km
 - ☒ 2. 5 km
 - ☒ 3. 15 km
 - ☒ 4. 11 km

Q.23 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans
- ☒ 1. ZG – HQ
 - ☒ 2. TA – BK
 - ☒ 3. BI – JS
 - ☒ 4. SW – FM

Q.24 which city succeeded in hosting India's first-ever night street race in August 2023?

- Ans
- ☒ 1. Chennai
 - ☒ 2. Kolkata
 - ☒ 3. Mumbai
 - ☒ 4. Bengaluru

Q.25 Anil Pradhan, co-founder of NGO Young Tinker Foundation, working towards education in underserved areas, awarded with Rohini Nayyar Prize for Outstanding Contribution to Rural Development in 2024, belongs to which of the following states?

- Ans**
- ✓ 1. Odisha
 - ✗ 2. Assam
 - ✗ 3. West Bengal
 - ✗ 4. Arunachal Pradesh

Q.26 Which of the following statements is true for the appliances used in domestic circuits:

- Ans**
- ✗ 1. Heavy appliances like AC, Geyser are connected in parallel and light appliances like bulbs, tubelights are connected in series
 - ✗ 2. Heavy appliances like AC, Geyser are connected in series and light appliances like bulbs, tubelights are connected in parallel
 - ✓ 3. All the appliances are connected in parallel
 - ✗ 4. All the appliances are connected in series

Q.27 The device used for measuring potential difference across the ends of a conductor is:

- Ans**
- ✗ 1. Galvanometer
 - ✓ 2. Voltmeter
 - ✗ 3. Battery
 - ✗ 4. Ammeter

Q.28 A body undergoes a displacement of 2m on application of a constant force of 10N; the work done will be:

- Ans**
- ✗ 1. 0 J
 - ✗ 2. 2 J
 - ✗ 3. 10 J
 - ✓ 4. 20 J

Q.29 The value of

$$\frac{3}{7} + \frac{2}{7} + \frac{1}{14} - 3 = ?$$

- Ans**
- ✗ 1. $-\frac{27}{14}$
 - ✗ 2. $\frac{13}{14}$
 - ✓ 3. $-\frac{31}{14}$
 - ✗ 4. $\frac{27}{14}$

Q.30 The correct relation between charge(Q) following through a conductor, time(t) for which the charge follows and the current (I) following through the conductor is:

- Ans**
- ✗ 1. $I = Q t^2$
 - ✗ 2. $I = Qt$
 - ✗ 3. $I = Q^2 t$
 - ✓ 4. $I = \frac{Q}{t}$

Q.31 Work has the same unit as that of _____.

- Ans**
- ☒ 1. force
 - ☒ 2. energy
 - ☐ 3. acceleration
 - ☐ 4. momentum

Q.32 The curved surface area of a right circular cylinder is 616 cm^2 and the area of its base is 38.5 cm^2 . What is the volume (in cm^3) of the cylinder? (Use $\pi = \frac{22}{7}$)

- Ans**
- ☒ 1. 1078
 - ☐ 2. 1155
 - ☐ 3. 1243
 - ☐ 4. 1408

Q.33 All 37 people are standing in a row, facing north. Arihant is 14th from the right end while Chery is 21st from the left end. How many people are there between Arihant and Chery?

- Ans**
- ☐ 1. 5
 - ☒ 2. 2
 - ☐ 3. 3
 - ☐ 4. 6

Q.34 Which state governor's Additional Secretary authored the book "Maa-Mother" which was launched by Law and Justice Minister Arjun Ram Meghwal in November 2024?

- Ans**
- ☒ 1. Kerala
 - ☐ 2. Tamil Nadu
 - ☐ 3. Maharashtra
 - ☐ 4. Rajasthan

Q.35 94% of the population of a village is 22,560. The total population of the village is:

- Ans**
- ☒ 1. 24,000
 - ☐ 2. 25,640
 - ☐ 3. 24,936
 - ☐ 4. 32,256

Q.36 If the radius of a sphere is reduced by 50%, then the new volume will become _____ the original volume.

- Ans**
- ☐ 1. 4 times
 - ☐ 2. $\frac{1}{4}$ times
 - ☒ 3. $\frac{1}{8}$ times
 - ☐ 4. 8 times

Q.37 Which of the following statements is INCORRECT about the use of washing soda?

- Ans**
- ☐ 1. It is used for removing permanent hardness of water.
 - ☐ 2. Sodium carbonate can be used as a cleaning agent for domestic purposes.
 - ☒ 3. It is not used in the paper industry.
 - ☐ 4. It is used in the manufacture of sodium compounds such as borax.

Q.38 Which of the following budgets announced the release of 109 high-yielding and climate-resilient varieties of 32 field and horticulture crops?

- Ans**
- ☒ 1. Union Budget 2022-23
 - ☒ 2. Union Budget 2024-25
 - ☒ 3. Union Budget 2021-22
 - ☒ 4. Union Budget 2023-24

Q.39 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 80?

- Ans**
- ☒ 1. 18 D 5 A 42 B 6 C 17
 - ☒ 2. 18 A 5 B 42 C 6 D 17
 - ☒ 3. 18 C 5 A 42 D 6 B 17
 - ☒ 4. 18 B 5 C 42 A 6 D 17

Q.40 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$22 \text{ B } 5 \text{ D } 12 \text{ A } 4 \text{ C } 6 = ?$$

- Ans**
- ☒ 1. 112
 - ☒ 2. 111
 - ☒ 3. 114
 - ☒ 4. 113

Q.41 In a certain code language, 'HANKY' is coded as '56428' and 'SNAKY' is coded as '48725'. What is the code for 'H' in the given code language?

- Ans**
- ☒ 1. 2
 - ☒ 2. 4
 - ☒ 3. 6
 - ☒ 4. 8

Q.42 Which of the following statements regarding ionic compounds is INCORRECT?

- Ans**
- ☒ 1. Ionic compounds have a high melting point.
 - ☒ 2. Ionic compounds in solid state conduct electricity.
 - ☒ 3. Ionic compounds are generally soluble in water.
 - ☒ 4. Ionic compounds are solids.

Q.43 Mechanical energy of a body includes _____.

- Ans**
- ☒ 1. kinetic energy only
 - ☒ 2. heat energy only
 - ☒ 3. both potential energy and kinetic energy
 - ☒ 4. potential energy only

Q.44 Which of the following elements is most likely to form a negative ion (anion)?

- Ans**
- ☐ 1. Calcium (Ca)
 - ☐ 2. Aluminium (Al)
 - ☒ 3. Chlorine (Cl)
 - ☐ 4. Sodium (Na)

Q.45 A father's age is seven times that of his son's age. Three years from now, the age of the father will be five times that of his son's age. After how many years will their combined age be 62 years?

- Ans**
- ☐ 1. 6 years
 - ☐ 2. 3 years
 - ☒ 3. 7 years
 - ☐ 4. 5 years

Q.46 Which of the following pairs is correct in terms of pH values?

