



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 Which of the following act(s) as a site for protein synthesis?

- Ans
- ☒ 1. Ribosomes
 - ☐ 2. Cell membrane
 - ☐ 3. Vacuole
 - ☐ 4. Plastid

Q.2 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 (iii)
 - ☐ 2. Only (i)
 - ☒ 3. Only (i) and (ii)
 - ☐ 4. (i), (ii) and (iii)

Q.3 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. Arjun Maini
 - ☐ 3. Yash Aradhya
 - ☒ 4. Kush Maini

Q.4 Find the value of $2\sec^2 A + 6\operatorname{cosec}^2 A - 2\tan^2 A - 6\cot^2 A$.

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

Q.5

Simplify the following expression:

$$\frac{4.35 \times 4.35 - 2.67 \times 2.67}{1.68}$$

Ans

✓ 1. 7.02

✗ 2. 6.99

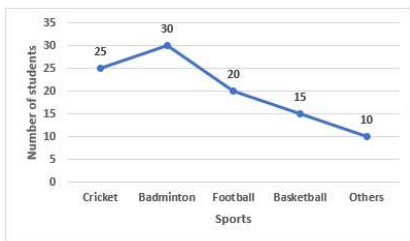
✗ 3. 7.04

✗ 4. 6.96

Q.6

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. 35%

✗ 2. 15%

✗ 3. 45%

✓ 4. 25%

Q.7

In which year were cells first discovered by Robert Hooke?

Ans

✗ 1. 1667

✗ 2. 1670

✓ 3. 1665

✗ 4. 1664

Q.8

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. Neither I nor II are possible effects.

✗ 2. Both I and II are possible effects.

✓ 3. Only I is a possible effect.

✗ 4. Only II is a possible effect.

Q.9 When a white light falls on a glass prism, _____ colour undergoes maximum deviation.

- Ans**
- ☒ 1. Violet
 - ☐ 2. Blue
 - ☐ 3. Yellow
 - ☐ 4. Red

Q.10 What is the term used to describe a solution that cannot dissolve any more solute at a given temperature?

- Ans**
- ☒ 1. Saturated solution
 - ☐ 2. Unsaturated solution
 - ☐ 3. Dilute solution
 - ☐ 4. Heterogeneous solution

Q.11 Which of the following does NOT belong to the category of asexual reproduction?

- Ans**
- ☒ 1. Fertilisation
 - ☐ 2. Regeneration
 - ☐ 3. Vegetative propagation
 - ☐ 4. Spore formation

Q.12 25% of 25% is equal to:

- Ans**
- ☐ 1. 0.00625
 - ☐ 2. 0.625
 - ☐ 3. 6.25
 - ☒ 4. 0.0625

Q.13 When water enters into the guard cells, the guard cells _____ and the stomatal pore _____.

- Ans**
- ☐ 1. shrink; closes
 - ☒ 2. swell; opens
 - ☐ 3. shrink; opens
 - ☐ 4. swell; shrinks

Q.14 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. Protection from acid
 - ☐ 4. Secretion of minerals

Q.15 If the radius of a sphere is increased by 20%, then the new volume will become _____ of the original volume.

- Ans**
- ☒ 1. 172.8%
 - ☐ 2. 20%
 - ☐ 3. 120%
 - ☐ 4. 72.8%

Q.16 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. 25
 - ✗ 2. 12.5
 - ✗ 3. 20
 - ✗ 4. 12

Q.17 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. 84°
 - ✗ 3. 70°
 - ✗ 4. 75°

Q.18 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. GROW - GORW - WORG
 - ✗ 3. ROAD - ORAD - DOAR
 - ✗ 4. FANG - AFNG - ANGF

Q.19 Which of the following statements is true regarding a suspension?

- Ans**
- ✗ 1. Particles cannot be separated by filtration.
 - ✓ 2. Particles settle down after some time.
 - ✗ 3. Particles are smaller than those in a solution.
 - ✗ 4. Particles do not scatter light.

Q.20 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. CrowdStrike
 - ✓ 2. Fortinet
 - ✗ 3. Cisco
 - ✗ 4. Palo Alto Networks

Q.21 If $+$ means $-$, $-$ means \times , \times means \div , 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. 50
 - ✗ 3. 48
 - ✗ 4. 40

Q.22 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. HJF
 - ☐ 2. JLG
 - ☐ 3. FHC
 - ☐ 4. NPK

Q.23 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. 80
 - ☐ 2. 4
 - ☐ 3. 81
 - ☐ 4. 5

Q.24 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. KGMI
 - ☐ 2. GKIM
 - ☐ 3. KGIM
 - ☐ 4. GKMI

Q.25 What type of plant tissue is classified as apical, lateral and intercalary?

