



रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD  
सीईएन ०२ /२०२५ - तकनीशियन ग्रेड I सिगनल और तकनीशियन ग्रेड III  
CEN 02/2025 – Technician Grade I Signal and Technician Grade III



Test Date	06/03/2026
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technician Grade III

\* Note

Correct Answer will carry 1 mark per Question.

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

- Options shown in green color with a tick icon are correct.
- Chosen option on the right of the question indicates the option selected by the candidate.

Section : Mathematics

Q.1 Find the highest common factor (HCF) of the two numbers 64 and 148.

- Ans  A. 4  
 B. 2  
 C. 3  
 D. 6

Q.2 In an election with four candidates, 60% of all registered voters voted. Candidate X got 40% of the cast votes. The rest were split equally among the other three candidates. If Candidate X received 480 more votes than each of the others, how many registered voters were there?

- Ans  A. 6200  
 B. 4000  
 C. 5600  
 D. 4800

Q.3 A dealer buys two articles X and Y for ₹2,000 each. He marks each of them at the same price. He sells X by giving two successive discounts of 28% and 90% and still earns ₹322 as profit. If he sells Y at a single discount of 88%, then what is the profit percentage on Y?

- Ans  A. 92.5%  
 B. 93%  
 C. 93.5%  
 D. 92%

Q.4 A garden walkway is to be paved with 2,500 rhombus-shaped stone slabs, each having diagonals of 50 cm and 35 cm. What is the total cost of polishing the walkway if the rate is ₹5 per square meter. Also, if an additional 6.25 m<sup>2</sup> of area is added so that the walkway becomes a square-shaped courtyard, what will be the side of this square courtyard?

- Ans  A. ₹1093.75, 15 meters  
 B. ₹1319.45, 19 meters  
 C. ₹1109.25, 16 meters  
 D. ₹1222.15, 17 meters

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Q.5 If the mean of a distribution is 78 and the median is 61, then the value of mode is:

- Ans  A. 27  
 B. 50  
 C. 45  
 D. 31.5

Q.6 Simplify:

$$\{[(96 \div (4 \times 4)) + (36 \div (9 \times 3))]\} + \{(14 \times 2 \div 4) + (18 \div (3 \times 3))\}$$

- Ans  A.  $\frac{59}{3}$   
 B.  $\frac{39}{3}$   
 C.  $\frac{69}{3}$   
 D.  $\frac{49}{3}$

Q.7 When one-third of a number is increased by 55, the result is 77. Find the sum of the digits of the original number.

- Ans  A. 13  
 B. 10  
 C. 12  
 D. 15

Q.8 The volume of a cylinder having diameter 20 cm and height 42 cm is:

(Take  $\pi = \frac{22}{7}$ )

- Ans  A. 13196 cm<sup>3</sup>  
 B. 13200 cm<sup>3</sup>  
 C. 13202 cm<sup>3</sup>  
 D. 13210 cm<sup>3</sup>

Q.9 Smita borrowed ₹14,750 from her friend at a simple interest rate of 8% per annum. She repaid the amount after 6 months. How much did she pay in total?

- Ans  A. ₹ 15355  
 B. ₹ 15375  
 C. ₹ 15390  
 D. ₹ 15340

Q.10 The prices of articles of type P, Q and R are ₹280, ₹180 and ₹105, respectively. Govind buys articles of the three types in the ratio 3 : 4 : 7 for a total of ₹6,885. How many articles of type Q did he purchase?

- Ans  A. 9  
 B. 20  
 C. 18  
 D. 12

Q.11 Varun buys mangoes at the rate of 3 kg for ₹15 and sells them at 5 kg for ₹50. To earn ₹125 as profit, what quantity of mangoes (in kg) must he sell?

- Ans  A. 25  
 B. 28  
 C. 27  
 D. 26

Q.12 The average of three numbers is 20. If two numbers are 11 and 21, respectively, then the third number is:

- Ans
- A. 30
  - B. 29
  - C. 28
  - D. 27

Q.13 Five years ago from now, the sum of the ages of John and his sister Jane was 25 years. If John is now twice as old as he was ten years ago, find the difference between their present ages (in years).