- (a) Tooth decay in humans: pH of mouth > 5.5
- (b) pH range of human body: 7.0 to 7.8
- (c) Acid rain: pH of rain water > 8

- Ans**
- ☒ 1. Only (b) is correct.
 - ☐ 2. (a), (b) and (c) are correct.
 - ☐ 3. Only (c) is correct.
 - ☐ 4. Only (a) is correct.

Q.47 Surendra buys mangoes at the rate of 3 kg for ₹21 and sells them at 5 kg for ₹50. To earn ₹102 as profit, he must sell:

- Ans**
- ☐ 1. 56 kg
 - ☒ 2. 34 kg
 - ☐ 3. 32 kg
 - ☐ 4. 26 kg

Q.48 Which of the following diseases is/are a viral infection(s) transmitted through sexual contact?

- a. HIV
- b. Warts
- c. Gonorrhoea
- d. Syphilis

- Ans**
- ☐ 1. Only a
 - ☐ 2. Only c and d
 - ☒ 3. Only a and b
 - ☐ 4. Only c

Q.49 If 'P' stands for '×', 'Q' stands for '+', 'R' stands for '−' and 'S' stands for '÷', then the resultant of which of the following would be 75?

- Ans**
- ☐ 1. 13 S 5 S 2 P 6 P 3 R 24 R (44 R 2)
 - ☐ 2. 13 P 5 S 2 P 6 Q 3 S 24 R (44 Q 2)
 - ☐ 3. 13 R 5 S 2 P 6 P 3 S 24 R (44 P 2)
 - ☒ 4. 13 P 5 R 2 P 6 P 3 S 24 S (44 Q 2)

Q.50 Which of the following statements is/are correct regarding the liquid state of matter?

Statement I: Liquids have fixed volume but no fixed shape.

Statement II: The rate of diffusion of liquids is higher than that of solids.

- Ans**
- ☐ 1. Neither statement I nor II is correct.
 - ☐ 2. Only statement II is correct.
 - ☒ 3. Both statements I and II are correct.
 - ☐ 4. Only statement I is correct.

Q.51 A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for ₹3,200. With the help of C, they completed the work in 3 days. How much is to be paid to B?

- Ans**
- ☐ 1. ₹800
 - ☒ 2. ₹1,200
 - ☐ 3. ₹1,400
 - ☐ 4. ₹600

Q.52 In some multicellular organisms, the body breaks up into smaller pieces upon maturation and each piece grows into a new organism. What is this known as?

- Ans**
- ☐ 1. Sexual reproduction
 - ☐ 2. Gamete formation
 - ☒ 3. Fragmentation
 - ☐ 4. Budding

Q.53 How does a plant move its leaves in response to touch?

- Ans**
- ☐ 1. By changing the amount of nucleic acid in them
 - ☐ 2. By changing the amount of protein in them
 - ☐ 3. By changing the amount of lipid in them
 - ☒ 4. By changing the amount of water in them

Q.54 Which of the following statements is/are correct regarding the Raigad Fort?

(1) It is part of the 12 forts nominated for UNESCO World Heritage under the title "Maratha Military Landscapes of India" for 2024-25.

(2) It was the capital of the most illustrious Maratha sovereign, nurtured by Chhatrapati Shivaji Maharaj.

(3) Raigad, surrounded by valleys shaped by the Kal and Gandhari rivers, stands as an isolated massif without connections to neighbouring hills.

- Ans**
- ☐ 1. Only 1 and 3
 - ☒ 2. 1, 2 and 3
 - ☐ 3. Only 2 and 3
 - ☐ 4. Only 1 and 2

Q.55 If $64 : x :: x : 169$, and $x > 0$, find the value of x .

- Ans**
- ☒ 1. 104
 - ☐ 2. 108
 - ☐ 3. 112
 - ☐ 4. 96

Q.56 Which of the following is a pair of co-prime numbers?

- Ans**
- ☐ 1. 455, 49
 - ☒ 2. 81, 16
 - ☐ 3. 363, 77
 - ☐ 4. 52, 24

Q.57 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 44 :: 72 : Y

- Ans**
- ☐ 1. X = 74, Y = 48
 - ☒ 2. X = 68, Y = 46
 - ☐ 3. X = 66, Y = 32
 - ☐ 4. X = 62, Y = 34

Q.58 The action of chlorine on dry Ca(OH)_2 produces which of the following?

- Ans**
- ☐ 1. Hydrochloric acid
 - ☐ 2. Calcium chloride
 - ☒ 3. Bleaching powder
 - ☐ 4. Calcium oxide





Q.59 Which of the following methods is NOT used for preventing iron from rusting?

- Ans**
- ☐ 1. Chrome plating
 - ☐ 2. Painting
 - ☐ 3. Galvanising
 - ☒ 4. Heating

Q.60 Which organisation conducted the study on background radiation levels in Kerala?

- Ans**
- ☒ 1. Bhabha Atomic Research Centre (BARC)
 - ☐ 2. Ministry of Environment
 - ☐ 3. Geological Survey of India (GSI)
 - ☐ 4. Indian Space Research Organisation (ISRO)

Q.61 The force experienced by a current carrying conductor in a magnetic field is maximum when the angle between the direction of current and the direction of magnetic field is

- Ans**
-  1. 60°
 -  2. 90°
 -  3. 0°
 -  4. 45°

Q.62 Identify the substance that gets reduced in the given equation:




- Ans**
-  1. CO
 -  2. Zn
 -  3. ZnO
 -  4. C

Q.63 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

KNQ, LOR, MPS, NQT, ?

- Ans**
-  1. ORU
 -  2. ROU
 -  3. RUO
 -  4. OUR

Q.64 The marked price of an article is ₹100. If the article is sold at a discount of 25%, then the selling price of the article is:





- Ans**
-  1. ₹80
 -  2. ₹70
 -  3. ₹75
 -  4. ₹125

Q.65 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(105, 35, 7)

(135, 45, 9)

- Ans**
-  1. (150, 50, 10)
 -  2. (90, 25, 5)
 -  3. (115, 30, 6)
 -  4. (120, 40, 12)

Q.66 Which of the following is least reactive?

- Ans**
-  1. Na
 -  2. K
 -  3. Ca
 -  4. Mg

Q.67 A sum of money doubles itself at a certain rate of compound interest in 12 years when the interest is compounded annually. In how many more years will it become eight times of itself?

- Ans**
- ☒ 1. 24
 - ☐ 2. 48
 - ☐ 3. 12
 - ☐ 4. 36

Q.68 Select the INCORRECT pair related to digestive glands and their enzymes.

- Ans**
- ☒ 1. Salivary gland – trypsin
 - ☐ 2. Liver – bile juice
 - ☐ 3. Gastric gland – pepsin
 - ☐ 4. Pancreas – pancreatic juice

Q.69 Kishore Jena became first javelin thrower from which state to represent India at the finals of the World Athletics Championship?

