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PREVIOUS YEAR PAPER

RRB JE CBT-I 2024

Official Question Paper with Answers

16 Dec 2024 · Shift 3

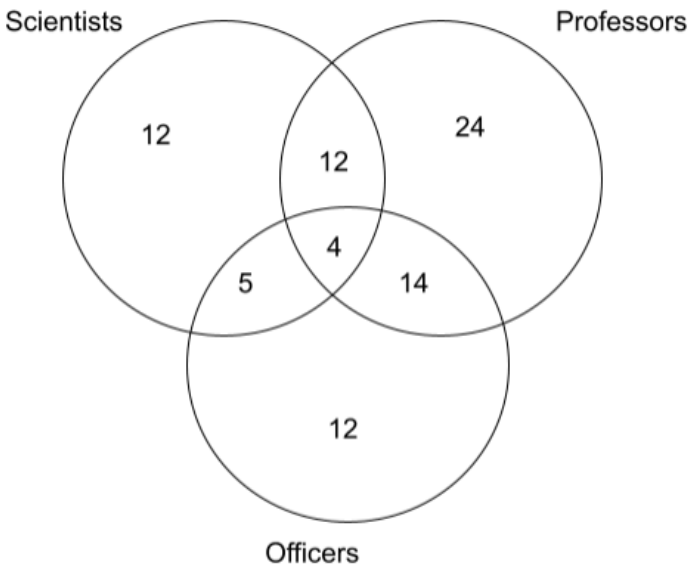
Exam	**RRB JE CBT-I (CEN RRB-03/2024)**
Test Date	**16/12/2024**
Test Time	**4:30 PM - 6:00 PM**
Subject	**RRB JE DMS CMA CS MS**
Total Questions	**100**

Marking scheme: Correct answer carries 1 mark per question. Incorrect answer carries 1/3 negative mark per question.

Answer key: The correct option for every question is marked ✔ Correct inline.

SECTION : RRB JE, DMS, CMA, CS, MS CBT-1

Q.1 Study the given diagram carefully and answer the question that follows. The numbers in different sections indicate the number of persons/objects.



How many such officers exist that are also scientists but not professors?

1. 12
2. 16
3. 4
4. 5 ✔ Correct

Q.2 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 ::?

: IBX :: HAW : %

1. # = FUU, % = KDZ
2. # = FYU, % = KDO
3. # = FYU, % = KDZ ✔ Correct
4. # = FYU, % = NDZ

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Q.3 Why might surgical family planning methods be risky if not done correctly?

1. **They can lead to infections or complications.** ✔ Correct
2. They might prevent ovulation.
3. They may cause hormonal side effects.
4. They can increase fertility.

Q.4 What should come in place of the question mark (?) in the given series?

305 251 206 170 143 ?

1. 130
2. **125** ✔ Correct
3. 120
4. 115

Q.5 Which of the following is related to Article 84 of the Constitution?

1. **Qualification for membership of Parliament** ✔ Correct
2. Disqualification for membership
3. Annual Financial Statement
4. Ordinance making Power of President

Q.6 Which of the following helps a developing embryo to expel waste products in case of humans?

1. Cervix
2. Oviduct
3. Ovary
4. **Placenta** ✔ Correct

Q.7 Which of the following factors directly affects the resistance of a conductor?

1. Current through the conductor
2. Power of the conductor
3. Voltage across the conductor
4. **Length of the conductor** ✔ Correct

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Q.8 The knowledge of which two subjects played key role in formulating laws of Inheritance?

1. **Maths and Science** ✔ Correct
2. Philosophy and Science
3. Geography and Philosophy
4. Maths and History

Q.9 Who among the following secured a gold medal for India at the Paris Paralympics 2024?

1. Pranav Soorma
2. **Navdeep Singh** ✔ Correct
3. Sachin Khilari
4. Hokato Hotozhe Sema

Q.10 Two pipes can fill a tank in 20 hours and 90 hours, respectively. The time (in hours) required to fill the tank when both pipes are opened simultaneously is:

1. $\frac{179}{9}$
2. $\frac{180}{11}$ ✔ Correct
3. $\frac{177}{13}$
4. $\frac{183}{8}$

Q.11 When light exits a prism, what is the result of its interaction with the prism surfaces?

1. Light passes through without any change.
2. Light is only absorbed.
3. Light is only reflected.
4. **Light is refracted.** ✔ Correct

Q.12 Refer to the given number, symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 2 3 $ 7 5 & 6 % 3 $ # 9 @) 7 + 6 ? > ? 4 7 5 $ (Right)

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

1. 4
2. 5 ✔ Correct
3. 6
4. 7

Q.13 Which of the following is NOT a private sector company in India?

