RRB NTPC CBT 2 (Level-3) Official Paper (Held On: 17 June 2022 Shift 3) (Previous Year Paper)

RRB NTPC • 2022 • 120 questions • 90 minutes • Answer key and solutions

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FULL TEST

Q1. Select the letter-cluster from among the given options that can replace the question mark (?) and continue the given series.

KWX, NSA, QOD, TKG, WGJ, ?

(a) ZDM
(b) CAN
(c) AND
(d) ZCM

Q2. According to the sample registration system, which of the following state has the highest infant mortality rate (for 2019)?

(a) Uttar Pradesh
(b) Madhya Pradesh
(c) Bihar
(d) Chhattisgarh

Q3. Harijan Sevak Sangh was founded by _____ in 1932 for the purpose of eradicating the evil called untouchability.

(a) Narendra Dev
(b) Jawaharlal Nehru
(c) Aruna Asif Ali
(d) Mahatma Gandhi

Q4. In which year was the Azad Hind Radio Service as part of Germany's radio service started?

(a) 1942
(b) 1940
(c) 1939
(d) 1938

Q5. A sum of Rs. 3680 is invested at 12.5%p.a. simple interest for 6 years. What will be the total amount payable on maturity?

(a) Rs. 6420
(b) Rs. 6460
(c) Rs. 6440
(d) Rs. 6480

Q6. The roots of the equation $9(x + 9)^2 = 441$ are :

(a) 2, 16
(b) 12, 21
(c) −12, −21
(d) −2, −16

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Q7. X can do a certain work in 84 days. Y is 50% less efficient than X while Z takes 28 days to do the same work. To complete the work, Y started the work, X joined him after 3 days and Z joined them after 7 days from the beginning. For how many days did Z work to complete the work?

(a) 17
(b) 14
(c) 16
(d) 15

Q8. In a group of students, the number of girls is three-fourth of the number of boys. If two-third of the number of girls and one-half of the number of boys like mango juice, then what fraction of the total number of girls and boys like mango juice?

(a) 1/7
(b) 4/7
(c) 2/7
(d) 3/7

Q9. The perimeter of a square is equal to the perimeter of a rectangle of length 56 cm and breadth 42 cm. Find the perimeter of a semicircle (in cm) whose diameter is equal to the side of the square (Use π = 22/7)

(a) 126
(b) 224
(c) 198
(d) 182

Q10. According to World Steel Association, which of the following countries was the global leader in steel production for the year 2020?

(a) Japan
(b) India
(c) The US
(d) China

Q11. Select the option that will fill in the blank and complete the given series.

ABCD, _____, XYZA, XXXX, UVWX, UUUU

(a) AAAA
(b) DCBA
(c) DDDD
(d) BCBA

Q12. Which traditional dye-painted figurative and patterned garment received the Geographical Indication (GI) tag in 2021?

(a) Thanka painting
(b) Karuppur Kalamkari Painting
(c) Pattachitra painting
(d) Mithila Painting

Q13. The value of 5 − 10 ÷ 5 × 2 − [12 ÷ 6 of {5 × 6 ÷ (6 − 9) + 13} × (8 ÷ 4 of 3)] is

(a) 5/6
(b) 2/3
(c) 5/9
(d) 4/9

Q14. Which of the following country has become the first country in the world to accept bitcoin as legal currency?

(a) El Salvador
(b) Albania
(c) Jamaica
(d) Uzbekistan

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Q15. If ÷ means addition, × means subtraction, + means multiplication and − means division then

40 − 20 + 6 × 2 ÷ 5 = ?

(a) 13
(b) 16
(c) 14
(d) 15

Q16. Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the one that is different.

(a) KNF
(b) PSL
(c) JMF
(d) UXQ

Q17. Where was the successful launch of Supersonic Missile Assisted Torpedo System developed by DRDO in December 2021?

(a) Maharashtra
(b) West Bengal
(c) Andhra Pradesh
(d) Orissa

Q18. Which part of the Indian Constitution is related with the Panchayats?

(a) VIII
(b) X
(c) IX
(d) IXA

Q19. Some students are sitting in a row facing North. Their location is subject to the following conditions:

1. B sits immediate next to both G and D.
2. H sits third to the left of B. H sits second to the right of A.
3. C sits immediate next to both H and G.
4. A and F are sitting at the extreme ends of the row, and F sits second to the right of B.

How many students are there in the row ?

(a) 7
(b) 8
(c) 6
(d) 5

Q20. Five friends, Purva, Roshan, Vibhor, Luna and Anuj, are wearing five different coloured T-shirts, red, black, purple. yellow and blue. Each of the friends is allergic to one of the following: nuts, dairy, cats, fish and dust, such that no two has the same allergy.

