Download RRB JUNIOR ENGINEER Exam Study Notes

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सी ई एन आर आर बी - ०३/२०२४ - CEN RRB - 03/2024

Test Date	18/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB JE DMS CMA CS MS

*** 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 JE, DMS, CMA, CS, MS CBT-1**

Q.1	**Write the expanded form of $(6a + 2b + 7c)^2$.**
Ans	✗ 1. $36a^2 + 4b^2 + 49c^2 + 28ab + 28bc + 84ac$
	✗ 2. $36a^2 + 4b^2 + 49c^2 + 24ab + 28bc + 94ac$
	✗ 3. $36a^2 + 4b^2 + 49c^2 + 24ab + 23bc + 84ac$
	✓ 4. $36a^2 + 4b^2 + 49c^2 + 24ab + 28bc + 84ac$

Q.2	**What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?** **34 ÷ 33 × 22 + 19 − 40 = ?**
Ans	✗ 1. 74
	✓ 2. 72
	✗ 3. 73
	✗ 4. 70

Q.3	**Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting /multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)** **19-57-114-134; 21-63-126-146**
Ans	✗ 1. 18-54-108-118
	✗ 2. 17-51-102-112
	✗ 3. 20-60-120-180
	✓ 4. 16-48-96-116

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Q.4	Tapan starts from Point A and drives 8 km towards the south. He then takes a right turn, drives 5 km, turns right and drives 12 km. He then takes a right turn and drives 9 km. He takes a final right turn, drives 4 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° turns only unless specified.)
Ans	✔ 1. 4 km to the west
	✘ 2. 7 km to the west
	✘ 3. 5 km to the west
	✘ 4. 6 km to the west

Q.5	Which of the following statements is/are correct? 1) Nari Shakti Vandan Adhiniyam was introduced in 2023. 2) Nari Shakti Vandan Adhiniyam ensures 33% reserved seats for women in the Parliament, Legislative Assemblies and Delhi Assembly. 3) Nari Shakti Vandan Adhiniyam will be in force for 10 years only.
Ans	✘ 1. 1 only
	✘ 2. 1 and 3
	✔ 3. 2 and 3
	✘ 4. 1 and 2

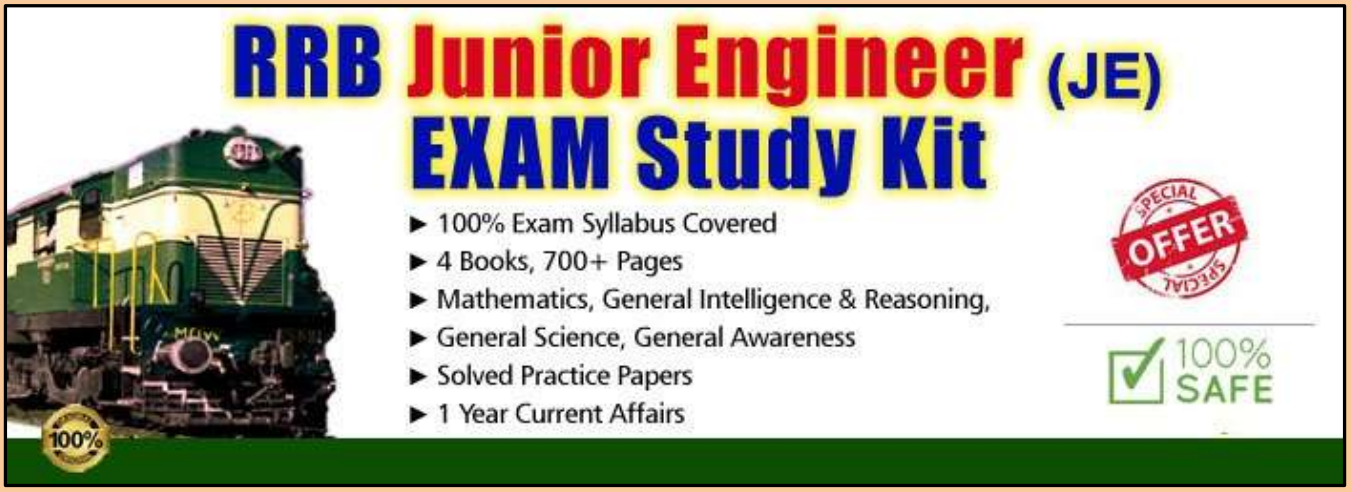
Q.6	Which synthetic chemicals are responsible for the depletion of ozone in the atmosphere?
Ans	✔ 1. Chlorofluorocarbons (CFCs)
	✘ 2. Methane
	✘ 3. Carbon dioxide
	✘ 4. Nitrogen oxides