- Ans**
- ☒ 1. Meristematic tissue
 - ☐ 2. Complex permanent tissue
 - ☐ 3. Simple permanent tissue
 - ☐ 4. Connective tissue

Q.26 The rate of doing work can be defined as _____.

- Ans**
- ☐ 1. force
 - ☒ 2. power
 - ☐ 3. energy
 - ☐ 4. work

Q.27 Which of the following compounds is used in tincture iodine?

- Ans**
- ☐ 1. Propanol
 - ☐ 2. Ethanoic acid
 - ☒ 3. Ethanol
 - ☐ 4. Methanol

Q.28 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. zero
 - ☐ 4. undetermined

Q.29 What was the theme of the 'GST & Customs Pavilion' inaugurated at the India International Trade Fair (IITF) 2024 in November 2024?

- Ans**
- ☒ 1. Facilitating trade, fostering economy
 - ☐ 2. Supporting trade, facilitating economy
 - ☐ 3. Facilitating trade, strengthening economy
 - ☐ 4. Facilitating economy, fostering trade

Q.30 Which of the following is an example of a unicellular organism?

- Ans**
- ☐ 1. House fly
 - ☐ 2. Lizard
 - ☒ 3. Amoeba
 - ☐ 4. Hydra

Q.31 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.32 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
 - ☐ 2. Son
 - ☐ 3. Father's father
 - ☒ 4. Father's brother

Q.33 Which of the following actions are regulated by the medulla in the hind brain?

- Ans**
- ☐ 1. Walking
 - ☒ 2. Salivation
 - ☐ 3. Maintaining balance and posture
 - ☐ 4. Riding a bicycle

Q.34 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. profit of ₹2,000
 - ☐ 3. loss of ₹1,000
 - ☒ 4. loss of ₹1,100

Q.35 Which organization released the SDG India Index 2023-24, the fourth edition for measuring progress on the Sustainable Development Goals?

- Ans**
- ☐ 1. Indian Statistical Institute
 - ☐ 2. Ministry of Environment
 - ☒ 3. NITI Aayog
 - ☐ 4. Reserve Bank of India (RBI)

Q.36 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 = 92, Y = 88
 - ☒ 2. X = 94, Y = 81
 - ☐ 3. X = 109, Y = 99
 - ☐ 4. X = 102, Y = 95

Q.37 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. 95 years
 - ☐ 2. 85 years
 - ☒ 3. 75 years
 - ☐ 4. 90 years

Q.38 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. 1
 - ☐ 3. 3
 - ☐ 4. 0

Q.39 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. OMR
 - ☒ 3. ORM
 - ☐ 4. ROM


Q.40 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. (7, 27, 54)

 2. (9, 27, 52)

 3. (9, 36, 54)

 4. (9, 27, 54)


Q.41 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)

 2. (i), (ii) and (iii)


 3. Only (i) and (ii)

 4. Only (i) and (iii)

Q.42 If $144 : k :: k : 36$, and $k > 0$, find the value of $k - 1$.

Ans  1. 27


 2. 71


 3. 26

 4. 72

Q.43 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. 150 m

 2. 270 m

 3. 250 m

 4. 300 m

Q.44 Which of the following aircrafts was NOT a part of the Indian Air Force's participation in Exercise Cobra Warrior 2023?

Ans  1. Mirage 2000


 2. IL-78 Mid Air Refueller


 3. F-16 Fighting Falcon


 4. C-17 Globemaster III

Q.45 The compound interest on ₹2,500 after 2 years, at a rate of 6% per annum, compounded annually, will be:

Ans  1. ₹309

 2. ₹320

 3. ₹318

 4. ₹322

Q.46 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. YWT
 - ☒ 2. QOL
 - ☒ 3. MKH
 - ☒ 4. VTR

Q.47 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. 40 J
 - ☒ 3. - 20 J
 - ☒ 4. - 40 J

Q.48 In which state of matter does evaporation occur?

- Ans**
- ☒ 1. Plasma only
 - ☒ 2. Both plasma and liquid
 - ☒ 3. Liquid only
 - ☒ 4. Solid only

Q.49 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$63 + 9 \times 6 \div 13 - 4 = ?$$

- Ans**
- ☒ 1. 53
 - ☒ 2. 55
 - ☒ 3. 51
 - ☒ 4. 48

Q.50 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. 57
 - ☒ 2. 63
 - ☒ 3. 72
 - ☒ 4. 64

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?

MOK, NPL, OQM, PRN, ?

- Ans**
- ☒ 1. SQO
 - ☒ 2. SOQ
 - ☒ 3. QSO
 - ☒ 4. QOS

Q.52 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. ₹425
 - ☐ 2. ₹400
 - ☐ 3. ₹345
 - ☒ 4. ₹365

Q.53 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. At centre of curvature
 - ☒ 2. Infinity
 - ☐ 3. Between pole and focus point
 - ☐ 4. Zero

Q.54 Which of the following substances can act as a source of OH^- ions when dissolved in water?