Luna is allergic to cats but is not wearing a purple T-shirt. The one wearing a yellow T-shirt has dust allergy. Purva is wearing a black t-shirt but is not allergic to dairy or fish. Vibhor is wearing a purple T-shirt but does not have fish allergy. Luna is wearing a blue T-shirt. Roshan is wearing a red T-shirt. Who is allergic to dust?

(a) Vibhor
(b) Purva
(c) Roshan
(d) Anuj

Q21. The cost of cultivating a square field at the rate of Rs. 320 per hectare is Rs. 2880. Find its area.

(Use 1 hectare = 10000 sq.m)

(a) 60000 sq.m
(b) 70000 sq.m
(c) 80000 sq.m

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(d) 90000 sq.m

Q22. Shogatsu is the New Year festival of which of the following country?

(a) Brazil
(b) New Zealand
(c) Japan
(d) France

Q23. Which one of the following is not a feature of an Open Economy?

(a) Freedom to foreign investment
(b) Delicensing of Industries
(c) Restrictions on Large-scale industries
(d) Freedom to import technology

Q24. Find the area of a rhombus whose diagonals are 48m and 64m long.

(a) 1436 sq.m
(b) 1636 sq.m
(c) 1736 sq.m
(d) 1536 sq.m

Q25. According to the World Economic Forum, based on the information received till March 2021, which of the following countries had the largest number of languages spoken in the region?

(a) United States of America
(b) Norway
(c) Papua new guinea
(d) India

Q26. Sachin and Sehwag together have Rs. 950. By taking Rs. 250 from Sehwag, Sachin will have the same amount as Sehwag already had. Find the ratio of the sums that Sehwag and Sachin had initially.

(a) 9 : 7
(b) 12 : 7
(c) 13 : 9
(d) 7 : 5

Q27. 'Midnight's Children' which portrays India's transition from British colonial rule to independence and partition of India is written by :

(a) Salman Rushdie
(b) Vidiadhar Surajprasad Naipaul
(c) Amitav Ghosh
(d) Vikram Seth

Q28. What is the address of the cell in the tenth row of the fifth column in an MS-Excel worksheet?

(a) 5J
(b) E10
(c) J5
(d) 10E

Q29. A question is given, followed by two statements labelled I and II. Decide which of the statements is/are sufficient/necessary to answer the question and select the correct answer.

Question:

Who is the shortest among Shamita, Tanya and Rekha?

Statements:

I. Shamita is taller than Rekha. Rekha is shorter than Tanya.

II. Rekha is shorter than Surbhi. Surbhi is taller than Shamita. Tanya is shorter than Surbhi.

(A) Statement I alone is sufficient to answer the question, whereas Statement II alone is not sufficient to answer the

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question.

(B) Statement II alone sufficient to answer the question, whereas statement I alone is not sufficient to answer the question.

(C) Both statements I and II together are not sufficient to answer the question.

(D) Both statements I and II together are necessary to answer the question.

(a) C
(b) A
(c) D
(d) B

Q30. What is the approximate percentage, by weight, of oxygen in the earth's crust?

(a) 46.6%
(b) 19.6%
(c) 16.6%
(d) 36.6%

Q31. Read the given sitting arrangement information and answer the question that follows.

Puneet, Monu, Jyoti. Umesh. Tapsi. Vinod, Pushpa and Saha are sitting at a square table in such a way that four of them are sitting at four corners of the table, while the other four are sitting in the middle of each of four sides of the table. The four who are sitting at the corners of the table are facing the centre, whereas those who are sitting in the middle of the sides of the table are facing outside. Puneet, who is facing the centre, is sitting third to the right of Vinod. Tapsi, who is facing centre, is not an immediate neighbour of Vinod. Only one person is sitting between Vinod and Pushpa. Umesh sits second to the right of Monu. Monu is facing the centre. Jyoti is not an immediate neighbour of Puneet.

Which of the following statements regarding Monu is true?

(a) Monu is an immediate neighbour of Saha.
(b) Monu is sitting immediately Right of Tapsi.
(c) Monu is sitting exactly between Vinod and Pushpa.
(d) Monu is an immediate neighbour of Jyoti.

Q32. Which of the following writs is issued to prevent a person from performing an act in public office to which he/she is not entitled?

(a) Certiorari
(b) Quo Warranto
(c) Habeas Corpus
(d) Prohibition

Q33. What was the rank of India in the medal tally at the 14th International Olympiad on Astronomy and Astrophysics (IOAA) 2021, organized by Colombia in November 2021?

(a) First
(b) Fourth
(c) Third
(d) Second

Q34. Hrithik sells a table at a profit of 37.5%. had he bought it for 12.5% less, and sold it for Rs. 330 less, he would have made a profit of 10%. by what percent is the cost price of the table less than Rs. 1,000?