Q.7	In the reaction $CuO+H_2 \rightarrow Cu+H_2O$, the substance reduced is:
Ans	✔ 1. CuO
	✘ 2. H_2O
	✘ 3. H_2
	✘ 4. Cu

Q.8	What is the median of the following data? 78, 33, 59, 56, 61, 36, 48, 42, 97, 57, 62
Ans	✘ 1. 56.5
	✘ 2. 58
	✔ 3. 57
	✘ 4. 57.5

Q.9	Which of the following can be minimised through the implementation of proper sewage treatment?
Ans	✘ 1. Air pollution
	✘ 2. Noise pollution
	✘ 3. Soil pollution
	✔ 4. Water pollution

Q.10	Two numbers are in the ratio 5 : 8. If the first number is increased by 13 and the second number is decreased by 6, then the ratio becomes 4 : 6. What is the sum of the original two numbers?
Ans	✘ 1. 650
	✘ 2. 681
	✘ [illegible]
	✔ [illegible]



RRB J.E.

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Q.11	Who was appointed as the new head coach of the junior men's hockey team in August 2024?
Ans	✗ 1. Shankar Lakshman
	✗ 2. Harmanpreet Singh
	✗ 3. Prithipal Singh
	✓ 4. PR Sreejesh

Q.12	The curved surface area of a cone is 5544 cm^2, and the diameter is 168 cm. What is its total surface area (in cm^2)? (Use $\pi = \frac{22}{7}$)
Ans	✗ 1. 27,270
	✓ 2. 27,720
	✗ 3. 25,530
	✗ 4. 23,550

Q.13	With which of the following pricing approaches is a product's price equal to its marginal cost?
Ans	✗ 1. Mark-up pricing
	✗ 2. Factor pricing
	✓ 3. Marginal cost pricing
	✗ 4. Price discrimination

Q.14	Write the expanded form of $(5a + 4b + 9c)^2$.
Ans	✗ 1. $25a^2 + 16b^2 + 81c^2 + 44ab + 72bc + 90ac$
	✓ 2. $25a^2 + 16b^2 + 81c^2 + 40ab + 72bc + 90ac$
	✗ 3. $25a^2 + 16b^2 + 81c^2 + 40ab + 72bc + 100ac$
	✗ 4. $25a^2 + 16b^2 + 81c^2 + 40ab + 67bc + 90ac$

Q.15	In which year did the amount of ozone begin to drop sharply in the atmosphere?
Ans	✗ 1. 1970
	✓ 2. 1980
	✗ 3. 1960
	✗ 4. 1950

Q.16	When lead nitrate is heated, it decomposes to form lead monoxide (PbO), nitrogen dioxide (NO_2), and oxygen (O_2). The brown gas seen during the reaction is:
Ans	✓ 1. nitrogen dioxide (NO_2)
	✗ 2. lead monoxide (PbO)
	✗ 3. oxygen (O_2)
	✗ 4. nitric oxide (NO)

Q.17	A trader lost 10% by selling a shirt for ₹850. He will gain x%' by selling it for ₹1360, the value of x is:
Ans	✓ 1. 44
	✗ 2. 54
	✗ 3. 59
	✗ 4. 34

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Q.18	If 1 is added to each odd digit and 1 is subtracted from each even digit in the number 8436152, then what will be the difference between the last and the first digits from the left in the number thus formed?
Ans	✗ 1. 4
	✗ 2. 3
	✓ 3. 6
	✗ 4. 5

Q.19	Which of the following can be broken down by biological processes?
Ans	✗ 1. Milk packets
	✗ 2. Aluminium foil
	✓ 3. Vegetable peels
	✗ 4. Plastic bottles

Q.20	Which of the following articles empowers the President to make regulations for the peace, progress and good government of the union territories?
Ans	✗ 1. Article 243
	✗ 2. Article 244
	✓ 3. Article 240
	✗ 4. Article 239

Q.21	What happens to the resistance of most conductors as their temperature increases?
Ans	✓ 1. It increases.
	✗ 2. It remains the same.
	✗ 3. It decreases.
	✗ 4. It becomes zero.