- Ans**
- ☐ 1. West Bengal
 - ☒ 2. Odisha
 - ☐ 3. Rajasthan
 - ☐ 4. Karnataka

Q.70 Which mirror has negative focal length?

- Ans**
- ☐ 1. Plane mirror
 - ☐ 2. Both convex and concave
 - ☒ 3. Concave
 - ☐ 4. Convex

Q.71 In a certain code language, 'FOLD' is coded as '3579' and 'RAIL' is coded as '2456'. What is the code for 'L' in the given code language?

- Ans**
- ☐ 1. 6
 - ☐ 2. 4
 - ☐ 3. 7
 - ☒ 4. 5

Q.72 প্রদত্ত ক্রমটি পড়ুন এবং নিম্নলিখিত প্রশ্নের উত্তর দিন (সমস্ত সংখ্যা শুধুমাত্র এক অঙ্কের সংখ্যা, এবং সমস্ত গণনা বামদিক থেকে ডানদিকে করতে হবে)।

(বামদিক) 5 4 6 3 4 1 7 9 5 4 8 1 5 2 3 1 7 1 7 4 3 9 6 9 4 5 1 4 7 (ডানদিক)

এইরূপ কতগুলি জোড় অঙ্ক আছে, যার প্রতিটির ঠিক পূর্বে একটি পূর্ণবর্গ এবং ঠিক পরবর্তীতে একটি বিজোড় অঙ্ক আছে? (দ্রষ্টব্য: 1 একটি পূর্ণবর্গ হিসাবে বিবেচিত হবে।)

- Ans**
- ☒ 1. 5
 - ☐ 2. 6
 - ☐ 3. 3
 - ☐ 4. 1

Q.73 What is the simple form of protein?

- Ans**
- ☐ 1. Glucose
 - ☐ 2. Glycerol
 - ☒ 3. Amino acid
 - ☐ 4. Fatty acid

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Q.74 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

681, 607, 533, 459, 385, ?

- Ans**
- ☐ 1. 354
 - ☐ 2. 329
 - ☒ 3. 311
 - ☐ 4. 345

Q.75 In November 2024, Centre for Development of Telematics (C-DOT) signed an agreement with which Indian Institute of Technology (IIT) for development of 'Millimeter Wave Transceiver for 5G Rural Connectivity', which aims to enable affordable broadband and mobile services across India?

- Ans**
- ☐ 1. IIT Madras
 - ☐ 2. IIT Delhi
 - ☒ 3. IIT Roorkee
 - ☐ 4. IIT Bombay

Q.76 An amount is distributed among A, B and C in the ratio of 5 : 7 : 15. If A's share is ₹1,500, then the total amount is:

- Ans**
- ☐ 1. ₹5,400
 - ☐ 2. ₹2,700
 - ☒ 3. ₹8,100
 - ☐ 4. ₹4,200

Q.77 If PQRS is a rhombus such that $\angle PRQ = 40^\circ$, then $\angle PSQ$ is:

- Ans**
- ☐ 1. 60°
 - ☒ 2. 50°
 - ☐ 3. 40°
 - ☐ 4. 45°

Q.78 Study the given table and answer the question that follows.

The table shows the demand of different shoe sizes as obtained in a survey.

Shoe size	Number of pairs demanded
5	44
6	48
7	58
8	46
9	39
10	37

Find the modal size of shoes demanded that one can obtain from the survey.

- Ans**
- ☐ 1. 9
 - ☐ 2. 5
 - ☐ 3. 6
 - ☒ 4. 7

Q.79 যদি RHYMING শব্দের প্রতিটি ব্যঞ্জনবর্ণ ইংরেজি বর্ণানুক্রম অনুসারে তার ঠিক পরবর্তী বর্ণে পরিবর্তিত হয় এবং প্রতিটি স্বরবর্ণ ইংরেজি বর্ণানুক্রম অনুসারে তার ঠিক পূর্ববর্তী বর্ণে পরিবর্তিত হয়, তাহলে এইভাবে গঠিত নতুন বর্ণ-গুচ্ছে নিম্নের কোন বর্ণটি দুবার পুনরাবৃত্ত হবে?

- Ans**
- ☒ 1. O
 - ☒ 2. H
 - ☒ 3. I
 - ☒ 4. S

Q.80 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

BEST - SBET - TSEB

ROLE - LROE - ELOR

- Ans**
- ☒ 1. RATE - ARTE - EATR
 - ☒ 2. WEST - WSET - TSEW
 - ☒ 3. DIVE - VDIE - EVID
 - ☒ 4. TANG - NTAG - ANGT

Q.81 The sperms produced in the testes are transported via the _____.

- Ans**
- ☒ 1. vas deferens
 - ☒ 2. Urethra
 - ☒ 3. seminal vesicle
 - ☒ 4. urinary bladder

Q.82 What is the reason for the formation of a bud in Hydra?

- Ans**
- ☒ 1. Repeated cell division at one specific site
 - ☒ 2. Overgrowth of the whole body
 - ☒ 3. Cell cycle
 - ☒ 4. Mutation

Q.83 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EHL, GJN, ILP, KNR, ?

- Ans**
- ☒ 1. MPT
 - ☒ 2. PTM
 - ☒ 3. MTP
 - ☒ 4. PMT

Q.84 Which of the following substances is NOT selectively reabsorbed as the urine flows along the tubules?

- Ans**
- ☒ 1. Glucose
 - ☒ 2. Amino acids
 - ☒ 3. Urea
 - ☒ 4. Salts

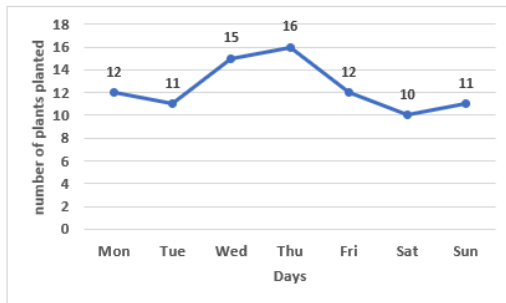
Q.85 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. MQL
 - ☐ 2. EID
 - ☐ 3. OSN
 - ☒ 4. IMG

Q.86 Study the given graph and answer the question that follows.

The line graph shows the number of plants planted by a student during the week.



What is the ratio of the number of plants planted on Friday to the number of plants planted on Saturday?

- Ans**
- ☐ 1. 1 : 9
 - ☐ 2. 7 : 9
 - ☐ 3. 2 : 5
 - ☒ 4. 6 : 5

Q.87 Which of the following numbers is a perfect square?