(a) 22%
(b) 20%
(c) 23%
(d) 21%

Q35. With reference to abundant elements in Earth's Crust, which among the following is the most abundant metal in the earth's crust?

(a) Barium
(b) Aluminium

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(c) Titanium
(d) Manganese

Q36. Select the number from among the given options that can replace the question mark (?) and continue the given series.

6, 27, 128, 629, ?

(a) 3130
(b) 3131
(c) 2121
(d) 2120

Q37. In certain code language,

'You are bad' is written as 'YO LO PO', 'Schools are bad' is written as 'NO PO YO', and 'You are human' is written as 'LO PO RO'.

How will 'Human are bad' be written in that language?

(a) RO YO NO
(b) RO YO PO
(c) RO NO PO
(d) RP PO LO

Q38. If the 5-digit number 505xy is divisible by 11 and 21, then what is the value of (7x − 5y)?

(a) 16
(b) 30
(c) 31
(d) 11

Q39. Who is the author of the book 'Lady Doctors: The Untold Stories of India's First Women in Medicine'?

(a) Kunal Basu
(b) Kavitha Rao
(c) Jairam Ramesh
(d) Anuradha Roy

Q40. By selling an item for Rs. 222, a person incurs a loss of Rs. 48. What is the percentage of loss incurred in the transaction?

(a) 18 8/9 %
(b) 17 7/9 %
(c) 16 7/18 %
(d) 21 23/37 %

Q41. _____ of the Constitution of India provides that no discrimination can be made against a citizen on grounds only of race, religion, caste, or place of birth or any of them.

(a) Article 16
(b) Article 15
(c) Article 19
(d) Article 17

Q42. Which of the following is called the 'powerhouse of the cell'?

(a) Red blood cells
(b) Mitochondria
(c) White blood cells
(d) Plasma membrane

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Q43. IJK is an isosceles triangle in which IJ = IK. The value of angle IJK is what percentage less than 120°, if angle JIK = 60°.

(a) 52%
(b) 55%
(c) 54%
(d) 50%

Q44. Read the given statement and conclusions carefully. Decide which of the given conclusions is/are true based on the given statement.

Statement:

$A \geq B = Q \leq H < X \leq K$

Conclusions:

I. $B < K$

II. $X > Q$

(a) Only conclusion I is true
(b) Only conclusion II is true
(c) Both conclusions I and conclusion II are true
(d) Neither conclusion I nor II is true

Q45. Deepika starts her evening walk facing north and walks for 2 km. Then, she takes a right turn and walks for another 2 km. Finally, she takes a left turn and walks for another 3 km. Which direction is she facing now? (All turns are 90° turns only)

(a) West
(b) East
(c) North
(d) South

Q46. Which of the following options is the closest approximate value which will come in place of question mark(?) in the following equation?

$5.01 + (3.01 \times 1.99^2) \times 4 + 6.01 \div 2.03 = ?$

(a) 56
(b) 65
(c) 57
(d) 52

Q47. The value of the expression $7\ 2/3 \times 5\ 3/4 + 9\ 1/2 \times 6\ 3/4$ is

(a) 114 1/24
(b) 98 3/24
(c) 108 5/24
(d) 103 7/24

Q48. A can do a certain work in 15 days and B can do one-third of the same work in 10 days. A and B work together for 6 days and then A leaves. B completes the remaining work with C in 8 days. A and C together can complete the original work in :

(a) 12 days
(b) 9 days
(c) 15 days
(d) 18 days

Q49. Which one of the following is NOT a basic principle of Micro Finance Institutions in India?

(a) Lack of physical collateral
(b) Peer monitoring
(c) Focus on women borrowers
(d) Large amounts of loan

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Q50. Sports Journalists' Federation of India (SJFI) Para-athlete Woman of the Year Award 2021 winner Avani Lekhara plays which sport?

(a) Badminton
(b) Javelin throw
(c) Shotput
(d) Shooting

Q51. The pH of a neutral solution is _____ on the pH scale.

(a) 14
(b) 5
(c) 7
(d) 10

Q52. With respect to Industry and Trade, MRTP stands for _____.

(a) Moderate and Restrictive Trade Protocols
(b) Monopolistic and Reinforcing Trade Protocols
(c) Monopolies and Restrictive Trade Practices
(d) Monetary and Repository Trade Practices

Q53. Lokesh runs 4 km facing east, takes a left turn and runs for another 3 km. He finally takes a left turn, runs 4 km and stops. Which direction is he facing now and what is the shortest distance he has to cover to reach back to the starting point? (All turns are 90° turns only)

(a) West, 7 km
(b) North, 4 km
(c) North, 7 km
(d) West, 3 km

Q54. Which of the following keyboard shortcuts is used to lock your PC in a Windows 10 operating system?