- Ans
- A. 5
  - B. 6
  - C. 8
  - D. 7

Q.14 Simplify:

$$\frac{1}{2} \text{ of } \left( \frac{1}{2} \div \frac{1}{2} \text{ of } \frac{1}{2} + \frac{1}{2} \right) - \frac{1}{2}$$

- Ans
- A. 0.75
  - B. 0.5
  - C. 0.25
  - D. 1

Q.15 The number of tourists visiting a fort rose by 30% in summer and then dropped by 35% in monsoon. What is the overall percentage change?

- Ans
- A. 12.5% decrease
  - B. 15.5% increase
  - C. 15.5% decrease
  - D. 12.5% increase

Q.16 Simplify  $(2pq + 11q)^2 - (2pq - 11q)^2$ .

- Ans
- A.  $44pq^2$
  - B.  $44p^2q^2$
  - C.  $88pq^2$
  - D.  $88p^2q$

Q.17 If a regular polygon has an interior angle of  $156^\circ$ , then find the sum of its 7 exterior angles.

- Ans
- A.  $156^\circ$
  - B.  $165^\circ$
  - C.  $168^\circ$
  - D.  $172^\circ$

Q.18 Simplify:  $\frac{2^{n+3} - 2 \times 2^n}{2 \times 2^{n+2}}$

- Ans
- A.  $\frac{3}{2}$
  - B.  $\frac{3}{8}$
  - C.  $\frac{2}{3}$
  - D.  $\frac{3}{4}$

Q.19 A train 240 meters long crosses a bridge 420 meters long in 22 seconds. What is the speed of the train in km/h?

- Ans
- A. 104 km/h
  - B. 112 km/h
  - C. 116 km/h
  - D. 108 km/h

Q.20 What sum of money (in ₹) will yield ₹700 as simple interest in 2 years at 10% per annum?

- Ans
- A. 3900
  - B. 3000
  - C. 3500
  - D. 3700

Q.21 A can do a certain work at the same time in which B and C together can do it. If A and B together could do it in 6 days and C alone in 42 days, then B alone could do it in \_\_\_\_\_ days.

- Ans
- A. 28
  - B. 14
  - C. 42
  - D. 56

Q.22 If  $\frac{(\sin^2\theta - 3\sin\theta + 2)}{\cos^2\theta} = 1$ , where  $0^\circ < \theta < 90^\circ$ , then the value of  $\left(\cot\frac{3}{2}\theta + \sin 3\theta\right)$  is:

- Ans
- A. -1
  - B. 1
  - C. 2
  - D. 0

Q.23 Find the number of pairs of coprime numbers between 11 and 19 (both inclusive).

- Ans
- A. 26
  - B. 30
  - C. 28
  - D. 29

Q.24 If  $a : b = c : x$ , then find x when  $a = 12$ ,  $b = 18$ , and  $c = 27$ .

- Ans
- A. 45.5
  - B. 40.5
  - C. 43.5
  - D. 42.5

**Q.25** A can complete the work in 16 days and B can complete it in 24 days. They work together for 5 days, then A leaves. How many more days will B take to complete the remaining work?

- Ans**
- A. 10.5 days
  - B. 11.5 days
  - C. 13.5 days
  - D. 12.5 days

Section : General Intelligence and Reasoning

**Q.26** In a certain code language,  
 A @ B means 'A is the brother of B',  
 A x B means 'A is the daughter of B',  
 A o B means 'A is the father of B', and  
 A ≥ B means 'A is the wife of B'.  
 Based on the above, how is Z related to N if 'Z o C ≥ L @ M x N'?

- Ans**
- A. Wife's brother
  - B. Mother's father
  - C. Son's wife's father
  - D. Father's mother

**Q.27** In a certain code language, 'take my share' is coded as 'tn dp bk' and 'share or perish' is coded as 'ps tn hv'. How is 'share' coded in the given language? (All the codes are two-letter codes only.)

- Ans**
- A. bk
  - B. hv
  - C. tn
  - D. dp

**Q.28** Select the pair which follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.

WRT : VPQ  
 GUA : FSX

- Ans**
- A. FOY : EMW
  - B. OVQ : LTO
  - C. SBL : RZM
  - D. NXR : MVO

**Q.29** Suraj is the brother of Ganesh. Ganesh is the father of Harshita. Harshita is the sister of Vidhi. Vidhi is the wife of Bheem. How is Suraj related to Bheem?