- Ans**
- ☒ 1. Sodium hydroxide
 - ☐ 2. Nitric acid
 - ☐ 3. Hydrochloric acid
 - ☐ 4. Carbon dioxide

Q.55 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. 1
 - ☐ 2. 3
 - ☐ 3. 2
 - ☐ 4. 0

Q.56 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.57 When hydrochloric acid (HCl) reacts with sodium hydroxide (NaOH), which of the following products is formed?

- Ans**
- ☒ 1. Water and salt
 - ☐ 2. Only salt
 - ☐ 3. Only water
 - ☐ 4. Carbon dioxide and water

Q.58 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. increase by 2
 - ☒ 3. increase by 1.5
 - ☐ 4. remain the same

Q.59 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. 630 m
 - ☐ 2. 1900 m
 - ☐ 3. 175 m
 - ☐ 4. 400 m

Q.60 Cells of the meristematic tissue are very active, but they lack:

- Ans**
- ☐ 1. dense cytoplasm
 - ☐ 2. thin cellulose walls
 - ☐ 3. prominent nuclei
 - ☒ 4. vacuoles

Q.61 Select the INCORRECT statement.

- Ans**
- ☒ 1. Warts are a protozoan disease.
 - ☐ 2. AIDS is caused by the HIV virus.
 - ☐ 3. Many diseases can be sexually transmitted.
 - ☐ 4. Gonorrhea is a bacterial disease.

Q.62 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 (ii)
 - ☐ 2. Both (i) and (iii)
 - ☐ 3. Only (iii)
 - ☐ 4. Both (i) and (ii)

Q.63 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. 8th
 - ☐ 2. 5th
 - ☒ 3. 7th
 - ☐ 4. 6th

Q.64 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. 25%
 - ☐ 2. $33\frac{1}{3}\%$
 - ☒ 3. $16\frac{2}{3}\%$
 - ☐ 4. 20%

Q.65 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. 3
 - ☐ 2. 7
 - ☒ 3. 8
 - ☐ 4. 6

Q.66 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. Lanka Dahan
 - ☒ 3. Raja Harishchandra
 - ☐ 4. Mohini Bhasmasur

Q.67 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. 12 litres
 - ☐ 2. 6 litres
 - ☐ 3. 8 litres
 - ☐ 4. 10 litres

Q.68 The LCM of the numbers 36, 54, 72 and 96 is:

- Ans**
- ☐ 1. 1064
 - ☒ 2. 864
 - ☐ 3. 964
 - ☐ 4. 764

Q.69 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.70 Which team won the Khelo India Winter Games 2024 title, winning ten gold, five silver and six bronze?

- Ans**
- ☐ 1. Karnataka
 - ☐ 2. Ladakh
 - ☐ 3. Maharashtra
 - ☒ 4. The Indian Army

Q.71 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 East
 - ☐ 2. 1 km North
 - ☒ 3. 1 km West
 - ☐ 4. 1 km South

Q.72 Which of the following is NOT an example of oxidation reaction?

- Ans**
- ☐ 1. Rancidity of oils
 - ☐ 2. Formation of magnesium oxide from magnesium
 - ☐ 3. Corrosion
 - ☒ 4. Formation of zinc from zinc oxide

Q.73 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. 52
 - ☐ 2. 48
 - ☒ 3. 217
 - ☐ 4. 146

Q.74 Which of the following is a suspension?

- Ans**
- ☒ 1. Solids dispersed in liquids
 - ☐ 2. Gases dispersed in liquids
 - ☐ 3. Solids dispersed in solids
 - ☐ 4. Gases dispersed in solids

Q.75 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. Y
 - ☒ 2. Z
 - ☐ 3. X
 - ☐ 4. L

Q.76 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 5 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.77 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. 110
 - ☐ 4. 134

Q.78 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. aj
 - ☐ 3. tm
 - ☒ 4. gm

Q.79 Which of the following statements is correct about soaps and detergents?

- Ans**
- ☐ 1. Hydrophobic interacts with water molecules.
 - ☒ 2. Soaps molecules have two ends – one is hydrophilic and the other end is hydrophobic.
 - ☐ 3. Hydrophilic ends interact with hydrocarbons.
 - ☐ 4. Soap molecules have no ends.