(a) Windows logo key + D
(b) Ctrl + K
(c) Windows logo key + L
(d) Ctrl + L

Q55. If the rate of interest is 20% per annum and interest is compounded half yearly, then in 3/2 years a sum of Rs. 4000 will amount to :

(a) Rs. 5224
(b) Rs. 5234
(c) Rs. 5324
(d) Rs. 5334

Q56. The greatest number that exactly divides 536, 1064 and 1928 is

(a) 8
(b) 4
(c) 12
(d) 6

Q57. Given are the scores of a batsman in the last 10 innings. Find the median score of the batsman in these innings.

65, 180, 81, 6, 63, 27, 122, 8, 165, 50

(a) 64.5
(b) 64
(c) 65
(d) 63

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Q58. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follows from the statements.

Statements:

1. All glasses are plates.

2. No plate is a spoon.

Conclusions:

I. Some glasses are spoons.

II. No spoon is a glass.

(a) Either conclusion I or II follows
(b) Only conclusion II follows
(c) Neither conclusion I nor II follows
(d) Only conclusion I follows

Q59. Tetanus is a serious disease of the nervous system caused by a toxin-producing :

(a) protist
(b) fungus
(c) parasite
(d) bacterium

Q60. Anmol can complete a piece of work in 25 days. Together with Garima he can complete the same work in 15 days. while Anmol and Aseema working together can complete the same work in 20 days. In how many days can Garima and Aseema working together complete the same work?

(a) 300/11
(b) 30
(c) 29
(d) 250/9

Q61. In a certain code language, CABLE is coded as 65@7#, and PARKLET is coded as 85917#2. How will ELRAP be coded in that language?

(a) 7#958
(b) 9#785
(c) #9587
(d) #7958

Q62. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

a) All tops are t-shirts.

b) Some shrugs are t-shirts.

Conclusions:

I. Some tops are shrugs.

II. All T-shirts are tops.

(a) Neither conclusion I nor II follows.
(b) Only conclusion I follows.
(c) Both conclusions I and II follow.
(d) Only conclusion II follows.

Q63. Which of the following tribes is NOT native to the state of Tamil Nadu?

(a) Kota
(b) Malasar
(c) Bhutia

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(d) Kurumba

Q64. Soniji ki Nasiya Temple in Ajmer built in the 19th century is dedicated to _____.

(a) Lord Ajitnath
(b) Lord Rishabhdev
(c) Lord Mahavir
(d) Lord Chandraprabh

Q65. 'P + Q' means 'P is the daughter of Q'
'P × Q' means 'P is the son of Q'
'P − Q' means 'P is the wife of Q'
Which of the following options is correct for the given expression?
'A + B − C × D'

(a) B is the son of D
(b) A is the daughter of D's Son
(c) B is the daughter of D
(d) C is the wife of D

Q66. Revered as the 'Father of Carnatic Music', _____ is one of the most eminent musicians.

(a) Purandar Das
(b) Dharma Raja
(c) Tyagraj
(d) M. D. Ramanathan

Q67. Jat-Jatin is one of the most popular folk dance form of which among the following states?

(a) Madhya Pradesh
(b) Assam
(c) Bihar
(d) Chhattisgarh

Q68. In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. In three of the four pairs, the same pattern is applied and hence they form a group. Select the number-pair that does NOT belong to this group.
A. 2 : 5
B. 4 : 18
C. 6 : 39
D. 8 : 66

(a) B
(b) A
(c) D
(d) C

Q69. In which country is the Ural Industrial Region located?

(a) United States of America
(b) China
(c) Britain
(d) Russia

Q70. After the end of industrial licensing in India in 1991, _____ is one of the few industries for which it is mandatory to obtain an industrial license.

(a) Leather
(b) Beverage
(c) Liquor
(d) Vegetable and food processing

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Q71. Simplify the following expression :

$3.5 \times 0.5 \times (4.4 - 0.625 \div 1.5625)$

(a) 7
(b) 14
(c) 1.75
(d) 10.5

Q72. If in a code language, 'HOME' is written as 'LROF' and 'EYE' is written as 'HAF' and 'SO' is written as 'UP', how will 'HOUSE' be written in that language?

(a) LQXUF
(b) MSWUF
(c) LSXUF
(d) MSXUF

Q73. The point on the supply curve at which a firm earns only normal profit is called the _____.

(a) exit point
(b) break-even point
(c) break-through point
(d) income point

Q74. M. N, O, P and R are sitting around a circular table. All are facing towards the centre of the table. M is seated second to the right and N is seated third to the right of O. P is seated second to the left of N. Who is seated between N and O when counted from the left of O?

(a) M or R
(b) Only R
(c) Only P
(d) P or R

Q75. A solid right circular cone is 11.2 cm high and the radius of its base is 2.8 cm. If the cone is melted and recast into a sphere, then what will be the diameter of the sphere?