1. Tata Iron and Steel Company
2. Bajaj Auto Limited
3. Bharat Heavy Electricals Limited ✔ Correct
4. Dabur

Q.14 Which factor does NOT affect the electric power consumed by an electric device?

1. Frequency of the device ✔ Correct
2. Voltage applied to the device
3. Resistance of the device
4. Current passing through the device

Q.15 Find the value of $2.5 \times 4 + 3.68 \div 4 - 8.46 \times 2 + 7.365 \times 4 + 2.8 \times 3 - 1.675 \times 2$.

1. 27.98
2. 28.51 ✔ Correct
3. 28.96
4. 27.21

Q.16 The average age of Mohan and his four friends is 36 years. Mohan is 5 years older than the average age of his four friends. Determine Mohan's age in years.

1. 42
2. 38
3. 44
4. 40 ✔ Correct

Q.17 Find the total time taken by boat to travel upstream and downstream, if the distance travel in each direction (upstream and downstream) is 270km. If speed of boat is 24 km/h and speed of current is 21 km/h.

1. 87 hours
2. **96 hours** ✔ Correct
3. 104 hours
4. 106 hours

Q.18 In a certain code,
'floor door room' is coded as 'bn la mt',
'door chair table' is coded as 'wd bn ka' and
'chair room window' is coded as 'ka bz la'.
All the codes are two-letter code only.
What is room coded as?

1. ka
2. bz
3. bn
4. **la** ✔ Correct

Q.19 Covalent molecules have low melting and boiling point because:

1. they are generally gaseous in nature
2. they have strong electrostatic intermolecular forces
3. **they have weak intermolecular forces** ✔ Correct
4. they have strong bonds within the molecule

Q.20 The current through a resistor is:

1. proportional to the square of the resistance
2. proportional to the square root of the resistance
3. **inversely proportional to the resistance** ✔ Correct
4. directly proportional to the resistance

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Q.21 Which of the following statements is/are correct about the PM Vishwakarma Yojana?

1) The PM Vishwakarma Yojana was launched by the Hon'ble Prime Minister on 17 September 2023.

2) Scheme aims to provide end-to-end support to artisans and craftspeople who work with their hands and tools.

3) The Scheme components include recognition through PM Vishwakarma Certificate and ID Card, Skill Upgradation, Toolkit Incentive, Credit Support, Incentive for Digital Transactions, and Marketing Support.

1. 2 only
2. 3 only
3. 1, 2 and 3 ✔ Correct
4. 1 only

Q.22 Evaluate: 16 + 18 ÷ 3 - 3 × 3

1. 15
2. 16
3. 12
4. 13 ✔ Correct

Q.23 If two resistors in series are equal, say R each, what is the total resistance?

1. R^2
2. R
3. R/2
4. 2R ✔ Correct

Q.24 If the ratio of four angles of a quadrilateral is $\angle A : \angle B : \angle C : \angle D :: 2 : 3 : 5 : 8$, what is the value of $\angle$

1. 40^o
2. 60^o ✔ Correct
3. 50^o
4. 90^o

Q.25 In a row of people all facing north, Shakshi is 11th from the left end. Ravi is 12th from the left end. Ravi is exactly between Shakshi and Ron. If Ron is 14th from the right end of the row, how many people are there in the row?

1. 25
2. 26 ✔ Correct
3. 27
4. 28

Q.26 What will come in the place of the question mark (?) in the following equation if '+' and '–' are interchanged and '÷' and '×' are interchanged?

51 – 8 ÷ 2 + 6 × 2 = ?

1. 71
2. 66
3. 70
4. 64 ✔ Correct

Q.27 A number when increased by 50 %', gives 2910. The number is:

1. 5820
2. 1940 ✔ Correct
3. 3880
4. 970

Q.28 The average price of three items of furniture is Rs 16800. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is

1. 5600
2. 7840
3. 3360
4. 10080 ✔ Correct

Q.29 What should come in place of the question mark (?) in the given series based on the English alphabetical order?

GNK IPM KRO MTQ ?

1. OUR
2. OVS ✔ Correct
3. OUS
4. OVR

Q.30 If x is inversely proportional to y, and y = 7 when x = 5, find the value of x, when y = 90.