- Ans**
- A. Wife's mother's father
  - B. Wife's father's father
  - C. Wife's father's brother
  - D. Wife's mother's brother

**Q.30** Refer to the following letter series and answer the question that follows.  
 (Left) L F Q T G P S C I O E R Y B M J X D K N H (Right)  
 How many letters are there in the English alphabetical series between the letter that is fifth from the left end and third from the right end of the series?

- Ans**
- A. Two
  - B. Three
  - C. Four
  - D. One

**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
- A. UHG
  - B. EJH
  - C. PUS
  - D. QVT

**Q.32** What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and 'x' and '÷' are interchanged?

$$7 \div 2 + 64 \times 8 - 8 = ?$$

- Ans
- A. 18
  - B. 14
  - C. 16
  - D. 12

**Q.33** If 'P' stands for 'x', 'Q' stands for '÷', 'R' stands for '-' and 'S' stands for '+', then what will come in place of the question mark (?) in the following equation?

$$71 \text{ S } 45 \text{ P } 5 \text{ R } 15 \text{ Q } 5 \text{ P } 6 \text{ S } 13 \text{ R } 74 \text{ S } 69 = ?$$

- Ans
- A. 286
  - B. 246
  - C. 311
  - D. 292

**Q.34** Refer to the following letter series and answer the question that follows. Counting to be done from left to right.

(Left) B E X Q K P X I O R G J M Y H M S M O T T (Right)

How many such vowels are there, each of which is immediately preceded by a consonant and also immediately followed by a consonant?

- Ans
- A. Three
  - B. Two
  - C. None
  - D. One

**Q.35** Select the pair which follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.

BYR : ZWP  
HEZ : FCX

- Ans
- A. SIV : QGT
  - B. GWK : DVH
  - C. MAU : LZU
  - D. ZBG : XYD

**Q.36** Six friends B, C, L, M, N and O are sitting around a circular table facing the center of the table. Only three people sit between B and M when counted from the right of B. B sits second to the left of O. L sits second to the left of C. N is an immediate neighbor of both M and O. How many people sit between B and N when counted from the right of B?

- Ans
- A. Three
  - B. Two
  - C. One
  - D. Four

Q.37 Each vowel in the word WAMBLES 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. How many letters will appear exactly twice in the new group of letters thus formed?

- Ans
- A. Two
  - B. Three
  - C. Zero
  - D. One

Q.38 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 is the one that 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
- A. PG – TK
  - B. SJ – WN
  - C. MD – QH
  - D. VL – YO

Q.39 In a certain code language,

A ~ B means 'A is the father of B',  
 A ≠ B means 'A is the daughter of B',  
 A £ B means 'A is the son of B', and  
 A ≤ B means 'A is the sister of B'.

Based on the above, how is W related to T if 'W ≠ X ~ Y ≤ Z £ T'?

- Ans
- A. Daughter
  - B. Wife
  - C. Sister
  - D. Mother

Q.40 CK 34 is related to BL 68 in a certain way. In the same way, HP 42 is related to GQ 84. To which of the following is NV 23 related, following the same logic?

- Ans
- A. OW 46
  - B. MW 48
  - C. OU 44
  - D. MW 46

Q.41 Seven boxes A, B, C, D, E, F and G are kept one over the other but not necessarily in the same order. Exactly five boxes are kept between E and B. D is kept fifth from the bottom. F is kept immediately below A but above E. C is not kept below A. G is kept below B but above D. How many boxes are kept between C and G?

- Ans
- A. Two
  - B. Three
  - C. One
  - D. Four

Q.42 The position(s) of how many letters will remain unchanged if each letter in the word ALTERING is arranged in the English alphabetical order?

- Ans
- A. Three
  - B. One
  - C. Two
  - D. None

Q.43 Mr. Kell ranked 155th from the bottom and 37th from the top in his class. How many students are there in his class?