(a) 8.4 cm
(b) 4.2 cm
(c) 2.8 cm
(d) 5.6 cm

Q76. Find the cost of painting all surfaces of a 10 m long hollow steel pipe whose internal and external diameters measure 15 cm and 17 cm respectively, if the cost of painting 1 cm^2 of the surface is Rs. 0.15. [Use $\pi = 22/7$]

(a) Rs. 15100.80
(b) Rs. 15000.80
(c) Rs. 15200.80
(d) Rs. 15160.80

Q77. The SI unit of length is _____.

(a) meter
(b) inch
(c) feet
(d) mile

Q78. Six colleagues, Ranjana, Diksha, Chahat, Aakash, Rita and Suraj, are sitting on a bench in a park facing north. Rita is sitting at the east end of the bench. Ranjana and Chahat were sitting immediately next to each other. There are only two people sitting between Aakash and Suraj. Diksha has only one person to her right. Aakash is sitting at the west end of the bench. There are three people between Rita and Ranjana. Who is third from the west end of the bench?

(a) Chahat
(b) Ranjana

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(c) Diksha
(d) Suraj

Q79. What will be the median of the given data?

1, 1.1, 2.3, 0.1, 0.9, 5, 3.9, 2.5, 4.2, 4.6

(a) 2.3
(b) 2.4
(c) 2.6
(d) 2.5

Q80. Study the given letter, number, symbol series and answer the question that follows.

(Left) @ 5 7 R M # 2 Q Ω 3 Z A 4 @ W ! R # 5 N % A ! T & 4 A (Right)

How many such letters are there which are immediately followed by a symbol and also immediately preceded by a number?

(a) 4
(b) 3
(c) 1
(d) 2

Q81. In Vaishali, the second Buddhist council was organized by _____.

(a) shaven
(b) Anurudh
(c) sunidha
(d) kalashoka

Q82. Which of the following is the most gender equal country, according to Global Gender Gap Report 2021?

(a) Iceland
(b) Finland
(c) Sweden
(d) Norway

Q83. A sum of Rs. 14000 amounts to Rs. 18515 in 2 years at a certain rate percent p.a., interest compounded yearly. What will be the compound interest on the same sum, in the same time and at the same rate, if the interest is compounded 8-monthly?

(a) Rs. 4494
(b) Rs. 5620
(c) Rs. 4634
(d) Rs. 3234

Q84. Find the least number which when divided by 11,12,13,14 and 15 leaves the remainder 2 in each case.

(a) 60062
(b) 60058
(c) 60060
(d) 60002

Q85. Who directed the film Koozhangal, which won the Best Film award in the Asian Film Competition category at the 20th Dhaka International Film Festival held in January 2022?

(a) PS Vinodraj (PS Vinothraj)
(b) Ranjith Sankar
(c) Sunidha
(d) Indranil Roy Chowdhury

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Q86. Kuroshio current flows in which of the following oceans?

(a) Southern Ocean
(b) Pacific Ocean
(c) Atlantic Ocean
(d) Indian Ocean

Q87. In a certain code language, BUTTER is written as 2212020518, MINED is written as 1391454. How will OIL be written in that language?

(a) 12345
(b) 15912
(c) 18632
(d) 17456

Q88. Who is the only Indian appointed as a member of Badminton World Federation's (BWF) Athletes Commission till 2025?

(a) Saina Nehwal
(b) Bhamidipati Sai Praneeth
(c) Srikanth Kidambi
(d) Pusarla Venkata Sindhu

Q89. S is shorter than N. P is taller than S. Q is taller than N but shorter than H. N is taller than P. Who will be exactly in the middle if they stand in a row according to height?

(a) P
(b) Q
(c) H
(d) N

Q90. Select the option that is related to the fifth term in the same way as the second term is related to the first term and fourth term is related to the third term.

Rahul : 12 : : Zenus : 17 : : Vinas : ?

(a) 15
(b) 13
(c) 11
(d) 14

Q91. Raman and his sister Shikha study in the same class. Raman's rank in an examination is 11^(th) from the bottom and Shikha's rank in the same examination is 1^(st) from the top If there are 11 students who ranked between Raman and Shikha, how many students are there in the class?

(a) 23
(b) 24
(c) 25
(d) 22

Q92. The numbers 4, 6, 10, x, 20, 24, 32 are arranged in ascending order. Find the value of x if their mean and their median are equal.

(a) 12
(b) 20
(c) 16
(d) 8

Q93. 64 students of Class 10 took part in a mathematics quiz. If the number of girls was 16 more than the number of boys, then find the ratio of the number of boys to the total number of students who took part in the quiz.