Q.22	Which attribute of a paper cup makes it better than a plastic cup for our environment?
Ans	✗ 1. Disposable
	✗ 2. Not disposable
	✗ 3. Non-biodegradable
	✓ 4. Biodegradable

Q.23	₹5400 were divided among P, Q and R, such that 6 times of P = 3 times of Q = 8 times of R. Find the share of R.
Ans	✗ 1. ₹1235
	✗ 2. ₹947
	✗ 3. ₹1245
	✓ 4. ₹1080

Q.24	By selling an article at $\frac{5}{14}$ of its actual selling price, Hitesh incurs a loss of 20%. If he sells it at 80% of its actual selling price, then the profit percentage is:
Ans	✗ 1. 81.2%
	✗ 2. 80.7%
	✗ 3. 81.9%
	✓ 4. 79.2%

Q.25	Evaluate: 33 ÷ 9 × 3 - 2 × 4
Ans	✓ 1. 3
	✗ 2. 6
	✗ 3. 2
	✗

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Q.26	Which of the following reactions is an example of a precipitation reaction?
Ans	✗ 1. $CaCO_3 \rightarrow CaO + CO_2$
	✗ 2. $HCl + NaOH \rightarrow NaCl + H_2O$
	✗ 3. $2H_2 + O_2 \rightarrow 2H_2O$
	✓ 4. $NaCl + AgNO_3 \rightarrow NaNO_3 + AgCl$

Q.27	The climate of the Thar desert is best described as _____.
Ans	✗ 1. temperate
	✗ 2. tropical rainforest
	✗ 3. humid subtropical
	✓ 4. arid

Q.28	What is the reason for CFC free refrigerators being manufactured for use throughout the world?
Ans	✓ 1. CFC is a synthetic chemical which depletes the ozone layer.
	✗ 2. CFC is cheap for use in refrigerators.
	✗ 3. CFC is tough to handle for the refrigeration industry.
	✗ 4. CFC makes refrigeration a tough process.

Q.29	B is the father of A. C is the brother of A. D is the wife of C and E is the son of D. How is B related to E?
Ans	✓ 1. Father's father
	✗ 2. Father's brother
	✗ 3. Father
	✗ 4. Brother

Q.30	Himani travels a distance of 352 km with speed of 32 km/h and 330 km with 30 km/h by her car. Find the average speed (in km/h) of Himani.
Ans	✓ 1. 31
	✗ 2. 39
	✗ 3. 21
	✗ 4. 26

Q.31	Sakshi invested a sum of ₹8900 at 10% per annum compound interest, componded annually. If she received an amount of ₹10769 after n years, the value of n is:
Ans	✓ 1. 2
	✗ 2. 2.4
	✗ 3. 1.60000002384186
	✗ 4. 3

Q.32	What would happen to dead plants and animals if decomposers were absent from an ecosystem?
Ans	✗ 1. They would be eaten by consumers.
	✗ 2. They would quickly turn into soil.
	✓ 3. They would persist, and the natural replenishment of soil would be hindered.
	✗ 4. They would become producers.

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Q.33	Seven boxes, E, F, G, H, T, U and V, are kept one over the other, but not necessarily in the same order. Only two boxes are kept below E. Only one box is kept above T. Only one box is kept between T and U. G is kept immediately below F. V is kept at some place below H. How many boxes are kept between H and F?
Ans	✗ 1. Three
	✗ 2. One
	✗ 3. Two
	✓ 4. Four

Q.34	When was the Indian Remote Sensing Satellite System (IRS) established?
Ans	✗ 1. 1972
	✓ 2. 1988
	✗ 3. 1959
	✗ 4. 1983

Q.35	What should come in place of the question mark (?) in the given series? 18 24 34 40 50 ?
Ans	✓ 1. 56
	✗ 2. 57
	✗ 3. 55
	✗ 4. 58

Q.36	Which of the following represents a combination reaction?
Ans	✓ 1. $CaO + H_2O \rightarrow Ca(OH)_2$
	✗ 2. $CaCO_3 \rightarrow CaO + CO_2$
	✗ 3. $2KClO_3 \rightarrow 2KCl + 3O_2$
	✗ 4. $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$