- Ans
- A. 199
  - B. 197
  - C. 191
  - D. 198

Q.44 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 their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

29, 59  
35, 71

- Ans
- A. 46, 91
  - B. 56, 112
  - C. 41, 83
  - D. 53, 105

Q.45 In a certain code language, 'lamp of wisdom' is coded as 'nh rz vk' and 'light the lamp' is coded as 'rz bw mt'. How is 'lamp' coded in the given language? (All the codes are two-letter codes only.)

- Ans
- A. nh
  - B. mt
  - C. bw
  - D. rz

Q.46 Mr. O starts from Point L and drives 7 km towards the south. He then takes a left turn, drives 2 km, turns right and drives 4 km. He then takes a left turn and drives 6 km. He then takes a left turn and drives 13 km. He takes a final left turn, drives 8 km and stops at Point M. How far (shortest distance) and towards which direction should he drive in order to reach Point L again? (All turns are 90 degrees turns only unless specified.)

- Ans
- A. 4 km towards South
  - B. 2 km towards South
  - C. 7 km towards East
  - D. 7 km towards West

Q.47 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 their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(5, 16, 3)  
(6, 18, 3)

- Ans
- A. (7, 28, 4)
  - B. (4, 13, 2)
  - C. (6, 19, 4)
  - D. (8, 40, 12)

Q.48 What should come in place of ? in the given series based on the English alphabetical order?

MFY UNG CVO KDW ?

- Ans
- A. SEL
  - B. SLO
  - C. SLP
  - D. SLE

Q.49 Aw, Bt, Ck, Dv, Er, Fn and Gy are sitting around a circular table facing the centre. Bt sits second to the right of Aw. Ck sits third to the left of Aw. Er sits to the immediate right of Gy. Dv sits second to the right of Er. What is the position of Fe with respect to Er?

- Ans
- A. Third to the left
  - B. Third to the right
  - C. Immediate right
  - D. Second to the left

Q.50 What should come in place of ? in the given series based on the English alphabetical order?

ZJF OYU DNJ SCY ?

- Ans
- A. HRN
  - B. HRT
  - C. HUY
  - D. HTY

Section : General Science

Q.51 Which of the following explains why most food chains do not exceed four trophic levels?

- Ans
- A. Producers are rare in ecosystems
  - B. Only 10% of energy passes to the next level
  - C. Decomposers consume all organisms at higher levels
  - D. Predators eat only herbivores

Q.52 An unbalanced force of 100 N acts on a body at rest such that it acquires a velocity of 5 m/s in 10 s. How much is the mass of the body?

- Ans
- A. 2 kg
  - B. 200 kg
  - C. 5 kg
  - D. 50 kg

Q.53 Which method involves coating iron with a layer of zinc to protect it from rusting?

- Ans
- A. Galvanisation
  - B. Electroplating
  - C. Tinning
  - D. Painting

Q.54 Choose a term to complete the analogy.

Xylem Parenchyma : Food Storage :: Xylem Fibres : \_\_\_\_\_

- Ans
- A. Transporting minerals
  - B. Supportive function
  - C. Being tubular structures
  - D. Transporting water vertically

**Q.55** Why do cells in a multicellular organism exhibit a wide range of shapes and sizes?

- Ans
- A. Their structure is adapted to perform specific functions.
  - B. Variation in cell shape and size occurs without any functional significance.
  - C. Cell shape is random and unrelated to function.
  - D. Each cell type contains a different genome in the same organism.

**Q.56** When a small piece of sodium metal is added to chlorine gas under controlled conditions, a vigorous reaction occurs producing sodium chloride. Which of the following statements best explains the reason for the stability of the product formed?

- Ans
- A. Sodium donates one electron to chlorine, forming oppositely charged ions held by strong electrostatic forces.
  - B. Both sodium and chlorine attain stability by forming a metallic lattice with delocalized electrons.
  - C. Sodium and chlorine share one electron each, forming a stable covalent bond.
  - D. Sodium gains one electron from chlorine, forming a neutral molecule through mutual sharing.