- Ans**
- ☐ 1. 222
 - ☒ 2. 196
 - ☐ 3. 124
 - ☐ 4. 141

Q.88 The value of $\frac{50 + 50 \cot^2 A}{25 + 25 \tan^2 A}$ is:

- Ans**
- ☒ 1. $2 \cot^2 A$
 - ☐ 2. $\frac{1}{2} \cot^2 A$
 - ☐ 3. $2 \tan^2 A$
 - ☐ 4. $\frac{1}{2} \tan^2 A$

Q.89 Two resistors of 2Ω each are connected in series to a battery of 4V. The current in Ampere flowing through the resistors will be:

- Ans**
- ☐ 1. $1/2$
 - ☒ 2. 1
 - ☐ 3. 4
 - ☐ 4. 2

Q.90 A person spent ₹273 on buying a total of 50 packets of chips and biscuits. If the cost of each packet of chips is ₹6 and that of each biscuit packet is ₹5, then how many more biscuit packets than chips packets did he buy?

- Ans**
- ☐ 1. 5
 - ☒ 2. 4
 - ☐ 3. 6
 - ☐ 4. 3

Q.91 Charlie starts from point A and drives 5 km towards the South. He then takes two simultaneous right turns and drives 3 km and 2 km, respectively. He takes a final right turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only. unless specified)

- Ans**
- ☐ 1. 2 km East
 - ☐ 2. 3 km South
 - ☐ 3. 2 km North
 - ☒ 4. 3 km North

Q.92 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only two people sit between F and L when counted from the left of L. N sits third to the left of M. G sits to the immediate right of M. G sits second to the left of F. E is not an immediate neighbour of N. Who sits third to the right of D?

- Ans**
- ☒ 1. G
 - ☐ 2. N
 - ☐ 3. E
 - ☐ 4. F

Q.93 The sum of squares of two positive numbers is 145. If the square root of one of the numbers is 3, then find the other number.

- Ans**
- ☐ 1. 9
 - ☐ 2. 136
 - ☒ 3. 8
 - ☐ 4. 64

Q.94 _____ এর ফলে বিভিন্ন ধরনের স্থায়ী কলা উৎপন্ন হয়।

- Ans**
- ☐ 1. দীর্ঘায়ন(Elongation)
 - ☒ 2. পৃথকীকরণ (Differentiation)
 - ☐ 3. অঙ্গজ জনন (Vegetative Propagation)
 - ☐ 4. অঙ্কুরোদগম(Germination)

Q.95 Which system has been inducted into the Indian Army's Corps of Army Air Defence to enhance defence capabilities and technology absorption?

- Ans**
- ☐ 1. Prithvi Command and Control System
 - ☐ 2. Agni Command System
 - ☐ 3. Varunastra Control Unit
 - ☒ 4. Akashteer Command and Control System

Q.96 In a certain code language,
'P + Q' means 'P is the daughter of Q',
'P - Q' means 'P is the wife of Q',
'P x Q' means 'P is the son of Q' and
'P ÷ Q' means 'P is the husband of Q'.
How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
- ☐ 1. Sister
 - ☐ 2. Daughter's daughter
 - ☐ 3. Daughter
 - ☒ 4. Son's daughter

Q.97 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits to the immediate left of E. Only three people sit between E and Q when counted from the right of E. Only one person sits between B and P when counted from the right of B. F sits to the immediate right of B. How many people sit between R and E when counted from the left of R?

- Ans**
- ☐ 1. One
 - ☐ 2. Three
 - ☒ 3. Four
 - ☐ 4. Two

Q.98 Calculate the molecular mass of ammonia, NH_3 , using the provided atomic masses (Atomic mass of N = 14 u and H = 1 u).

- Ans**
- ☐ 1. 21 u
 - ☐ 2. 10 u
 - ☐ 3. 42 u
 - ☒ 4. 17 u

Q.99 The centre of curvature of a concave mirror lies _____ the mirror, whereas it lies _____ the mirror for a convex mirror.

- Ans**
- ☐ 1. in front of; in front of
 - ☐ 2. behind; behind
 - ☐ 3. behind; in front of
 - ☒ 4. in front of; behind

Q.100 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All planets are rocks.

All rocks are forests.

Conclusions:

(I) At least some rocks are planets.

(II) All planets are forests.

- Ans**
- ☐ 1. Neither conclusion I nor II follows
 - ☐ 2. Only conclusion II follows
 - ☐ 3. Only conclusion I follows
 - ☒ 4. Both conclusions I and II follow



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024

Test Date	30/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

* Note

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 In a parallelogram two adjacent sides are in the ratio 2 : 3 and the perimeter is 60 cm. The length of each of the two shorter sides of this parallelogram is:

- Ans**
- ✓ 1. 12 cm
 - ✗ 2. 13 cm
 - ✗ 3. 19 cm
 - ✗ 4. 18 cm

Q.2 1 kW power is equal to _____. (kW stands for kilowatt.)

- Ans**
- ✗ 1. 1 J/s
 - ✓ 2. 1000 J/s
 - ✗ 3. 10 J/s
 - ✗ 4. 100 J/s

Q.3 A and B invest ₹30,000 and ₹24,000, respectively, for one year. If they get a profit of ₹13,500, then the share of A in the profit will be:

- Ans**
- ✓ 1. ₹7,500
 - ✗ 2. ₹9,450
 - ✗ 3. ₹9,000
 - ✗ 4. ₹6,000

Q.4 Which of the following is NOT an example of homogeneous mixture?

- Ans**
- ✗ 1. A mixture of copper sulphate in water
 - ✗ 2. A mixture of sugar in water
 - ✗ 3. A mixture of salt in water
 - ✓ 4. A mixture of iron nails in water

Q.5 Consider a parallel combination of 3 resistors R_1 , R_2 and R_3 with currents I_1 , I_2 and I_3 , respectively. Which of the following is true? (I = total current, R_{eq} = equivalent resistance of the circuit)

Ans

✗ 1. $R_{eq} = R_1 + \frac{R_2 R_3}{R_2 + R_3}$

✓ 2. $I = I_1 + I_2 + I_3$

✗ 3. $\frac{1}{I} = \frac{1}{I_1} + \frac{1}{I_2} + \frac{1}{I_3}$

✗ 4. $R_{eq} = R_3 + \frac{R_2 R_1}{R_2 + R_1}$

Q.6 The power input in a circuit P can be expressed in terms of voltage V and current I in the circuit as follows:

Ans

✗ 1. $P = V/I$

✗ 2. $P = V^2 / I$

✓ 3. $P = VI$

✗ 4. $P = V^2 I$

Q.7 What is the measure of each exterior angle of a regular octagon?

Ans

✗ 1. 30°

✗ 2. 60°

✓ 3. 45°

✗ 4. 80°

Q.8 Who took oath as Chief Minister for the second time and the first to assume office after the scrapping of Article 370 in Jammu and Kashmir?

Ans

✗ 1. Mehbooba Mufti

✗ 2. Shri Farooq Abdullah

✗ 3. Shri Manoj Sinha

✓ 4. Shri Omar Abdullah

Q.9 The danger signal lights are usually red in colour because red is:

Ans

✗ 1. highest reflected by fog or smoke

✓ 2. least scattered by fog or smoke

✗ 3. not scattered at all by fog or smoke

✗ 4. highest scattered by fog or smoke

Q.10 Which of the following can increase the work done by a force on an object?