Q.37	Which of the following combinations would produce a precipitate?
Ans	✓ 1. $NaOH + FeCl_3$
	✗ 2. $NaOH + Na_2SO_4$
	✗ 3. NaOH + NaCl
	✗ 4. $NaCl + KNO_3$

Q.38	A question is given, followed by two statements labelled I and II. Identify which of the statements is/are sufficient to answer the question. Five people, A, B, C, D and E, have different weights each. Who is the heaviest? (I) A is heavier than C but lighter than D. (II) B is not the heaviest and E is not the lightest.
Ans	✗ 1. Both Statements I and II put together (and not independently) are sufficient to answer the question.
	✗ 2. Data in Statement II alone is sufficient to answer the question, while data in Statement I is not.
	✗ 3. Data in Statement I alone is sufficient to answer the question, while data in Statement II is not.
	✓ 4. Both Statements I and II put together are not sufficient to answer the question.

Q.39	The average price of three items of furniture is Rs 16455. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is
Ans	✗ 1. 5485
	✗ 2. 3291
	✗ 3. 7679
	✓ 4. 9873

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Q.40	A copper wire has a resistance of 10 Ω. If it is replaced with a wire of the same material and length but twice the cross-sectional area, its resistance will be _____.
Ans	✗ 1. 20 Ω
	✗ 2. 10 Ω
	✓ 3. 5 Ω
	✗ 4. 2.5 Ω

Q.41	In a certain code language,'guns and roses' is coded as 'li mh ca','for the roses' is coded as 'mh bo ph' and'guns for colours' is coded as 'ca bo qu'.What is the code for 'roses' in that language?
Ans	✗ 1. li
	✓ 2. mh
	✗ 3. ca
	✗ 4. bo

Q.42	Why do iron filings arrange themselves in a pattern around a bar magnet?
Ans	✗ 1. Because they are heavy
	✗ 2. Due to gravitational force
	✓ 3. Because of the magnetic field
	✗ 4. Due to electric charge

Q.43	What is the smallest 4-digit number which, when divided by 12, 16, and 20, gives a remainder of 9?
Ans	✓ 1. 1209
	✗ 2. 1217
	✗ 3. 1017
	✗ 4. 1049

Q.44	The first ruler of Delhi Sultanate was:
Ans	✗ 1. Balban
	✓ 2. Qutb-ud-din Aibak
	✗ 3. Alauddin Khalji
	✗ 4. Iltutmish

Q.45	Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ? # : GOK :: HPL : %
Ans	✓ 1. # = EMI, % = JRN
	✗ 2. # = EMI, % = JSN
	✗ 3. # = EMI, % = JRM
	✗ 4. # = EMJ, % = JRN

Q.46	If a substance has a pH of 11, which of the following statements is true?
Ans	✗ 1. It is neutral and does not change the litmus colour.
	✓ 2. It is basic and can turn red litmus paper blue.
	✗ 3. It is acidic and can turn blue litmus paper red.
	✗ 4. It is acidic and does not change the colour of the litmus paper.

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Q.47	What should come in place of the question mark (?) in the given series? 64 61.7 59.4 57.1 ? 52.5
Ans	✔ 1. 54.8
	✘ 2. 53.1
	✘ 3. 55.4
	✘ 4. 56.7

Q.48	A man walks to a viewpoint and returns to the starting point by his car maintaining constant speed and thus takes a total time of 6 hours 45 minutes. He would have gained 2 hours by driving both ways. How long would it have taken for him to walk both ways with same walking speed?
Ans	✘ 1. 8 hours 30 minutes
	✘ 2. 9 hours 15 minutes
	✘ 3. 7 hours 45 minutes
	✔ 4. 8 hours 45 minutes

Q.49	A and B complete a work in 18 days. If A alone can do it in 54 days then, B alone can do in_____(days).
Ans	✘ 1. 29
	✔ 2. 27
	✘ 3. 26
	✘ 4. 28

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 is the one that DOES NOT belong to that group?
Ans	✘ 1. EC – HF
	✘ 2. MK – PN
	✘ 3. IG – LJ
	✔ 4. TR – XV