**Q.57** An object is placed at infinity in front of a concave lens. The image formed will be \_\_\_\_\_.

- Ans
- A. Real, erect, and at the principal focus
  - B. Virtual, erect, and highly diminished at the focus
  - C. Virtual, erect, and enlarged
  - D. Real, inverted, and at infinity

**Q.58** Which of the following correctly represents the changes that occur in the floral parts after fertilisation?

- Ans
- A. The stigma and ovary both develop into fruits
  - B. All floral parts persist and develop into fruits
  - C. The ovary develops into a fruit while the ovule becomes a seed
  - D. The ovule develops into a fruit and the ovary becomes a seed

**Q.59** If an object is placed between  $F_1$  and  $2F_1$  of a convex lens, the image produced is \_\_\_\_\_. ( $F_1$  is the position of the principal focus.)

- Ans
- A. Enlarged, real, inverted
  - B. Same size, real, inverted
  - C. Diminished, real, inverted
  - D. Enlarged, virtual, erect

**Q.60** Which muscular tissue in animals is responsible for voluntary movements and is attached to bones?

- Ans
- A. Tendon
  - B. Unstriated (smooth) muscle
  - C. Striated (skeletal) muscle
  - D. Cardiac muscle

**Q.61** Which of the following best explains why humans have the highest concentration of harmful chemicals in their bodies?

- Ans
- A. They eat large quantities of contaminated animal products
  - B. They consume more pesticides directly than other organisms
  - C. They are exposed to chemicals through air and water
  - D. They occupy the top trophic level in food chains

Q.62 When observing onion peel and cheek cells under a microscope, which part appears lightly stained and contains many organelles?

- Ans
- A. Nucleus
  - B. Cytoplasm
  - C. Cell membrane only
  - D. Cell wall only

Q.63 Choose a term to complete the analogy.

Skeletal Muscle : Voluntary :: Cardiac Muscle : \_\_\_\_\_

- Ans
- A. Multinucleate
  - B. Involuntary
  - C. Striated
  - D. Unbranched

Q.64 Along with phosphorus and potassium, fertilisers mainly supply which of the following to crops?

- Ans
- A. Zinc only
  - B. Calcium only
  - C. Nitrogen
  - D. Magnesium only

Q.65 Which of the following is NOT a combination reaction?

- Ans
- A.  $2\text{Cu} + \text{O}_2 \xrightarrow{\text{Heat}} 2\text{CuO}$
  - B.  $\text{CuO} + \text{H}_2 \xrightarrow{\text{Heat}} \text{Cu} + \text{H}_2\text{O}$
  - C.  $\text{NH}_3 + \text{HCl} \rightarrow \text{NH}_4\text{Cl}$
  - D.  $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$

Q.66 Two lens of power (+ 4 D) and (- 6 D) are placed in contact with each other. What will be their combined focal length in cm?

- Ans
- A. + 0.5 cm
  - B. - 50 cm
  - C. - 10 cm
  - D. + 0.1 cm

Q.67 Why is weed management important in crop production?

- Ans
- A. Weeds compete with crops for resources.
  - B. Weeds supply nutrients to crops.
  - C. Weeds increase crop yield.
  - D. Weeds have no impact on crops.

Q.68 The kinetic energy of an object of mass  $m$  moving with a velocity of 5 m/s is 25 J. If its velocity is doubled to 10 m/s, what will be its kinetic energy?

- Ans
- A. 50 J
  - B. 100 J
  - C. 125 J
  - D. 200 J

Q.69 At high altitudes such as hill stations, water boils at a temperature lower than  $100^{\circ}\text{C}$ , whereas in a pressure cooker it boils above  $100^{\circ}\text{C}$ . Which of the following statements correctly explains this phenomenon?

- Ans
- A. Boiling point of a liquid increases with an increase in atmospheric pressure and decreases with a decrease in atmospheric pressure.
  - B. Boiling point of a liquid decreases with an increase in atmospheric pressure and increases with a decrease in atmospheric pressure.
  - C. Boiling point of a liquid is independent of external pressure and depends only on temperature.
  - D. Water molecules at high altitude have lower kinetic energy than at sea level, so they boil at a lower temperature.

Q.70 Which of the following statements is **FALSE** about mass number?

- Ans
- A. It represents total nucleons in the atom.
  - B. It is always a whole number.
  - C. It is equal to twice the atomic number for all elements.
  - D. It may differ for isotopes of the same element.

Q.71 Which characteristic defines non-uniform motion?