Ans

✓ 1. Increasing the displacement.

✗ 2. Reducing the displacement.

✗ 3. Reducing the force.

✗ 4. Reducing the mass.

Q.11 Identify the INCORRECT statement about muscle tissue.

- Ans**
- ✓ 1. Muscle tissues are made up of cuboidal cells.
 - ✗ 2. Special contractile proteins are present in muscles.
 - ✗ 3. Microscopes reveal alternate light and dark bands in voluntary muscles.
 - ✗ 4. The limbs have voluntary muscles.

Q.12 The average of thirteen consecutive integers is 36. If two times the smallest of these 13 integers is added to the largest of these 13 integers, what will be the sum obtained?

- Ans**
- ✓ 1. 102
 - ✗ 2. 115
 - ✗ 3. 121
 - ✗ 4. 110

Q.13 In a certain code language, 'ROAM' is coded as '2835' and 'MORE' is coded as '4538'. What is the code for 'A' in the given code language?

- Ans**
- ✗ 1. 3
 - ✗ 2. 8
 - ✗ 3. 5
 - ✓ 4. 2

Q.14 If A means +, B means −, C means ×, D means ÷, then what will come in place of the question mark (?) in the following equation?

$$21 \text{ D } 3 \text{ B } 4 \text{ C } 5 \text{ A } 22 = ?$$

- Ans**
- ✗ 1. 10
 - ✗ 2. 8
 - ✓ 3. 9
 - ✗ 4. 7

Q.15 What is the SI unit of universal gravitational constant G?


- Ans**
- ✗ 1. $\text{N m}^2/\text{kg}^{-1}$
 - ✗ 2. $\text{N m}^2/\text{kgs}^{-1}$
 - ✗ 3. N kgm^2
 - ✓ 4. $\text{N m}^2/\text{kg}^2$


Q.16 Which of the following unicellular organism change their shape?


- Ans**
- ✗ 1. Yeast
 - ✓ 2. Amoeba
 - ✗ 3. Paramecium
 - ✗ 4. Bacteria


Q.17 While subtracting 4 from $\frac{-3}{13}$, the resultant value is:

Ans

 1. $\frac{-53}{13}$

 2. $\frac{-55}{13}$


 3. $\frac{-51}{13}$


 4. $\frac{-54}{13}$


Q.18 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?


(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

Ans

 1. OJ-MP


 2. SN-QU


 3. QL-OR


 4. UP-SV


Q.19 Two pipes A and B can fill the tank in 40 and 60 minutes, respectively. Both the pipes are opened together. After how many minutes should the pipe B be turned off, so that the tank be fill in 30 minutes?

Ans

 1. 15 min

 2. 25 min

 3. 20 min

 4. 28 min

Q.20 What is the title of the book by Nandan Kamath that won the Sports Book of the Year award in 2024?

Ans

 1. Playing It My Way

 2. Boundary Lab

 3. Spirit of Sports

 4. The Winning Mindset

Q.21 What was India's rank in the 2024 Global Hunger Index (GHI), a tool used to measure and track hunger at the global, regional and national levels?

Ans

 1. 105


 2. 119


 3. 111


 4. 110


Q.22 Which of the following is/are called biological catalysts?

Ans

 1. Digestive juices

 2. Enzymes

 3. Hydrochloric acid

 4. Mucus

Q.23 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some pulses are flours.


All biscuits are curds.


All biscuits are flours.


Conclusions:


(I) All flours are curds.

(II) Some biscuits are pulses.


Ans  1. Neither conclusion (I) nor (II) follows.


 2. Only conclusion (I) follows.


 3. Only conclusion (II) follows.


 4. Both conclusions (I) and (II) follow.

Q.24 The term 'Catenation' is used to define a unique property of carbon. Which of the following gives the correct definition of catenation?

Ans  1. Unique ability to form bonds with other atoms of hydrogen.


 2. Unique ability to form bonds with other atoms of carbon.


 3. Unique ability to form bonds with other atoms of oxygen.


 4. Unique ability to form bonds with other atoms of nitrogen.

Q.25 Which of the following forms a common passage for both the sperms and urine in males?

Ans  1. Scrotum

 2. Urethra

 3. Urinary bladder

 4. Vas deferens

Q.26 The average of Kanchan's marks in 7 subjects is 75. Her average in six subjects excluding Science is 72. How many marks did she get in Science?

Ans  1. 90

 2. 93

 3. 95

 4. 72

Q.27 Which new initiative was launched by the government on National Sports Day 2024?

Ans  1. Retired Sportsperson Empowerment Training (RESET) Programme

 2. National Fitness Challenge

 3. Fit India Movement

 4. National Sports Scholarship Scheme

Q.28 What is the value of x for balanced chemical equation $3\text{Fe} + x\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$?

Ans  1. 5

 2. 1

 3. 3

 4. 4

Q.29 $(a - b)^3 + (b - c)^3 + (c - a)^3 = ?$, which of the following should come in place of ? so that relation always holds true?

- Ans**
- ☐ 1. $2(a - b)(b - c)(c - a)$
 - ☐ 2. $(a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$
 - ☒ 3. $3(a - b)(b - c)(c - a)$
 - ☐ 4. $(a - b)(b - c)(c - a)$

Q.30 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 2 2 4 8 2 4 6 4 2 6 8 8 6 7 4 5 3 6 2 8 7 1 3 3 6 8 6 4 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit?

(Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 1
 - ☒ 2. 0
 - ☐ 3. 4
 - ☐ 4. 2

Q.31 The greatest number among $\sqrt{2}$, $3^{1/3}$, $4^{1/4}$ is:

- Ans**
- ☐ 1. All are equal
 - ☐ 2. $4^{1/4}$
 - ☒ 3. $3^{1/3}$
 - ☐ 4. $\sqrt{2}$

Q.32 Most mature plant cells have a _____ that helps to maintain the turgidity of the cell and store important substances including wastes.

- Ans**
- ☐ 1. small ribosome
 - ☒ 2. large central vacuole
 - ☐ 3. leucoplasts
 - ☐ 4. chromoplasts

Q.33 Find one-third part of a number whose one-third part exceeds the one-fifth part by 6.

- Ans**
- ☐ 1. 24
 - ☒ 2. 15
 - ☐ 3. 5
 - ☐ 4. 45

Q.34 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

UQ-VR-WY

RN-SO-TV

- Ans**
- ☒ 1. NK-PL-QR
 - ☒ 2. OK-PL-QS
 - ☒ 3. NK-PM-QS
 - ☒ 4. OK-PM-QR

Q.35 If the roots of a plant always grow downwards due to geotropism, then the growth of pollen tubes towards ovules is due to _____.