Q.51	Article 51 A (b) of the Indian Constitution states that it is the duty of the citizens 'to cherish and follow the noble ideals that inspired the _____'.
Ans	✘ 1. customs and traditions of India
	✘ 2. global values and principles
	✔ 3. national struggle for freedom
	✘ 4. political ideas of various parties

Q.52	If $A = 7.5°$, what is the value of $\left(12.8 \times \frac{1}{\sqrt{3}}\cot 4A + 7.2 \tan 6A\right)$?
Ans	✘ 1. 12
	✘ 2. 8
	✔ 3. 20
	✘ 4. 10

Q.53	Write the expanded form of $(9a + 6b + 4c)^2$.
Ans	✘ 1. $81a^2 + 36b^2 + 16c^2 + 108ab + 43bc + 72ac$
	✔ 2. $81a^2 + 36b^2 + 16c^2 + 108ab + 48bc + 72ac$
	✘ 3. $81a^2 + 36b^2 + 16c^2 + 108ab + 48bc + 82ac$
	✘

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Q.54	In which direction does the force act on a conductor placed in a magnetic field in an electric motor?
Ans	✗ 1. Opposite to the magnetic field
	✗ 2. In the direction of the current
	✗ 3. Along the magnetic field
	✓ 4. Perpendicular to both the current and magnetic field

Q.55	The average marks of some students in a class is 75. When five students are included, the average becomes 78 and the marks of those five students are 80, 85, 89, 81 and 82. Find the total number of students.
Ans	✗ 1. 6
	✓ 2. 9
	✗ 3. 8
	✗ 4. 10

Q.56	How many of the following Union territories were created after State Reorganisation Act passed in 1956?
Ans	✗ 1. 7
	✓ 2. 6
	✗ 3. 5
	✗ 4. 4

Q.57	The potential difference versus current plot for a conducting wire is a straight line. The slope of this line gives us the:
Ans	✗ 1. current flowing through the wire
	✓ 2. resistance of the wire
	✗ 3. voltage across the wire
	✗ 4. number of electrons in the wire

Q.58	In ΔPQR and ΔXYZ, PQ = 5 cm, QR = 6 cm, PR = 7 cm, XY = 5 cm, YZ = 6 cm and XZ = 7 cm. Then which of the following is true?
Ans	✗ 1. $\Delta PQR \cong \Delta YXZ$
	✓ 2. $\Delta PQR \cong \Delta XYZ$
	✗ 3. $\Delta QPR \cong \Delta XYZ$
	✗ 4. $\Delta PRQ \cong \Delta XYZ$

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. MQZE
	✗ 2. GKTY
	✓ 3. WAIO
	✗ 4. OSBG

Q.60	A number when increased by 50 %, gives 2850. The number is:
Ans	✗ 1. 950
	✗ 2. 3800
	✗ 3. 5700
	✓ 4. 1900

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Q.61	If three resistors of 6 Ω, 3 Ω and 2 Ω are connected in parallel, the total equivalent resistance is _____.
Ans	✗ 1. 11 Ω
	✗ 2. 0.5 Ω
	✗ 3. 2 Ω
	✓ 4. 1 Ω

Q.62	Refer to the following number, symbol series and answer the question. Counting to be done from left to right only. (Left) 9 8 & & © € % 8 $ 9 8 2 # 5 2 7 7 1 5 £ € % (Right) How many such numbers are there each of which is immediately preceded by a symbol and also immediately followed by a symbol?
Ans	✗ 1. 0
	✗ 2. 3
	✗ 3. 2
	✓ 4. 1

Q.63	According to experimental results, when does the magnitude of the force on a current-carrying conductor in a magnetic field become the highest?
Ans	✓ 1. When the current is perpendicular to the magnetic field
	✗ 2. When the current is opposite to the magnetic field
	✗ 3. When the current is parallel to the magnetic field
	✗ 4. When the current flows at any angle to the magnetic field

Q.64	Who among the following women started the Women's Indian Association in 1917?
Ans	✗ 1. Usha Mehta
	✗ 2. Madam Bhikaji Cama
	✗ 3. Sarojini Naidu
	✓ 4. Annie Besant

Q.65	B, C, E, F and H have different heights. B is taller than C but shorter than H. H is taller than E but shorter than F. E is taller than C but shorter than B. How many people are shorter than B?
Ans	✓ 1. Two
	✗ 2. Four
	✗ 3. One
	✗ 4. Three