- Ans
- A. Covering unequal distances in equal intervals of time
  - B. Equal displacement in equal time intervals
  - C. Constant speed
  - D. Zero acceleration

Q.72 Which statement is **INCORRECT** about isobars?

- Ans
- A. Their number of neutrons is different.
  - B. They have the same mass number.
  - C. They have the same number of protons.
  - D. They have different chemical properties.

Q.73 Multiple reflection of sound can be used to \_\_\_\_\_.

- Ans
- A. Hear sounds clearly over long distances
  - B. Reduce loudness
  - C. Increase the frequency of sound
  - D. Change the pitch of sound

Q.74 Read the given statements carefully and select the correct option.

**Statement I:** The phenomenon of change of liquid into vapours at any temperature below its boiling point is called evaporation.

**Statement II:** The rate of evaporation increases with an increase of surface area.

- Ans
- A. Statement I is false but statement II is true.
  - B. Statement I is true but statement II is false.
  - C. Both statements I and II are true.
  - D. Both statements I and II are false.

Q.75 Why is tungsten used almost exclusively for making filaments of electric bulbs?

- Ans
- A. It has low electrical resistance.
  - B. It readily oxidizes at high temperatures.
  - C. It does not allow heat to pass.
  - D. It has a very high melting point.

Q.76 What is the formula unit mass of sodium carbonate ( $\text{Na}_2\text{CO}_3$ )?  
(Atomic masses: Na = 23 u, C = 12 u, O = 16 u)

- Ans
- A. 98 u
  - B. 84 u
  - C. 62 u
  - D. 106 u

Q.77 The gravitational potential energy of an object at a height is the work done to lift it from the ground to that height \_\_\_\_\_.

- Ans
- A. With constant velocity
  - B. Along a curved path
  - C. Against gravity
  - D. In the direction of gravity

Q.78 Which of the following is NOT a correct use or property of sodium hydrogen carbonate,  $\text{NaHCO}_3$ ?

- Ans
- A. It is used in fire extinguishers.
  - B. It is used in baking as a leavening agent.
  - C. It is used as a strong acid.
  - D. It is used in antacids.

Q.79 Which organelle is known as the 'powerhouse of the cell' because it performs aerobic respiration?

- Ans
- A. Lysosome
  - B. Nucleus
  - C. Mitochondria
  - D. Ribosome

Q.80 Which function is mainly performed by complex permanent tissues in plants?

- Ans
- A. Storage of food
  - B. Transport of water and food
  - C. Photosynthesis
  - D. Protection of plant body

Q.81 An object is launched straight upward and reaches a maximum height of 1000 cm. What was the initial velocity of the object? (Take  $g = 9.8 \text{ m/s}^2$ )

- Ans
- A. 6 m/s
  - B. 2 m/s
  - C. 14 m/s
  - D. 10 m/s

Q.82 Unbalanced forces acting on an object always cause \_\_\_\_\_.

- Ans
- A. Increase in mass
  - B. Object to remain at rest
  - C. No change in motion
  - D. Change in motion

**Q.83** When we observe a star near the horizon, it appears to be slightly higher in the sky than it really is. What is the reason for this?

- Ans**
- A. The star moves rapidly and changes its position.
  - B. The star becomes brighter, making it seem higher.
  - C. The Earth's rotation shifts the star upward.
  - D. The atmosphere bends the starlight due to gradual changes in refractive index.

**Q.84** A charged particle moves perpendicular to the axis of a circular current loop. The force on the particle is \_\_\_\_\_.

- Ans**
- A. Maximum at center
  - B. Depends on position and velocity
  - C. Constant everywhere
  - D. Always zero

**Q.85** Which of the following components is absent in lymph but present in blood?

- Ans**
- A. Platelets
  - B. Plasma
  - C. Water
  - D. White blood cells (WBCs)

**Q.86** Select the correct option regarding the given statements.

**Statement 1:** The compound  $\text{CH}_3\text{-CH}_2\text{-CHO}$  is propanone.  
**Statement 2:** Aldehydes are named using the suffix '-al'.

- Ans**
- A. Statement 1 is false but Statement 2 is true.
  - B. Both statements are true but Statement 2 is not the correct explanation of Statement 1.
  - C. Statement 1 is true but Statement 2 is false.
  - D. Both statements are true and Statement 2 is the correct explanation of Statement 1.