Q.80 A positive and negative sign in the magnification indicates that the images are:

- Ans**
- ☐ 1. real and virtual, respectively
 - ☐ 2. both real in nature
 - ☒ 3. virtual and real, respectively
 - ☐ 4. both virtual in nature

Q.81 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.82 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. P
 - ☒ 2. A
 - ☐ 3. Q
 - ☐ 4. E

Q.83 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. 18 N
 - ☐ 2. 12 N
 - ☐ 3. 3 N
 - ☐ 4. 24 N

Q.84 How many seats did the Bharatiya Janata Party win in Lok Sabha election 2024?

- Ans**
- ☐ 1. 37
 - ☐ 2. 140
 - ☐ 3. 99
 - ☒ 4. 240

Q.85 After the process of fertilisation which part of the flower undergoes transformation to develop into a seed?

- Ans**
- ☐ 1. Style
 - ☐ 2. Ovary
 - ☒ 3. Ovule
 - ☐ 4. Stigma

Q.86 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. fission
 - ☐ 2. spore formation
 - ☐ 3. budding
 - ☒ 4. regeneration

Q.87 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. $4\ \Omega$
 - ☐ 2. $8\ \Omega$
 - ☒ 3. $2\ \Omega$
 - ☐ 4. $\frac{1}{2}\ \Omega$

Q.88 The LCM of the numbers 2.5 and 0.175 is:

- Ans**
- ☐ 1. 1.75
 - ☐ 2. 0.0175
 - ☐ 3. 175
 - ☒ 4. 17.5

Q.89 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. $57\frac{2}{9}$ km/h
 - ☒ 3. $55\frac{5}{9}$ km/h
 - ☐ 4. $56\frac{8}{9}$ km/h

Q.90 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. 15%
 - ☒ 2. 10%
 - ☐ 3. 20%
 - ☐ 4. 25%

Q.91 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. 221.76 sq cm
 - ☐ 4. 196.96 sq cm

Q.92 Which of the following ion concentrations is measured by the pH scale?

- Ans**
- ☐ 1. F⁻ ion concentration
 - ☐ 2. Cl⁻ ion concentration
 - ☒ 3. H⁺ ion concentration
 - ☐ 4. Na⁺ ion concentration

Q.93 If a 4-digit number 5k21 is divisible by 9, then the value of digit 'k' is:

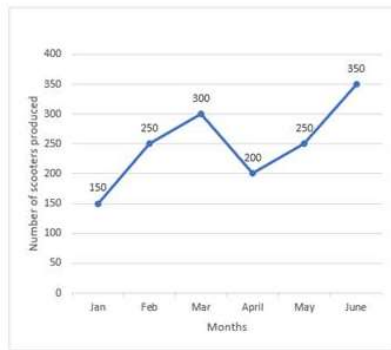
- Ans**
- ☐ 1. 3
 - ☐ 2. 9
 - ☐ 3. 0
 - ☒ 4. 1

Q.94 Which of the following metals is LEAST reactive towards dilute hydrochloric acid?

- Ans**
- ☒ 1. Fe
 - ☐ 2. Mg
 - ☐ 3. Al
 - ☐ 4. Zn

Q.95 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. 250
 - ☒ 2. 200
 - ☒ 3. 100
 - ☒ 4. 150

Q.96 Which of the following is a Pythagorean triplet?

- Ans**
- ☒ 1. (2, 3, 5)
 - ☒ 2. (6, 9, 11)
 - ☒ 3. (8, 15, 17)
 - ☒ 4. (5, 7, 9)

Q.97 Which of the following statements related to the law of conservation of energy is true?

- Ans**
- ☒ 1. The total energy before and after a transformation process are different.
 - ☒ 2. Energy cannot be converted from one form to another.
 - ☒ 3. Energy can be created or destroyed.
 - ☒ 4.

The law of conservation of energy is valid in all situations and for all kinds of transformations.

Q.98 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. Only conclusion (II) follows.
 - ☒ 2. Neither conclusion (I) nor (II) follows.
 - ☒ 3. Both conclusions (I) and (II) follow.
 - ☒ 4. Only conclusion (I) follows.

Q.99 What is the nature of the magnetic field inside a current-carrying solenoid?

- Ans**
- ☐ 1. Strong non-uniform magnetic field
 - ☒ 2. Strong uniform magnetic field
 - ☐ 3. Weak uniform magnetic field
 - ☐ 4. Weak non-uniform magnetic field

Q.100 अश और तन्वी एक काम को क्रमशः 24 दिन और 40 दिन में कर सकते हैं। उन्होंने काम शुरू किया और 8 दिनों के बाद, शुभम उनके साथ शामिल हो गया, जो उसी काम को अकेले 20 दिनों में पूरा कर सकता है। उन्हें संपूर्ण काम पूरा करने में कितने दिन लगेंगे?

- Ans**
- ☐ 1. 15 दिन
 - ☒ 2. 12 दिन
 - ☐ 3. 16 दिन
 - ☐ 4. 20 दिन