(a) 3 : 8
(b) 4 : 9
(c) 5 : 8

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(d) 3 : 5

Q94. Read the given statements and conclusions carefully. Decide which of the given conclusions is/are true based on the given statements

Statements:

$K \leq O = M \geq N$ and $L \geq M$

Conclusions:

I. $L \geq K$,

II. $N < K$

(a) Only I is true
(b) Both I and II are true
(c) Both I and II are not true
(d) Only II is true

Q95. The President of India is elected by an electoral college consisting of:

1. Elected members of both the Houses of Parliament i.e. Lok Sabha and Rajya Sabha
2. Elected members of State Legislative Assemblies.

(a) only 2
(b) neither 1 nor 2
(c) only 1
(d) 1 and 2, both

Q96. Which of the following states stands at number one in terms of route kilometers at the end of the year 2019-20 as per the Indian Railways Yearbook 2019-20?

(a) Rajasthan
(b) Maharashtra
(c) Uttar Pradesh
(d) Madhya Pradesh

Q97. The income of A is 25% less than the income of B whose income is 40% more than that of C. The income of C is 20% less than that of D. By what percent is the income of A more than the income of C?

(a) 5%
(b) 10%
(c) 4%
(d) 8%

Q98. Find the value of x in the following equation:

$[1+1/(1+1/(1+1/5))] \div 1\ 6/11 = x/2$

(a) 2
(b) 1
(c) 1/2
(d) 2/3

Q99. Prayag Prashasti (also known as Allahabad Pillar Inscription) provides us information about the achievements of _____.

(a) Samudragupta
(b) Chandragupta-I
(c) Ashoka
(d) Srigupta

Q100. Ravi has 1530 eggs with him while Vinita has 2380 eggs with her that needs to be placed in cartons. What is the maximum number of eggs that each carton should hold so that both Ravi as well as Vinita find such cartons acceptable to use, leaving no empty space, nor having any egg unpacked?

(a) 255

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(b) 170
(c) 85
(d) 340

Q101. If x : y = 3 : 4, then (7x − 4y) : (3x + 2y) = ?
(a) 1 : 4
(b) 1 : 3
(c) 2 : 7
(d) 5 : 17

Q102. In 1680, _____, son of Chhatrapati Shivaji, ascended the throne after winning a war of succession against his brother Rajaram.
(a) Shahu
(b) Balaji
(c) Chhatrapati Sambhaji
(d) Baji Rao Pratham

Q103. The Davis Cup 2021 was won by _____.
(a) Austria
(b) Uzbekistan
(c) Croatia
(d) Russia

Q104. The volume of a right circular cylinder is 1792π cm^3 and its radius is 16 cm. What is the curved surface area (in cm^2) of the cylinder?
(a) 224π
(b) 256π
(c) 112π
(d) 192π

Q105. Which of the following constitutional amendments included the fundamental duties?
(a) 40th Amendment.
(b) 80th Amendment.
(c) 42nd Amendment.
(d) 86th Amendment.

Q106. Avik runs at a speed of 8 metres per second. How many kilometres will Avik cover in 24 minutes if he continues running at the same speed?
(a) 11.52
(b) 11.56
(c) 11.44
(d) 11.60

Q107. 1. There are four friends Punit, Kaushal, Rakhi and Jagjeet.
2. Punit and Kaushal play rugby and cricket.
3. Kaushal and Rakhi play rugby and badminton.
4. Punit and Jagjeet play cricket and basketball.
5. Rakhi and Jagjeet play badminton and basketball.
Who among the following plays cricket, basketball, and badminton?
(a) Punit
(b) Kaushal
(c) Rakhi
(d) Jagjeet

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Q108. In covering a distance of 60 km, Arjun takes 2 hours more than Rohit. If Arjun doubles his speed, then he would take 1 hour less than Rohit. Arjun's original speed is:

(a) 15 km/hr.
(b) 25 km/hr.
(c) 5 km/hr.
(d) 10 km/hr.

Q109. In which of the following sub-ranges of the Himalayas is the Baltoro Glacier located?

(a) Ladakh
(b) Karakoram
(c) Zanskar
(d) Pir panjal

Q110. A building has seven floors numbered one to seven in such a manner that the ground floor is numbered one, the floor above it is numbered two, and so on, such that the topmost floor is numbered seven. One of the seven persons, namely T, U, V, W, X, Y, and Z, lives on each floor, but not necessarily in the same order.

There are only two people living between the floors of X and Z. No person lives above U's floor. T lives in one of the odd floors. The number of people living above and below Y is equal. W does not live above anyone other than V. X lives in one of the floors above Z.

Who lives on the 5^(th) floor?

(a) Y
(b) X
(c) Z
(d) T

Q111. Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.

EYXJ : IGBR : : CRFQ : GZJY: : ZIQM : ?

(a) DNUR
(b) EQVU
(c) DQUU
(d) ENVR

Q112. Which of the following states is home to the only mine in the country involved in industrial-scale mining of diamonds?