Q.66	A shopkeeper sells an item for ₹770.7 after giving two successive discounts of 58% and 80% on its marked price. Had he not given any discount, he would have earned a profit of 25%. What is the cost price (in ₹) of the item?
Ans	✗ 1. 7322
	✗ 2. 7353
	✗ 3. 7315
	✓ 4. 7340

Q.67	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? JCF25, KDG34, LEH43, MFI52, ?
Ans	✗ 1. NGI61
	✗ 2. NGI60
	✗ 3. NGJ60
	✓

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Q.68	**This question is based on the five, three-digit numbers given below. (Left) 473 987 324 529 648 (Right) (Example: 697 – First digit = 6, second digit = 9 and third digit = 7) NOTE: All the operations to be performed from left to right. The position of how many numbers will remain unchanged if all these numbers are arranged in ascending order?**
Ans	✔ 1. None
	✘ 2. One
	✘ 3. Three
	✘ 4. Two

Q.69	**The author of the famous novel 'Midnight's Children' is:**
Ans	✔ 1. Salman Rushdie
	✘ 2. Khushwant Singh
	✘ 3. Shashi Tharoor
	✘ 4. Ruskin Bond

Q.70	$\frac{(a^1 \times b^7 \times c^7)}{(a^1 \times b^2 \times c^{10})}$ in simplified form is:
Ans	✘ 1. $(a^2) \times (b^4) \times (c^{-5})$
	✔ 2. $(a^0) \times (b^5) \times (c^{-3})$
	✘ 3. $(a^4) \times (b^2) \times (c^2)$
	✘ 4. $(a^{-8}) \times (b^{-5}) \times (c^{-9})$

Q.71	**Which country gave the name 'Dana' to the cyclone that hit India from the Bay of Bengal?**
Ans	✘ 1. The Maldives
	✘ 2. The United Arab Emirates
	✔ 3. Saudi Arabia
	✘ 4. Oman

Q.72	If the mean of the following data is 61, then the value of X is: xi: 55, 60, 70, 95 fi: 48, X, 31, 23
Ans	✘ 1. 799
	✔ 2. 773
	✘ 3. 790
	✘ 4. 796

Q.73	**Which of the following will cause the greatest increase in power dissipation for a given resistor?**
Ans	✔ 1. Doubling the voltage across the resistor
	✘ 2. Doubling the resistance
	✘ 3. Halving the current through the resistor
	✘ 4. Halving the resistance

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Q.74	If the length of a wire-shaped resistor is doubled, the resistivity:
Ans	✔ 1. remains the same
	✘ 2. is doubled
	✘ 3. is halved
	✘ 4. is quadrupled

Q.75	A, B, C, D, E, F and G are sitting around a circular table facing the centre. B sits third to the right of F. D sits fourth to the left of B. C is neither the immediate neighbour of B nor D. A sits third to the right of C. E is not the immediate neighbour of D. How many people sit between E and G, when counted from the left of E?
Ans	✘ 1. None
	✘ 2. One
	✘ 3. Two
	✔ 4. Three

Q.76	What was the venue of the North Atlantic treaty Organization (NATO) Summit in July 2024?
Ans	✘ 1. New York, United States
	✘ 2. London, England
	✔ 3. Washington, D.C., United States
	✘ 4. Paris, France

Q.77	The sum of 8 numbers is 336. Find their average number.
Ans	✔ 1. 42
	✘ 2. 40
	✘ 3. 41
	✘ 4. 43

Q.78	Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? FIS38, RUE70, DGQ102, PSC134, ?
Ans	✔ 1. BEO166
	✘ 2. BOW165
	✘ 3. BOQ166
	✘ 4. BOE166

Q.79	Two pipes can fill a tank in 34 hours and 94 hours, respectively. The time (in hours) required to fill the tank when both pipes are opened simultaneously is:
Ans	✘ 1. $\frac{796}{30}$
	✘ 2. $\frac{797}{29}$
	✔ 3. $\frac{799}{32}$
	✘ 4. $\frac{798}{31}$

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Q.80	A solution has a pH of 12. Which ion concentration is higher in this solution?
Ans	✗ 1. Both H^+ and OH^- are equal
	✗ 2. More number S^{2-} ions and more Cl^{-1}
	✓ 3. Only OH^-
	✗ 4. Only H^+