1. $\frac{7}{18}$ ✔ Correct
2. $\frac{8}{19}$
3. $\frac{9}{21}$
4. $\frac{7}{19}$

Q.31 At which of the following places is the tomb of Sher Shah located?

1. Sasaram ✔ Correct
2. Agra
3. Patna
4. Lahore

Q.32 What is the perimeter of a sector of a circle (in cm) if the radius of the circle is 10.5 cm and the angle subtended at the centre of the circle is 60°?

$\frac{22}{7}$

(Use π =)

1. 37
2. 43
3. 32 ✔ Correct
4. 41

Q.33 In which of the following scenarios does the focal length of a concave mirror vary?

1. Focal length does not vary in any media ✔ Correct
2. When placed in a vacuum
3. When placed in water
4. When placed in air

Q.34 Three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which is the letter-cluster pair that does NOT belong to that group?

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

1. RV - KJ ✔ Correct
2. ZW - SP
3. TQ - MJ
4. NK - GD

Q.35 What is the correct sequence of following mountain ranges of India from north to south?

1. Vindhya Range 2. Aravalli Range 3. Ajanta Range 4. Satpura Range

1. 2, 1, 3, 4
2. 1, 2, 4, 3
3. 2, 1, 4, 3 ✔ Correct
4. 1, 2, 3, 4

Q.36 What is the thread-like structure in Rhizopus?

1. Spores
2. Sporangia
3. Blobs
4. Hyphae ✔ Correct

Q.37 Double displacement reactions usually occur in:

1. aqueous solution ✔ Correct
2. all three states
3. gaseous state
4. solid state

Q.38 Akshat completes his journey in 10 hours. He covers half the distance at 72 km/h and the rest at 36 km/h. What is the length of the journey (in Km)?

1. 473
2. 481
3. 480 ✔ Correct
4. 471

Q.39 The average price of three items of furniture is Rs 16875. If their prices are in the ratio 3:5:7, the price of the cheapest item (in Rs) is

1. 3375
2. 5625
3. 7875
4. 10125 ✔ Correct

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Q.40 In the reaction $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$, what is being reduced?

1. Hydrogen (H)
2. **Manganese (Mn)** ✔ Correct
3. Chlorine (Cl)
4. Oxygen (O)

Q.41 In plants, spore formation is a mode of reproduction that involves the production of spores. Which of the following statements about spore formation is true?

1. Spores are produced by flowers, and they grow into seeds.
2. Spores are formed through sexual reproduction in plants.
3. **Spores are produced by non-flowering plants like ferns and mosses, and they grow into new plants.** ✔ Correct
4. Spores are a form of vegetative propagation in angiosperms only.

Q.42 Who among the following is the leader of the house in the Lok Sabha?

1. **Prime Minister** ✔ Correct
2. Opposition Leader
3. Lok Sabha Speaker
4. President of India

Q.43 If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 4835176, what will be the sum of the digits which are second from the left and second from the right?

1. **14** ✔ Correct
2. 10
3. 11
4. 12

Q.44 If at same rate of interest, in 2 years, the simple interest is ₹56 and compound interest is ₹72, then what is the principal (in ₹)?

1. **49** ✔ Correct
2. 44
3. 53
4. 42

Q.45 Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only. (Left) 7 % > 9 2 & 4 < 3 # 8 $ 5 * 6 ^ # 1 (Right)

If all the symbols are dropped from the series, which of the following will be third from the left?

1. 2 ✔ Correct
2. 4
3. 3
4. 8

Q.46 Which of the following are the 6 accounts that have a role in the economic classification of the budget?

1. Accounts I to VI: Transaction in commodities, revenue, and capital ✔ Correct
2. Accounts A to F: Transaction in goods, services, and capital
3. Accounts 1 to 6: Transaction in commodities and services and transfers
4. Accounts X to XV: Transaction in current and capital assets

Q.47 Resistance is the property of a material that _____.

1. converts electrical energy to mechanical energy
2. generates electricity
3. allows the flow of current
4. opposes the flow of current ✔ Correct

Q.48 Which of the following metals is least likely to corrode in moist air?

1. Zinc
2. Copper ✔ Correct
3. Iron
4. Magnesium

Q.49 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.)

6-36-46-92; 7-49-59-118

1. 5-25-35-70 ✔ Correct
2. 8-64-74-138
3. 4-16-26-62
4. 3-9-29-58

Q.50 Write the expanded form of $(3a + 5b + 7c)^2$.