**Q.87** Select the correct option regarding the given statements.

**Statement 1:** Metals and non-metals react by sharing electrons.  
**Statement 2:** The bond formed between them is covalent.

- Ans**
- A. Both statements are true.
  - B. Statement 1 is true; Statement 2 is false.
  - C. Statement 1 is false; Statement 2 is true.
  - D. Both statements are false.

**Q.88** The atomic number of oxygen is 8. What does this mean?

- Ans**
- A. Oxygen has 8 protons and 8 electrons
  - B. Oxygen has 8 atoms in each molecule
  - C. Oxygen has 8 neutrons in its nucleus
  - D. Oxygen has 8 protons in its orbit

**Q.89** The effect of thrust on a surface depends on the area on which it acts. Force acting on a smaller area exerts a \_\_\_\_\_ compared to a larger area.

- Ans**
- A. Zero pressure
  - B. Smaller pressure
  - C. Smaller thrust
  - D. Larger pressure

**Q.90** During the formation of coal from plant material, a sequence of chemical and physical changes occurs under high pressure and temperature over millions of years. Which of the following correctly represents the progressive increase in carbon content during the formation of coal?

- Ans**
- A. Peat → Anthracite → Bituminous → Lignite
  - B. Peat → Bituminous → Lignite → Anthracite
  - C. Peat → Lignite → Bituminous → Anthracite
  - D. Lignite → Peat → Anthracite → Bituminous

Section : General Awareness

**Q.91** Indigenous GSAT-7R weighs 4400 kg, making it the heaviest communication satellite launched from which country?

- Ans**
- A. United State of America
  - B. France
  - C. Japan
  - D. India

**Q.92** In which of the following years was the 'Indus Water Treaty' signed between India and Pakistan?

- Ans**
- A. 1960
  - B. 1947
  - C. 1955
  - D. 1963

**Q.93** Which Indian won a bronze medal in the women's individual compound event at the Archery World Cup Final 2025 in Nanjing?

- Ans**
- A. Ankita Bhakat
  - B. Bhajan Kaur
  - C. Jyothi Surekha Vennam
  - D. Deepika Kumari

**Q.94** Which of the following amendments to the Indian Constitution is regarded as a major milestone in the country's taxation system for introducing the Goods and Services Tax (GST)?

- Ans**
- A. 97th Amendment, 2011
  - B. 101st Amendment, 2016
  - C. 100th Amendment, 2015
  - D. 86th Amendment, 2002

**Q.95** Which of the following is the highest peak of the Western Ghats mountain range?

- Ans**
- A. Mullayanagiri, Baba Budan Hills
  - B. Anaimudi, Anamalai Hills
  - C. Mahabaleshwar, Sahyadri plateau region
  - D. Doddabetta, Nilgiri Hills

**Q.96** In India, which of the following is NOT considered as a constitutional body?

- Ans**
- A. National Human Rights Commission
  - B. Election Commission of India
  - C. Union Public Service Commission
  - D. Finance Commission of India

**Q.97** India celebrated Engineers Day on 15 Sep 2025 with the theme “Deep Tech & Engineering Excellence” in memory of whom?

- Ans**
- A. A.P.J. Abdul Kalam
  - B. Jagadish Chandra Bose
  - C. Srinivasa Ramanujan
  - D. Sir M. Visvesvaraya

**Q.98** The Rural Infrastructure Development Fund (RIDF) was established in India in which of the following years?

- Ans**
- A. 2002–03
  - B. 2000–01
  - C. 1993–94
  - D. 1995–96

**Q.99** Which of the following companies has secured a significant contract to indigenously produce the BvS10 Sindhu, an advanced all-terrain armoured vehicle, for the Indian Army?

- Ans**
- A. Mahindra Defence Systems
  - B. Bharat Electronics Ltd. (BEL)
  - C. Hindustan Aeronautics Ltd. (HAL)
  - D. Larsen & Toubro (L&T)

**Q.100** Who among the following is NOT part of the Trinity of Carnatic Music?

- Ans**
- A. Tyagaraja
  - B. Muthuswami Dikshitar
  - C. Shyama Shastri
  - D. Swathi Thirunal