Q.81	RUON is related to VYSR in a certain way based on the English alphabetical order. In the same way, HKED is related to LOIH. To which of the given options is TWQP related, following the same logic?
Ans	✗ 1. AXUT
	✗ 2. XATU
	✓ 3. XAUT
	✗ 4. AXTU

Q.82	If the mean proportional of P and 100 is 50, then find the value of P.
Ans	✓ 1. 25
	✗ 2. 28
	✗ 3. 22
	✗ 4. 24

Q.83	Fleming's Right-Hand Rule is applicable in the case of _____.
Ans	✗ 1. electric motors
	✓ 2. electric generators
	✗ 3. electric kettles
	✗ 4. fuse wires

Q.84	Why is monitoring pH crucial for understanding the impacts of acid rain on soil and water ecosystems?
Ans	✗ 1. Acid rain only makes the water taste sour.
	✗ 2. Acid rain does not affect soil and water ecosystems.
	✓ 3. Acid rain decreases the pH, harming aquatic life and soil nutrient availability.
	✗ 4. Acid rain increases the pH of soil and water bodies.

Q.85	The centres of two circles with radii 28 cm and 20 cm are 50 cm apart. What is the length (in cm) of the transverse common tangent?
Ans	✗ 1. 16
	✗ 2. 15
	✗ 3. 13
	✓ 4. 14

Q.86	The ratio between HCF and LCM of two numbers 62 and 217 is 1 : 14. Find the LCM.
Ans	✗ 1. 439
	✗ 2. 402
	✗ 3. 430
	✓ 4. 434

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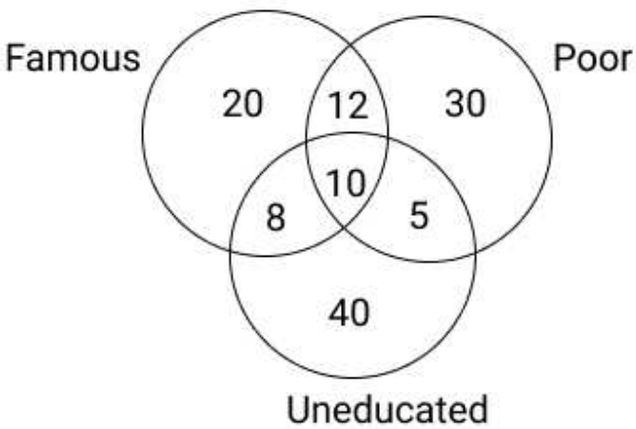
Q.87	For which mission of ISRO has the International Astronautical Federation (IAF) awarded ISRO the World Space Award?
Ans	✗ 1. Chandrayaan-2
	✗ 2. Aditya-L1
	✓ 3. Chandrayaan-3
	✗ 4. Venus Mission

Q.88	Study the given diagram carefully and answer the questions. The numbers in different sections indicate the number of persons. How many persons are both poor and uneducated but not famous ? (NOTE: You have to take the given data to be true even if they seem to be at variance from commonly known facts.) 
Ans	✗ 1. 8
	✓ 2. 5
	✗ 3. 12
	✗ 4. 30

Q.89	Find the simple interest (in closest integral ₹) on ₹4000 at 5.25% per annum rate of interest for the period from 14 February 2024 to 15 April 2024
Ans	✗ 1. 33
	✗ 2. 36
	✗ 3. 34
	✓ 4. 35

Q.90	The cost of a washing machine is 25% less than the cost of a TV. If the cost of the washing machine increases by 82% and that of the TV decreases by 16%, then what is the change in the total cost of 8 washing machines and 9 TVs?
Ans	✓ 1. Increase by 23.2%
	✗ 2. Increase by 20%
	✗ 3. Decrease by 24%
	✗ 4. Decrease by 21%

Q.91	Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below. NCG : SFF SQO : XTN
Ans	✗ 1. REV : WHW
	✓ 2. MKY : RNX
	✗ 3. IUD : NXA
	✗ 4. QHX : VKV

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Q.92	Select the option in which the numbers share the same relationship as that shared by the given pairs of numbers. (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.) 96, 12 184, 23
Ans	✗ 1. 130, 16
	✓ 2. 144, 18
	✗ 3. 156, 19
	✗ 4. 180, 20