1. $9a^2 + 25b^2 + 49c^2 + 30ab + 70bc + 42ac$ ✔ Correct
2. $9a^2 + 25b^2 + 49c^2 + 30ab + 70bc + 52ac$
3. $9a^2 + 25b^2 + 49c^2 + 34ab + 70bc + 42ac$
4. $9a^2 + 25b^2 + 49c^2 + 30ab + 65bc + 42ac$

Q.51 7 is related to 9.8 following a certain logic. Following the same logic, 11 is related to 15.4. To which of the given options is 9 related, following the same logic?

(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.)

1. 13.8
2. 12.4
3. 12.6 ✔ Correct
4. 11.6

Q.52 The Moplah Rebellion of 1921 took place in which of the following regions?

1. Kerala ✔ Correct
2. Punjab
3. Assam
4. Bengal

Q.53 Q, R, S, T, U and V live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it, number 2 and so on till the topmost floor is numbered 6. S lives on the third floor. Only two people live between S and U. R lives on one of the floors below U but immediately above Q. Q does not live on the fourth floor. V lives on an odd numbered floor. How many people live between T and Q?

1. Four
2. Three
3. **Two** ✔ Correct
4. One

Q.54 If 'M' is the smallest perfect square number, which is exactly divisible by 12, 15 and 18, then find the sum of the digits of the quotient obtained, when M is divided by 25.

1. **9** ✔ Correct
2. 6
3. 7
4. 8

Q.55 The mean marks of the following distribution is:

Marks Obtained	No. of Students
83	9
73	5
20	18
82	16

1. 57
2. 50
3. **58** ✔ Correct
4. 78

Q.56 Write the expanded form of $(3a + 6b + 5c)^2$.

1. **$9a^2 + 36b^2 + 25c^2 + 36ab + 60bc + 30ac$** ✔ Correct
2. $9a^2 + 36b^2 + 25c^2 + 36ab + 60bc + 40ac$
3. $9a^2 + 36b^2 + 25c^2 + 36ab + 55bc + 30ac$
4. $9a^2 + 36b^2 + 25c^2 + 40ab + 60bc + 30ac$

Q.57 Which of the following ratio is smallest?

1. 17 : 39
2. 15 : 33
3. **10 : 36** ✔ Correct
4. 23 : 48

Q.58 What is the final product of sexual reproduction in plants?

1. **Seeds** ✔ Correct
2. Leaves
3. Fruits
4. Flowers

Q.59 Select the letter-cluster pair that best represents a similar relationship to the one expressed in the pairs of letter-clusters given below.

DMO : HPM

LIF : PLD

1. RKY : VNV
2. NEL : RGJ
3. ENZ : IQY
4. **VFP : ZIN** ✔ Correct

Q.60 Select the option in which the triads share the same relationship as that shared by the given triads.

HAND - ANDH - NDHA

BIRD - IRDB - RDBI

1. **ROSE - OSER - SERO** ✔ Correct
2. DUCK - CKDU - CUKD
3. CUBE - CEBU - BUEC
4. FROG - ROGF - ROFG

Q.61 In which case will a lens produce a magnification of exactly 1?

1. When the object is at infinity
2. **When the object is placed at twice the focal length** ✔ Correct
3. When the object is placed at the focal point
4. When the object is placed between centre of curvature and focal point

Q.62 In the case of a thin lens, how are the centres of curvature typically positioned relative to the optical centre?

1. They are closer to the edge than to the optical centre.
2. They are located on the lens surface itself.
3. **They are equidistant from the optical centre.** ✔ Correct
4. They coincide with the optical centre.

Q.63 S, T, U, V, W, X and Y are sitting around a circular table facing the centre. S sits fourth to the left of W. T sits second to the right of S. V is neither the immediate neighbour of T nor S. X sits third to the right of V. Y is not the immediate neighbour of W. How many people are sitting between S and T, when counted from the left of S?

1. **Four** ✔ Correct
2. Three
3. Two
4. One

Q.64 Which of the following statements is true about the pH of a neutral solution at 25°C?

1. The pH is less than 7.
2. The pH is greater than 7.
3. **The pH is equal to 7.** ✔ Correct
4. The pH is not equal to 7.

Q.65 Space Kidz India has launched the ShakthiSAT mission to train _____ girls aged 14-18 from 108 countries in space technology, aiming for a satellite launch under ISRO's Chandrayaan-4 mission in 2026.

1. **12,000** ✔ Correct
2. 7500
3. 5000
4. 10,000

Q.66 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete? QTW 13, MPS 19, ILO 25, EHK 31, ADG 37, ?

