



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. Gonorrhoea 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

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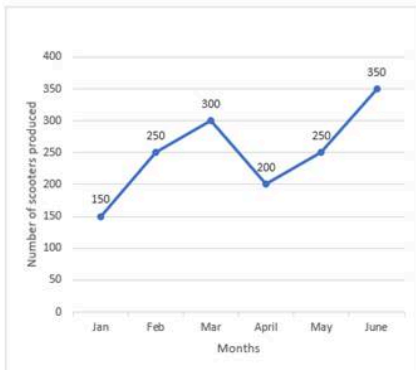
Q.5 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(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 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.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 -, - means \times , \times 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?

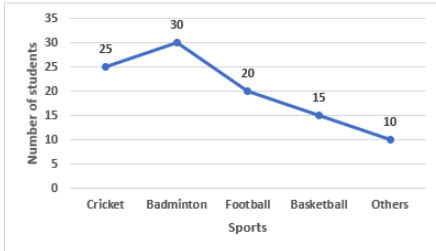
- Ans
- 1. Formation of zinc from zinc oxide
 - 2. Corrosion
 - 3. Formation of magnesium oxide from magnesium
 - 4. Rancidity of oils

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. 4Ω
 - 2. $\frac{1}{2} \Omega$
 - 3. 8Ω
 - 4. 2Ω

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) S 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

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 $2.02 \times 10^{20} N$, then the magnitude of the force exerted by the moon on the earth is _____.

Ans

- 1. $4.04 \times 10^{20} N$
- 2. $2.02 \times 10^{20} N$
- 3. $6.06 \times 10^{20} N$
- 4. $1.01 \times 10^{20} N$

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?

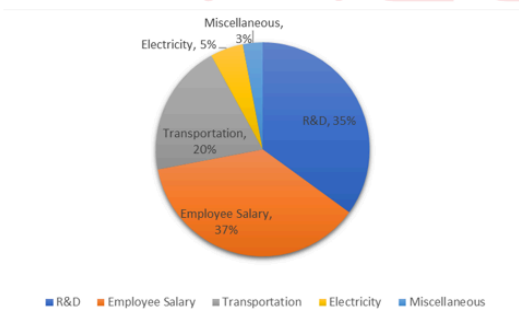
- Ans**
- 1. 2
 - 2. 1
 - 3. 9
 - 4. 8

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 Paramecium 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
 - 4. Prayagraj

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 mouses are keyboards.

Conclusions:

(I) Some screens are keyboards.

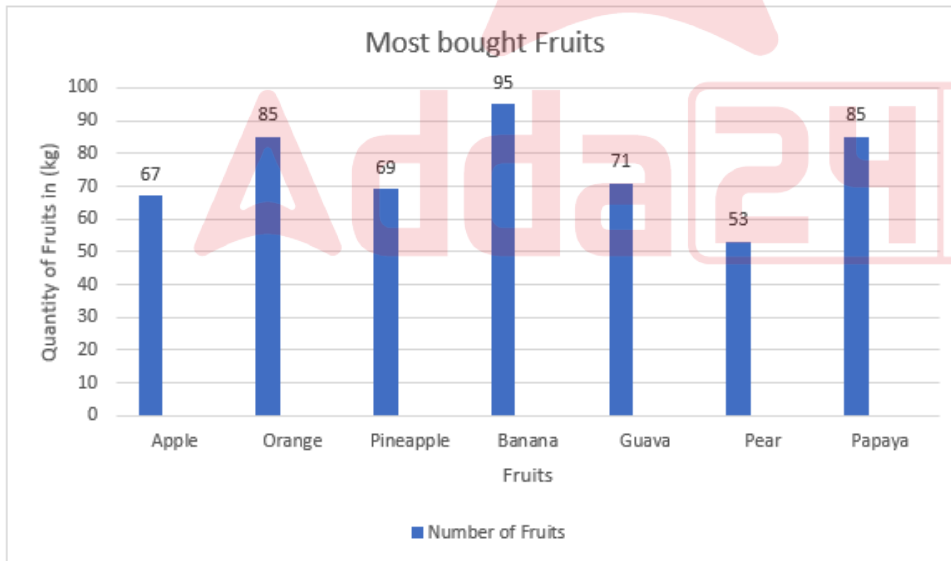
(II) No screen is a keyboard.