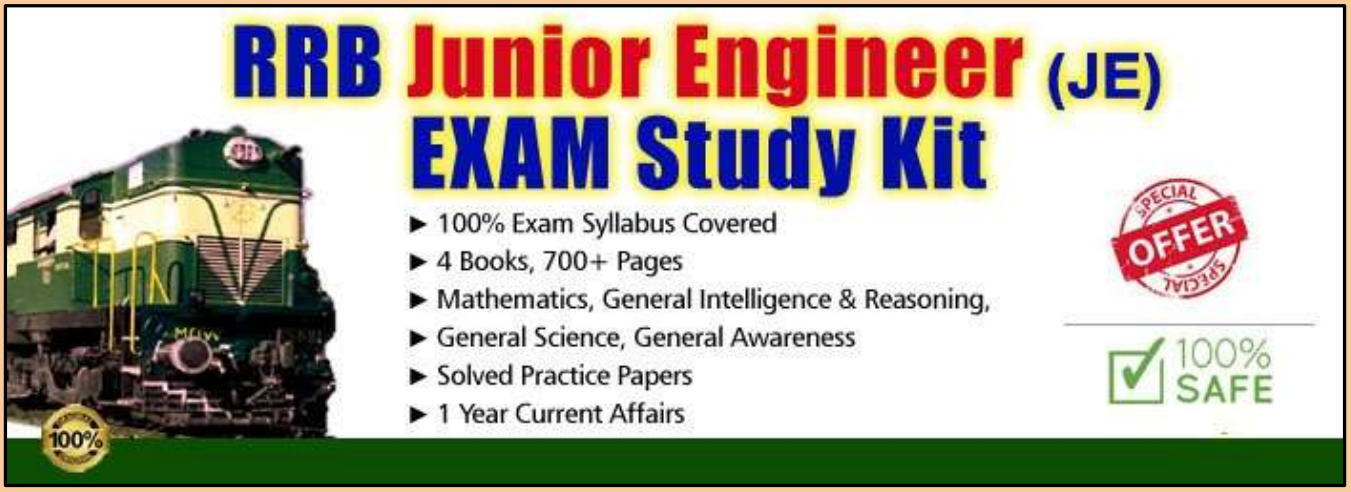
Q.93	Each of P, Q, R, S, T, U and V has an exam on a different day of a week starting from Monday and ending on Sunday of the same week. Q has the exam on Saturday. Only four people have exams after U. R has the exam immediately before T but not on Monday. S has the exam after P but before U. How many people have exams between R and V?
Ans	✗ 1. Three
	✓ 2. Two
	✗ 3. Five
	✗ 4. Four

Q.94	What architectural style is the Meenakshi Amman Temple known for?
Ans	✗ 1. Gothic
	✗ 2. Roman
	✗ 3. Indo-Saracenic
	✓ 4. Dravidian

Q.95	Which ion is responsible for the acidic properties of acids?
Ans	✗ 1. Na^+
	✓ 2. H^+
	✗ 3. OH^-
	✗ 4. Cl^-

Q.96	When two elements react to form a compound, it can be classified as:
Ans	✗ 1. displacement
	✗ 2. double displacement
	✗ 3. decomposition
	✓ 4. combination

Q.97	In a certain code language, 'fan light door' is coded as 'dy ph mt', 'door window mat' is coded as 'lp ph st', 'mat fan glass' is coded as 'st bq dy'. What is the code for 'fan' in that language? (Note: All the codes are two-letter coded only.)
Ans	✗ 1. mt
	✗ 2. bq
	✗ 3. ph
	✓ 4. dy



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Q.98	What term can be used for substances that are broken down by biological processes?
Ans	✗ 1. Non-biodegradable
	✓ 2. Biodegradable
	✗ 3. Compostable
	✗ 4. Recyclable

Q.99	What role do green plants and certain bacteria play in an ecosystem?
Ans	✓ 1. Producers
	✗ 2. Consumers
	✗ 3. Parasites
	✗ 4. Decomposers

Q.100	Which of the following substances will take the longest time to degrade naturally in the environment?
Ans	✓ 1. Leather
	✗ 2. Cardboard box
	✗ 3. Paper
	✗ 4. Leaves

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