1. WZC 47
2. ZZC 43
3. WGC 43
4. **WZC 43** ✔ Correct

Q.67 What should come in place of the question mark (?) in the given series?

29 11 29 15 29 19 29 23 29 ?

1. 31
2. 25
3. 29
4. **27** ✔ Correct

Q.68 Where was the Swachh Vayu Diwas celebrated in India to combat air pollution in 2024?

1. Chandigarh
2. Bhopal
3. **Jaipur** ✔ Correct
4. Indore

Q.69 Which of the following is the correct formula for the first member of the alkene series?

1. C_4H_8
2. **C_2H_4** ✔ Correct
3. C_5H_{10}
4. C_3H_6

Q.70 What is the median of the following data?

50, 48, 40, 73, 29, 14, 89, 14, 51, 76, 78

1. **50** ✔ Correct
2. 51
3. 50.5
4. 49.5

Q.71 Find the simple interest (in closest integral ₹) on ₹3000 at 8% per annum rate of interest for the period from 25 February 2024 to 26 April 2024

1. 39
2. **40** ✔ Correct
3. 38
4. 41

Q.72 When an atom of sodium reacts with an atom of chlorine to form sodium chloride, each sodium atom:

1. loses one proton
2. gains one proton
3. gains one electron
4. **loses one electron** ✔ Correct

Q.73 What was the venue of the 57th ASEAN Foreign Ministers' Meeting?

1. Jakarta, Indonesia
2. Kuala Lumpur, Malaysia
3. **Vientiane, Lao People's Democratic Republic** ✔ Correct
4. Naypyidaw, Myanmar

Q.74 P is the son of Q's brother R. S is the wife of Q and T is the son of S. How is P related to S?

1. Father's brother
2. Brother's son
3. **Father's brother's son** ✔ Correct
4. Father's son

Q.75 A shopkeeper sells an item for ₹287.7 after giving two successive discounts of 86% and 85% on its marked price. Had he not given any discount, he would have earned a profit of 37%. What is the cost price (in ₹) of the item?

1. 10038
2. **10000** ✔ Correct
3. 9958
4. 10046

Q.76 Why does a compass needle get deflected when brought near a bar magnet?

1. The compass needle is made of iron.
2. The compass needle is non-magnetic.
3. **The compass needle is a small bar magnet.** ✔ Correct
4. The compass needle has electric charge.

Q.77 Keshav starts from Point A and drives 22 km towards the South. He then takes a left turn, drives 24 km, turns left and drives 27 km. He then takes a left turn and drives 25 km. He takes a final left turn, drives 5 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degrees turns only unless specified)

1. **1 km to the east** ✔ Correct
2. 3 km to the east
3. 2 km to the east
4. 4 km to the east

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Q.78 If A's salary is 37 % more than that of B, then how much percent is B's salary less than that of A (correct to 2 decimal places)?

1. 29.85%
2. 27.01% ✔ Correct
3. 29.04%
4. 30.86%

Q.79 After fertilisation, the zygote divides multiple times to form which structure within the ovule?

1. Seed
2. Fruit
3. Embryo ✔ Correct
4. Style

Q.80 The selling price of 25 books is equal to the cost price of 41 books. Find the loss or gain percentage.

1. 64 % gain ✔ Correct
2. 64 % loss
3. $\frac{100}{16}\%\ loss$
4. $\frac{100}{16}\%\ gain$

Q.81 $\frac{(a^5 \times b^9 \times c^1)}{(a^6 \times b^3 \times c^8)}$ in simplified form is:

1. $(a^{-10}) \times (b^{-5}) \times (c^{-8})$
2. $(a^{-5}) \times (b^3) \times (c^{-6})$
3. $(a^{-1}) \times (b^6) \times (c^{-7})$ ✔ Correct
4. $(a^4) \times (b^{-10}) \times (c^1)$

Q.82 The Great Stupa at Sanchi is an important site in which religion?

1. Buddhism ✔ Correct
2. Islam
3. Hinduism
4. Jainism

Q.83 Two taps can fill a cistern in 2 hours and 47 hours respectively. A third tap can empty it in 47 hours. How long (in hours) will it take to fill the empty cistern, if all of them are opened together?

1. 3
2. 4
3. 2 ✔ Correct
4. 5

Q.84 A question is followed by two statements numbered (I) and (II). You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and select the most appropriate answer.

Question:

Five friends, P, Q, R, S and T, are sitting around a circular table facing the centre. Who is sitting second to the left of T?

Statements:

(I) S sits second to the right of P. T sits to the immediate left of P.