- 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?

$$44 A 4 C 12 B 2 D 1 = ?$$

- 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 5 7 8 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?

$$\text{NaCl(aq)} + \text{H}_2\text{O(l)} \rightarrow \text{Products}$$

- 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 $QR = 12 \text{ cm}$, $PR = 10 \text{ cm}$ 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?

$$17 + 13 \times 3 + 12 - 4 = ?$$

- 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

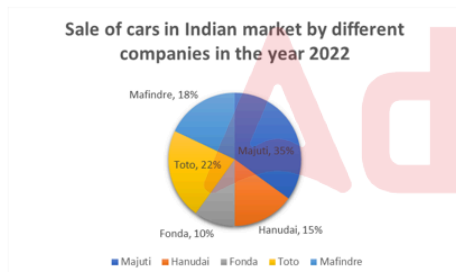
Q.25 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

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?

$$3 + 13 \times 26 + 8 - 4 = ?$$

- 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 S 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%

2024/12/29-11:31:21



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?

$$16 + 96 \times 6 - 4 + 20 = ?$$

- 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 Nayar 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 S 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



सत्यमेव जयते

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.

- 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 : 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?

$$24 \times 6 + 3 - 11 + 13 = ?$$

- 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 RMLQ 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.

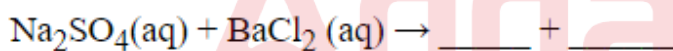
Q.13 Find the magnitude of applied force on a box of mass 10 kg for 20 s. It increases the box's velocity from 5 m s^{-1} to 15 m s^{-1} .

- 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 \times , \times means \div , \div means $+$, and \div 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. Ca(OH)_2
 - 2. Mg(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



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.

- 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 : 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?

$$27 + 14 \times 21 + 3 - 4 = ?$$

- 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

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 5 7 & 3 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

2024/12/30-09:29:07





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:

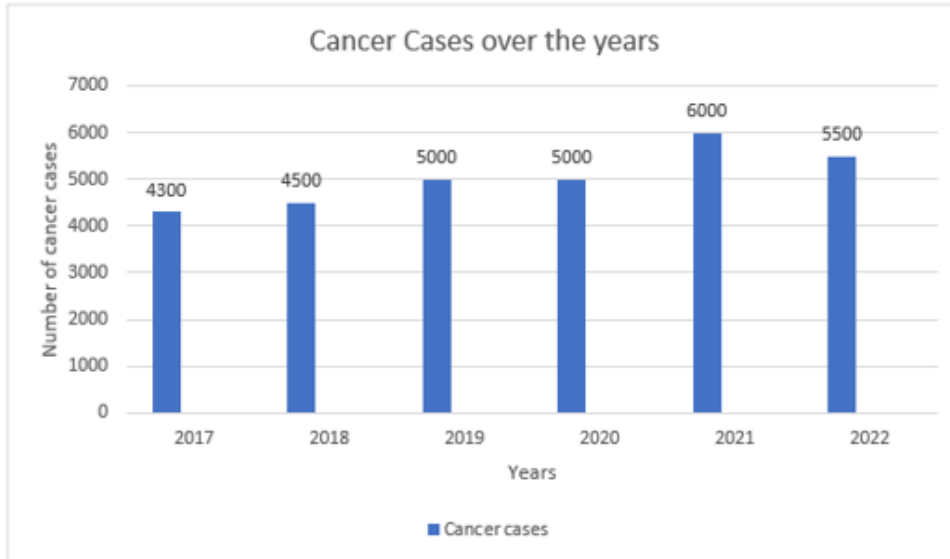
- Ans**
- 1. 4G
 - 2. G/2
 - 3. G
 - 4. Zero

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 S # 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.