- Ans**
- ☒ 1. phototropism
 - ☒ 2. geotropism
 - ☒ 3. hydrotropism
 - ☒ 4. chemotropism

Q.36 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(12, 38, 26)

(50, 75, 25)

- Ans**
- ☒ 1. (8, 32, 7)
 - ☒ 2. (21, 40, 15)
 - ☒ 3. (9, 28, 16)
 - ☒ 4. (14, 42, 28)

Q.37 Which of the following is NOT an abiotic component of the ecosystem?

- Ans**
- ☒ 1. Rainfall
 - ☒ 2. Grass
 - ☒ 3. Wind
 - ☒ 4. Soil

Q.38 The fragmentation method of reproduction is shown in _____.

- Ans**
- ☒ 1. Spirogyra
 - ☒ 2. Amoeba
 - ☒ 3. Plasmodium
 - ☒ 4. Hydra

Q.39 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(25, 5, 20)

(40, 8, 32)

- Ans**
- ☒ 1. (100, 16, 64)
 - ☒ 2. (80, 16, 60)
 - ☒ 3. (80, 16, 64)
 - ☒ 4. (80, 14, 64)

Q.40 At which event was Ram Charan awarded the title of Ambassador for Indian Art and Culture?

- Ans**
- ☒ 1. Cannes Film Festival 2024
 - ☒ 2. Toronto International Film Festival 2024
 - ☒ 3. Indian Film Festival of Melbourne (IFFM) 2024
 - ☒ 4. International Film Festival of India 2024

Q.41 ATP is broken down giving rise to a fixed amount of energy that can drive the endothermic reactions taking place in which cell organelle of a cell?

- Ans**
- ☒ 1. Mitochondria
 - ☒ 2. Ribosome
 - ☒ 3. Chloroplast
 - ☒ 4. Lysosome

Q.42 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 2 1 6 8 3 9 5 2 7 6 3 2 9 9 7 3 9 6 4 6 3 2 6 2 2 0 3 4 7 2 (Right)

How many such even digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an odd digit?

- Ans**
- ☒ 1. 5
 - ☒ 2. 4
 - ☒ 3. 2
 - ☒ 4. 3

Q.43 $\text{CaO(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2\text{(aq)} + \text{Heat}$, this reaction is called:

- Ans**
- ☒ 1. decomposition reaction
 - ☒ 2. combination reaction
 - ☒ 3. Wurtz fittig reaction
 - ☒ 4. Wurtz reaction

Q.44 In a certain code language, 'BEAM' is coded as '9483' and 'DAME' is coded as '9683'. What is the code for 'B' in the given code language?

- Ans**
- ☒ 1. 4
 - ☒ 2. 8
 - ☒ 3. 9
 - ☒ 4. 3

Q.45 Which of the following colours of light is bent through a minimum angle when passing through a glass prism?

- Ans**
- ☒ 1. Green
 - ☒ 2. Violet
 - ☒ 3. Yellow
 - ☒ 4. Blue

Q.46 When three parallel lines are cut by two transversals and the intercepts made by the first transversal are in the ratio 3 : 5, then the intercepts made by the second transversal are in the ratio _____.

- Ans**
- ☒ 1. 3 : 5
 - ☒ 2. 9 : 25
 - ☒ 3. 3 : 2
 - ☒ 4. 1 : 1

Q.47 If the matrix of bone cells contains calcium and phosphorus compounds, then what do we find in the matrix of cartilage?

- Ans**
- ☒ 1. Proteins and sugars
 - ☒ 2. Proteins and fats
 - ☒ 3. Phosphorus and sugars
 - ☒ 4. Calcium and sugars

Q.48 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd man out is not based on the number of consonants/vowels or their position in the letter cluster)

- Ans**
- ☒ 1. EMS
 - ☒ 2. AHO
 - ☒ 3. HOV
 - ☒ 4. VCJ

Q.49 The simplified value of $\sqrt{1.0816}$ is:

- Ans**
- ☒ 1. 0.904
 - ☒ 2. 1.35
 - ☒ 3. 1.286
 - ☒ 4. 1.04

Q.50 At what rate (in percentage) per annum will ₹1,300 give ₹520 as simple interest in 8 years?

- Ans**
- ☒ 1. 8%
 - ☒ 2. 7%
 - ☒ 3. 4%
 - ☒ 4. 5%

Q.51 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HLG, KOJ, NRM, QUP, ?

- Ans**
- ☒ 1. TXS
 - ☒ 2. XST
 - ☒ 3. XTS
 - ☒ 4. TSX

Q.52 A 70 cm long wire is to be cut into two pieces so that one piece will be $\frac{2}{5}$ of the other. How many centimetres will the shorter piece be?

- Ans**
- ☐ 1. 10 cm
 - ☐ 2. 25 cm
 - ☐ 3. 30 cm
 - ☒ 4. 20 cm

Q.53 By which unit do the successive members of the homogenous series CH_4 , C_2H_6 , and C_3H_8 differ from each other?

- Ans**
- ☐ 1. CH_3
 - ☐ 2. CH
 - ☐ 3. CH_4
 - ☒ 4. CH_2

Q.54 Parbati Baruah was awarded the Padma Shri-2024. For which achievement is she known?

- Ans**
- ☐ 1. Lion conservation
 - ☐ 2. Rhino conservation
 - ☒ 3. First woman mahout
 - ☐ 4. Tiger conservation

Q.55 Two numbers are respectively 30% and 37% less than a third number. What percentage of the first number is the second number?

- Ans**
- ☐ 1. 10%
 - ☐ 2. 80%
 - ☒ 3. 90%
 - ☐ 4. 20%

Q.56 Nayab Singh Saini was appointed the Chief Minister of _____ in October 2024.

- Ans**
- ☐ 1. Himachal Pradesh
 - ☒ 2. Haryana
 - ☐ 3. Jharkhand
 - ☐ 4. Punjab

Q.57 Simplify the given expression.

$$10 + 8 + 6 - 48 \div (4 \times 6)$$

- Ans**
- ☐ 1. -1
 - ☒ 2. 22
 - ☐ 3. 26
 - ☐ 4. 12

Q.58 Seven people, A, B, E, G, P, Q and R, are sitting in a row, facing north. Only two people sit to the left of B. Only three people sit between B and R. P sits second to the right of B. Only two people sit between P and A. G sits at some place to the right of E but at some place to the left of Q. How many people sit to the right of G?

- Ans**
- ☒ 1. Three
 - ☐ 2. Four
 - ☐ 3. One
 - ☐ 4. Two

Q.59 D, E, F, G, L, M and N are sitting around a circular table facing the centre. F sits third to the left of L. N sits second to the left of E. L is an immediate neighbour of both D and N. G is not an immediate neighbour of F. How many people sit between M and N when counted from the right of M?

- Ans**
- ☐ 1. Four
 - ☐ 2. Three
 - ☐ 3. One
 - ☒ 4. Two

Q.60 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

MPL, ORN, QTP, SVR, ?