(II) Only one person sits between Q and R. P sits to the immediate left of R.

1. Data in statement II alone is sufficient to answer the question while data in statement I is not.
2. Data in statements I and II together are sufficient to answer the question.
3. Data in statement I alone is sufficient to answer the question while data in statement II is not. ✔ Correct
4. Data in statements I and II together are not sufficient to answer the question.

Q.85 What is the role of the stigma in the process of fertilisation?

1. Fusing with the egg cell
2. Developing into a seed
3. Producing pollen
4. Serving as the site where pollen lands ✔ Correct

Q.86 A cylindrical rod has an outer curved surface area of 4500 cm^2. If the length of the rod is 39 cm, then the outer radius (in cm) of the

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

rod, correct to two places of decimal, is:

1. 18.36 ✔ Correct
2. 20.93
3. 18.25
4. 20.48

Q.87 In a certain code language,'fast and furious' is coded as 'bo li ke','quick is furious' is coded as 'ke ra ng' and'fast but quick' is coded as 'ng li ty'. What is the code for 'furious' in that language?

1. bo
2. ra
3. li
4. ke ✔ Correct

Q.88 Which of the following chemical equations is balanced?

1. $H_2O + O_2 \rightarrow H_2O_2$
2. $H_2 + 2O_2 \rightarrow 2H_2O$
3. $H_2 + O_2 \rightarrow H_2O$
4. $2H_2 + O_2 \rightarrow 2H_2O$ ✔ Correct

Q.89 B, C, D, F and H have different marks. Only one person has scored between B and D. Only three people have scored between H and

B. No one has scored between F and B and F's score is more than B's score. How many people have scored less than C?

1. Four
2. Three ✔ Correct
3. Two
4. One

Q.90 Write the expanded form of $(4a + 6b + 9c)^2$.

1. $16a^2 + 36b^2 + 81c^2 + 48ab + 108bc + 72ac$ ✔ Correct
2. $16a^2 + 36b^2 + 81c^2 + 48ab + 108bc + 82ac$
3. $16a^2 + 36b^2 + 81c^2 + 52ab + 108bc + 72ac$
4. $16a^2 + 36b^2 + 81c^2 + 48ab + 103bc + 72ac$

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Q.91 According to the Citizenship Amendment Act of 2019, individuals who entered India on or before _____ and belong to the Hindu, Sikh, Buddhist, Jain, Parsi or Christian community from Pakistan, Afghanistan or Bangladesh are eligible for citizenship.

1. 31 December 2016
2. 31 December 2017
3. 31 December 2015
4. **31 December 2014** ✔ Correct

Q.92 Which of the following reactions leads to the production of bleaching powder?

1. $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$
2. $CaO + H_2O \rightarrow Ca(OH)_2$
3. $CaCO_3 + HCl \rightarrow CaCl_2 + CO_2 + H_2O$
4. **$Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$** ✔ Correct

Q.93 Which of the following is called a motile germ cell?

1. Zygote
2. Female gamete
3. **Male gamete** ✔ Correct
4. Embryo

Q.94 Who is the author of 'Segar: Autobiography with Paintings,' published in 2013?

1. Jhumpa Lahiri
2. **D Raja Segar** ✔ Correct
3. Salman Rushdie
4. Githa Hariharan

Q.95 Which of the following is true regarding the bud development process in Hydra?

1. Splitting of cytoplasm
2. Splitting of nucleus
3. **Cell divisions at one site** ✔ Correct
4. Formation of spore

Q.96 A vendor bought lemons at 40 for a rupee. How many must he sell for a rupee to gain 25%?

1. 34
2. **32** ✔ Correct
3. 36
4. 33

Q.97 If x varies inversely as $y^3 - 1$ and is equal to 7 when y = 2, find x when y = 6.

1. $\frac{51}{215}$
2. $\frac{50}{216}$
3. $\frac{49}{215}$ ✔ Correct
4. $\frac{49}{216}$

Q.98 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 letter-cluster 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.)

1. FI-NS ✔ Correct
2. HK-OU
3. VY-CI
4. SV-ZF

Q.99 If $\sin\theta = \frac{12}{13}$, then what is the value of $26\sin\theta - 10\sec\theta$?

1. 0
2. 1
3. 2
4. −2 ✔ Correct

Q.100 Which of the following best describes a combination reaction?

1. A reaction where a product releases gas
2. Two elements combine to form a compound ✔ Correct
3. A compound breaks down into simpler substances
4. Ions exchange between two compounds