(a) Tamil Nadu
(b) Karnataka
(c) Madhya Pradesh
(d) Chhattisgarh

Q113. Select the number from among the given options that can replace the question mark (?) in the following series.

3, 78, 9, 69, 15, 60, ?

(a) 22
(b) 21
(c) 23
(d) 19

Q114. According to the information received till March 2022, who was the Leader of the House in the Rajya Sabha?

(a) Piyush Goyal
(b) Harivansha
(c) Thawar Chand Gehlot
(d) M. Venkaiah Naidu

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Q115. If 28957.5 ÷ 268.125 = 108, then 289.575 ÷ 2681.25 is equal to :

(a) 0.0108
(b) 1.08
(c) 0.108
(d) 10.8

Q116. What is the definition of fiscal deficit?

(a) Expected increase in inflation, and expected appreciation of currency
(b) Rise in inflation inside the Indian economy
(c) Excess of total expenditure over total receipts excluding debt
(d) Expected reduction in inflation, and expected currency appreciation

Q117. Which of the following assumptions of the given statement are valid ?

Statement:

They will leave in an hour, but now I have to learn my lessons, so I won't be able to say goodbye to them.

Assumptions:

1. Lessons will take over an hour to complete.
2. The departing people are not expecting me to say goodbye to them before departure.

(a) Only assumption 2 is valid
(b) Only assumption 1 is valid
(c) Both 1 and 2 are invalid
(d) Both 1 and 2 are valid

Q118. Which of the following states is the cradle of the folk music traditions of Saikuti Zai?

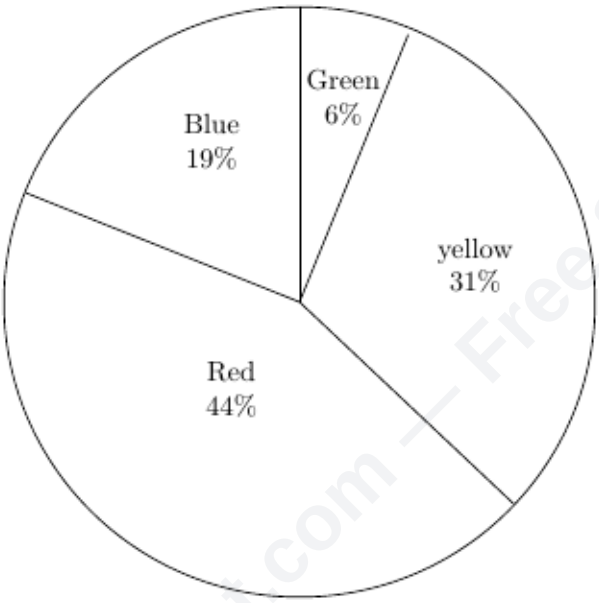
(a) Orissa
(b) Mizoram
(c) Telangana
(d) Goa

Q119. A group of 8 students, J, K, L, M, N, O, P and Q are sitting in two parallel rows facing each other. Each row has four students. Q and N are facing each other. Q is an immediate neighbor of both P and O. K is sitting to the immediate left of O. K and J are diagonally opposite. M and N are not immediate neighbours of each other. Who is in front of L?

(a) Q
(b) N
(c) K
(d) O

Q120. The following pie chart shows the expenditure distribution of a party. The blue part represents decoration expenses, the green part represents DJ expenses, the red part represents food expenses and the yellow part represents venue expenses. Study the pie chart and answer the following question.

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How much was spent on decoration and DJ together if the total expenditure was Rs. 32,700?

(a) Rs. 8,175
(b) Rs. 7,725
(c) Rs. 8,347
(d) Rs. 7,359

ANSWER KEY

1	d	2	b	3	d	4	a	5	c	6	d	7	a	8	b	9	a	10	d
11	a	12	b	13	c	14	a	15	d	16	a	17	d	18	c	19	b	20	d
21	d	22	c	23	c	24	d	25	c	26	b	27	a	28	b	29	b	30	a
31	c	32	b	33	a	34	b	35	b	36	a	37	b	38	d	39	b	40	b
41	b	42	b	43	d	44	c	45	c	46	a	47	c	48	a	49	d	50	d
51	c	52	c	53	d	54	c	55	c	56	a	57	b	58	b	59	d	60	a
61	d	62	a	63	c	64	b	65	b	66	a	67	c	68	c	69	d	70	c
71	a	72	d	73	b	74	b	75	d	76	a	77	a	78	a	79	b	80	d
81	d	82	a	83	c	84	a	85	a	86	b	87	b	88	d	89	d	90	b
91	a	92	c	93	a	94	a	95	d	96	c	97	a	98	a	99	a	100	b
101	d	102	c	103	d	104	a	105	c	106	a	107	d	108	d	109	b	110	d
111	c	112	c	113	b	114	a	115	c	116	c	117	b	118	b	119	d	120	a

SOLUTIONS

Q1. Answer: (d) ZCM

The positional values of English alphabet is as follows:

The pattern followed here is as follows:

Hence, ZCM is the correct answer.