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 ΔABC , $BD \perp AC$ 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



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

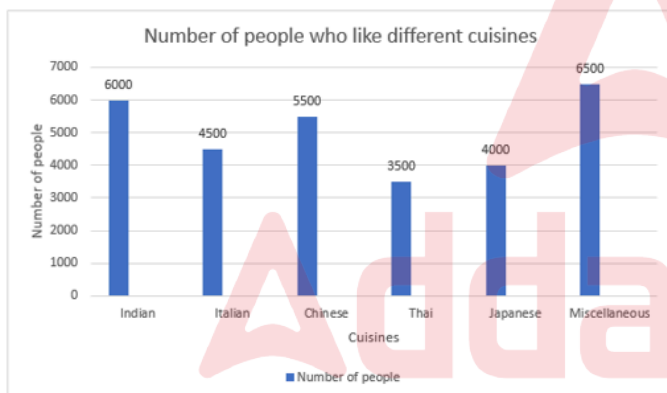
Q.6 What will happen if you pour some acetone on your palm?

- 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 4Ω 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?

$$16 C 24 A 3 B 8 D 5 = ?$$

- 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

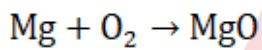
Q.6 Which Indian legendary sportsperson became the first Asian man to be inducted into the Tennis Hall of Fame?

- Ans
- 1. Ramanathan Krishnan
 - 2. Rohan Bopanna
 - 3. Leander Paes
 - 4. Mahesh Bhupati

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?

$2 \text{ B } 18 \text{ D } 20 \text{ A } 4 \text{ C } 15 = ?$

- 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.)

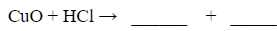
X : 114 :: 26 : Y

- 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. IQW
 - 4. QNT

Q.40 XVYU 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 S 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



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। বিবৃতি 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. জীবশক্তি 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 মনজিতের ₹2,000 খরচ হয়েছিল। কারখানা থেকে পণ্যটিকে শোরুম পর্যন্ত পরিবহনের জন্য তাকে উৎপাদন খরচের 10% ব্যয় 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 ফীত 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. $I = Q t$
 - 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?

$$22 B 5 D 12 A 4 C 6 = ?$$

- 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 $\text{Ca}(\text{OH})_2$ 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

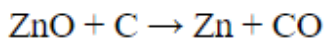
Q.60 Which organisation conducted the study on background radiation levels in Kerala?

- 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

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

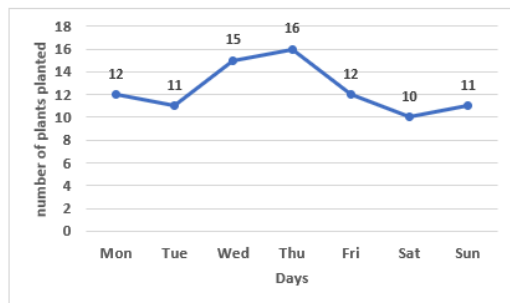
Q.85 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(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

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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 \times , D means \div , then what will come in place of the question mark (?) in the following equation?

$$21 D 3 B 4 C 5 A 22 = ?$$

- 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. $\text{Na}_2\text{SO}_4(\text{aq}) + \text{BaCl}_2(\text{aq}) \rightarrow \text{BaSO}_4(\text{s}) + 2\text{NaCl}(\text{aq})$
 - 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. $2\text{AgCl}(s) \rightarrow 2\text{Ag}(s) + \text{Cl}_2(g)$
 - ✗ 2. $\text{C}(s) + \text{O}_2(g) \rightarrow \text{CO}_2(g)$
 - ✗ 3. $\text{CaO}(s) + \text{H}_2\text{O}(l) \rightarrow \text{Ca}(\text{OH})_2(aq)$
 - ✓ 4. $\text{Zn}(s) + \text{CuSO}_4(aq) \rightarrow \text{ZnSO}_4(aq) + \text{Cu}(s)$

Q.92 What will come in the place of the question mark '?' in the following equation, if '+' and '×' are interchanged and '-' and '÷' are interchanged?

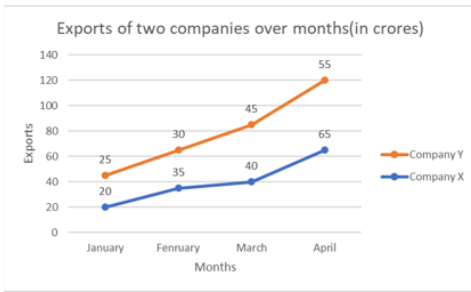
$$11 \div 12 + 4 - 5 \times 6 = ?$$

- 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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