- Ans**
- ☒ 1. UXT
 - ☐ 2. XTU
 - ☐ 3. UTX
 - ☐ 4. XUT

Q.61 After fertilisation, which of the following develops a tough coat, is gradually converted into a seed and the zygote divides several times to form an embryo within it?

- Ans**
- ☐ 1. Ovary
 - ☐ 2. Gynoecium
 - ☒ 3. Ovule
 - ☐ 4. Pistil

Q.62 Which of the following reactions is an example of double displacement reaction?

- Ans**
- ☐ 1. $\text{Fe(s)} + \text{CuSO}_4 \text{ (aq)} \rightarrow \text{FeSO}_4 \text{ (aq)} + \text{Cu(s)}$
 - ☒ 2. $\text{Na}_2 \text{SO}_4 \text{ (aq)} + \text{BaCl}_2 \text{ (aq)} \rightarrow \text{BaSO}_4 \text{ (s)} + 2\text{NaCl (aq)}$
 - ☐ 3. $\text{Pb(s)} + \text{CuCl}_2 \text{ (aq)} \rightarrow \text{PbCl}_2 \text{ (aq)} + \text{Cu(s)}$
 - ☐ 4. $\text{Zn(s)} + \text{CuSO}_4 \text{ (aq)} \rightarrow \text{ZnSO}_4 \text{ (aq)} + \text{Cu(s)}$

Q.63 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \tan \theta \cos \theta + \sin \theta$ is _____.

- Ans**
- ☐ 1. $\sec^2 \theta$
 - ☒ 2. $2\sin\theta$
 - ☐ 3. -1
 - ☐ 4. 0

Q.64 Ramesh has borrowed an amount of ₹2,00,000 from a bank to start a business. How much simple interest will he pay at a rate of 11% per annum after 2 years?

- Ans**
- ☒ 1. ₹44,000
 - ☐ 2. ₹44,600
 - ☐ 3. ₹45,500
 - ☐ 4. ₹46,000

Q.65 After getting two successive discounts, a shirt with a list price of ₹150 is available at ₹105. If the second discount is 12.5%, then find the first discount.

- Ans**
- ☐ 1. 25%
 - ☒ 2. 20%
 - ☐ 3. 15%
 - ☐ 4. 12%

Q.66 Which of the following banks launched a special debit card for visually impaired customers in October 2024?

- Ans**
- ☐ 1. State Bank of India
 - ☒ 2. Punjab National Bank
 - ☐ 3. HDFC Bank
 - ☐ 4. Canara Bank

Q.67 The cause of being the refractive index(μ) of transparent medium > 1 , is:

- Ans**
- ☒ 1. Speed of light in vacuum $>$ speed of light in transparent medium
 - ☐ 2. Speed of light in vacuum $<$ speed of light in transparent medium
 - ☐ 3. Wavelength of light gets change as it moves from denser to rarer medium
 - ☐ 4. Speed of light in vacuum = speed of light in transparent medium

Q.68 If the cross-sectional area of a conductor is doubled, other factors remaining the same, the resistivity of the conductor will be:

- Ans**
- ☒ 1. same
 - ☐ 2. one fourth
 - ☐ 3. halved
 - ☐ 4. doubled

Q.69 Which of the following statements is correct for a homogeneous mixture of sugar in water?

- Ans**
- ☒ 1. Water is the solvent.
 - ☐ 2. Sugar is the solvent.
 - ☐ 3. Water is the solute.
 - ☐ 4. Both water and sugar are solvents.

Q.70 Evaluate the given expression.

$$5 \times 3 - 12 \div 4 + 8$$

- Ans**
- ☐ 1. 4
 - ☐ 2. 3
 - ☒ 3. 20
 - ☐ 4. 14

Q.71 Swarna runs at a speed of 10 km/h. How long will she take to cover 200 m?

- Ans**
- ☐ 1. 120 seconds
 - ☐ 2. 54 seconds
 - ☐ 3. 90 seconds
 - ☒ 4. 72 seconds

Q.72 Which of the following elements does NOT usually form molecules and is found in its atomic form?

- Ans**
- ☐ 1. Hydrogen
 - ☒ 2. Helium
 - ☐ 3. Nitrogen
 - ☐ 4. Oxygen

Q.73 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some games are boards.

No board is a dice.

No remote is a game.

Conclusions:

(I) No game is a dice.

(II) Some remotes are boards.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☐ 2. Both conclusions (I) and (II) follow.
 - ☒ 3. Neither conclusion (I) nor (II) follows.
 - ☐ 4. Only conclusion (I) follows.

Q.74 A retailer permits a trade discount of 25%, followed by a cash discount of 8%, on an article. The net percentage of discount is:

- Ans**
- ☐ 1. 33%
 - ☐ 2. 34%
 - ☐ 3. 32%
 - ☒ 4. 31%

Q.75 Lavanya got married 10 years ago. Now her age is $1\frac{1}{5}$ times her age at the time of marriage. Her son's present age is one-tenth of her present age. Find her son's present age.

- Ans**
- ☒ 1. 6 years
 - ☐ 2. 5 years
 - ☐ 3. 20 years
 - ☐ 4. 12 years

Q.76 Which of the following scientists proposed the 'Law of Constant Proportions'?

- Ans**
- ☐ 1. JJ Thomson
 - ☒ 2. Joseph Proust
 - ☐ 3. Ernest Rutherford
 - ☐ 4. E Goldstein

Q.77 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 3 5 5 7 1 6 1 8 8 7 6 2 2 5 9 8 1 1 5 3 3 2 8 1 7 9 2 (Right)

How many such even digits are there each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 0
 - ☒ 2. 2
 - ☐ 3. 3
 - ☐ 4. 4

Q.78 Which of the following describes dendrites?

- Ans**
- ☒ 1. Short and branched
 - ☐ 2. Long and branched
 - ☐ 3. Short and unbranched
 - ☐ 4. Long and unbranched

Q.79 In which of the following situations is potential energy being stored?

- Ans**
- ☐ 1. Pushing a vehicle on the plane road
 - ☐ 2. Moving a pencil across a table
 - ☒ 3. Stretching a rubber band
 - ☐ 4. Lighting a matchstick

Q.80 Two numbers are less than a third number by 30% and 37%, respectively. By what percentage is the second number less than the first?

- Ans**
- ☐ 1. 15%
 - ☐ 2. 8%
 - ☐ 3. 12%
 - ☒ 4. 10%

Q.81 On 30th September 2024, Union Minister for Information and Broadcasting Ashwini Vaishnaw announced that the jury had selected veteran film actor _____ as the recipient of the prestigious Dadasaheb Phalke Lifetime Achievement Award for 2022.

- Ans**
- ☐ 1. Rajinikanth
 - ☒ 2. Mithun Chakraborty
 - ☐ 3. Shah Rukh Khan
 - ☐ 4. Asha Bhosle

Q.82 In a certain code language,
'A + B' means 'A is the mother of B',
'A - B' means 'A is the brother of B',
'A x B' means 'A is the wife of B'
and 'A ÷ B' means 'A is the father of B'.
How is H related to L if 'H + J x K ÷ M - L'?

- Ans**
- ☐ 1. Wife's mother
 - ☐ 2. Mother's sister
 - ☒ 3. Mother's mother
 - ☐ 4. Father's mother

Q.83 The centre of curvature of a concave mirror lies _____ the mirror, whereas it lies _____ the mirror for a convex mirror.

- Ans**
- ☐ 1. behind, behind
 - ☐ 2. behind, in front of
 - ☐ 3. in front of, in front of
 - ☒ 4. in front of, behind

Q.84 Which of the following options represents the number of neutrons present in aluminium?

- Ans**
- ☐ 1. 13
 - ☒ 2. 14
 - ☐ 3. 15
 - ☐ 4. 27

Q.85 SDFG is related to YJKM in a certain way based on the English alphabetical order. In the same way, QBZE is related to WHEK. To which of the following options is ITOW related, following the same logic?

- Ans**
- ☒ 1. OZTC
 - ☐ 2. HBCT
 - ☐ 3. RYOM
 - ☐ 4. MJVY

Q.86 Identify the name of an alloy formed when mix of copper and tin (Cu and Sn)?

- Ans**
- ☐ 1. Brass
 - ☐ 2. Solder
 - ☐ 3. Gold
 - ☒ 4. Bronze

Q.87 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

81, 108.6, 136.2, 163.8, ?

- Ans**
- ☐ 1. 198.2
 - ☒ 2. 191.4
 - ☐ 3. 183.6
 - ☐ 4. 174.8

Q.88 The motion of the moon around the earth is due to the:

- Ans**
- ✓ 1. Centripetal force
 - ✗ 2. Coriolis force
 - ✗ 3. Coulomb force
 - ✗ 4. Centrifugal force

Q.89 Select the correct statement related to the characteristics of prokaryotic cell.

- Ans**
- ✗ 1. It has more than one chromosome.
 - ✗ 2. Nuclear region is well defined and surrounded by nuclear membrane.
 - ✓ 3. It has a single chromosome.
 - ✗ 4. Membrane bound cell organelles are present.

Q.90 Gautam starts from Point A and drives 30 km towards South. He then takes a left turn, drives 15 km, turns left and drives 42 km. He then takes a left turn and drives 7 km. He takes a final left turn, drives 12 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ✗ 1. 5 km towards West
 - ✓ 2. 8 km towards West
 - ✗ 3. 10 km towards West
 - ✗ 4. 10 km towards East

Q.91 Which of the following chemical reactions represents the displacement reaction?

- Ans**
- ✗ 1. $2\text{AgCl(s)} \rightarrow 2\text{Ag(s)} + \text{Cl}_2\text{(g)}$
 - ✗ 2. $\text{C(s)} + \text{O}_2\text{(g)} \rightarrow \text{CO}_2\text{(g)}$
 - ✗ 3. $\text{CaO(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2\text{(aq)}$
 - ✓ 4. $\text{Zn(s)} + \text{CuSO}_4\text{(aq)} \rightarrow \text{ZnSO}_4\text{(aq)} + \text{Cu(s)}$

Q.92 What will come in the place of the question mark '?' in the following equation, if '+' and '÷' are interchanged and '×' and '-' are interchanged?

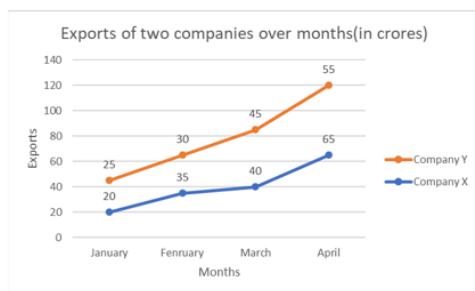
$$11 \div 12 + 4 - 5 \times 6 = ?$$

- Ans**
- ✗ 1. 22
 - ✗ 2. 28
 - ✗ 3. 16
 - ✓ 4. 20

Q.93 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. D sits to the immediate right of E. Only three people sit between E and L. B sits to the immediate right of C. Only three people sit between D and F when counted from the left of D. How many people sit between K and C when counted from the left of C?

- Ans**
- ✗ 1. Four
 - ✗ 2. One
 - ✓ 3. Two
 - ✗ 4. Three

Q.94 Study the following chart and answer the question that follows.



What is the absolute difference between the export by company X in February and export by company Y in April?

- Ans**
- ☐ 1. 10 crore
 - ☒ 2. 20 crore
 - ☐ 3. 5 crores
 - ☐ 4. 15 crore

Q.95 Which of the following after fertilisation grows rapidly and ripens to form a fruit. Meanwhile, the petals, sepals, stamens, style and stigma may shrivel and fall off?

- Ans**
- ☐ 1. Ovule
 - ☒ 2. Ovary
 - ☐ 3. Gynoecium
 - ☐ 4. Pistil

Q.96 In this question, a statement is followed by two courses of actions, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the course of action/s logically follow for pursuing.

Statement – In City X, the number of car accidents has spiked recently due to poor road conditions and lack of adequate signage.

- I. The city should launch an awareness campaign to educate drivers on safe driving practices.
- II. Immediate Road repair and installation of proper signage should be carried out.

- Ans**
- ☐ 1. Only I follows
 - ☐ 2. Neither I nor II follows
 - ☐ 3. Both I and II follow
 - ☒ 4. Only II follows

Q.97 TakeMe2Space (TM2Space), an innovative space technology firm, is based in which city of India?

- Ans**
- ☐ 1. New Delhi
 - ☐ 2. Kolkata
 - ☒ 3. Hyderabad
 - ☐ 4. Chennai

Q.98 Where should the object be placed around the concave mirror to ensure that the size of the image is the same as the size of the object?

- Ans**
- ☐ 1. Between focus F and centre of curvature C
 - ☐ 2. At focus F
 - ☒ 3. At C, centre of curvature
 - ☐ 4. Between focus F and pole P

Q.99 Two pipes C and D can fill a tank in 6 hours and 9 hours, respectively. They are opened alternately for 1 hour each, starting with C first. In what duration, will the tank be filled?

- Ans**
- ☐ 1. 5 hours
 - ☐ 2. 6 hours
 - ☐ 3. 8 hours
 - ☒ 4. 7 hours

Q.100 A student in a lab noted the pH value of a solution to be 10. Which of the following statements is correct about a solution?

- Ans**
- ☐ 1. A solution is basic with a high hydrogen ion concentration.
 - ☐ 2. A solution is acidic with a high hydrogen ion concentration.
 - ☒ 3. A solution is basic with a high hydroxide ion concentration.
 - ☐ 4. A solution is acidic with a high hydroxide ion concentration.

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