Q2. Answer: (b) Madhya Pradesh

The correct answer is Madhya Pradesh.

Key PointsMadhya Pradesh

• Madhya Pradesh has the highest infant mortality rate.

• In Madhya Pradesh, the infant mortality rate is 52 in rural areas and 36 in urban areas.

• It has the highest infant mortality rate (48/1000) in the country.

• In the year 2019, the infant mortality rate among boys in the state was 51 per 1,000 live boys and the infant mortality rate in girls was 46 per 1,000 live girls.

• Out of 1,000 live births in Madhya Pradesh, 26 infants die within the first seven days of birth.

Additional InformationUttar Pradesh

• In Uttar Pradesh, the Neonatal Mortality Rate (NNMR) in rural and urban areas was 45.1% in 2015-2016 and 35.7% in 2020-2021.

• The Infant Mortality Rate (IMR) in UP is currently 50.4%, while it was 63.5% earlier.

• The infection rate was 15 percent in children before the year 2017, while it is now 5.6%.

Bihar

• The infant mortality rate in Bihar is now decreasing year after year.

• The death rate has now come down to 27%.

• The infant mortality rate in Bihar is 1% less than the infant mortality rate of the country.

Chhattishgarh

• In the year 2020-21, there has been a big reduction in the neonatal mortality rate, infant mortality rate and mortality rate of children up to five years in Chhattisgarh.

• Both neonatal and infant mortality rates have come down by 23% and 18%.

• There has been a significant drop of 22% in the mortality rate of children up to five years of age.

Q3. Answer: (d) Mahatma Gandhi

The correct answer is Mahatma Gandhi.

Key PointsHarijan Sevak Sangh

• Harijan Sevak Sangh was founded by Mahatma Gandhi on 30 September 1932 as an all-India organization.

• Earlier this organization was named Untouchability Prevention Sangh, which was renamed Harijan Sevak Sangh on 13 September 1933.

• Its first president was famous industrialist Ghanshyamdas Birla and secretary Amritlal Vithaldas Thakkar.

• The headquarter of the Sangh is at Gandhi Ashram, Kingsway Camp, Delhi.

• Its branches are in almost all the states in India.

• Presently its chairman is Shankar Kumar Sanyal.

Additional InformationNarendra Dev

• Acharya Narendra Dev was a prominent freedom fighter, journalist, litterateur, and educationist in India.

• He was the main theorist of the Congress Socialist Party.

• Acharya Narendra Dev, the master of extraordinary talent and personality, was a high-quality teacher and a great educationist in the form of a teacher.

• After becoming the Acharya of Kashi Vidyapeeth, this title became a part of his name.

• Their passion to liberate the country drew him into the freedom movement and the economic condition of India and the plight of the poor made him a socialist.

Jawaharlal Nehru

• Jawaharlal Nehru was the first Prime Minister of India and a central figure in Indian politics before and after independence.

• Under the tutelage of Mahatma Gandhi, he emerged as the supreme leader of the Indian independence movement and ruled India from its establishment as an independent nation in 1947 until his death in 1964.

• He is considered the architect of the modern Indian nation-state – a sovereign, socialist, secular, and democratic republic.

Aruna Asif Ali

• Aruna Asif Ali was born in a Bengali family on 16 July 1909 in a place called 'Kalka' in Haryana, then Punjab.

• Her family was Brahmin by caste.

• Her name was 'Aruna Ganguly'.

• After completing her studies in Lahore and Nainital, she became a teacher and started teaching at Gokhale Memorial College, Kolkata.

Q4. Answer: (a) 1942

The correct answer is 1942.

Key Points

• Azad Hind Radio

• In order to spread anti-British propaganda, Netaji Subhas Chandra Bose founded the Azad Hind Radio in Berlin, Germany.

• In 1942 the Azad Hind Radio Service as part of Germany's radio service was started.

• The first transmission took place on January 7, 1942.

• Its headquarters were first located in Germany, but they were later moved to Singapore and then Myanmar.

• A.C.N. Nambiar, the leader of the Indian Legion in Germany, took over the organization's operations in Germany after Bose's passing.

Additional Information

• The shows were broadcast in English, Telugu, Tamil, Gujarati, Marathi, Bengali, Pushto, and Tamil.

• Bose used to declare war on the British government on October 23, 1942.

• The radio programmes were rebroadcast in 2009.

• On the radio, Bose referred to the All India Radio as the "Anti-Indian Radio" and the British Broadcasting Corporation as the "Bluff and Bluster Corporation" respectively.

Q5. Answer: (c) Rs. 6440

Given:

Principal = Rs. 3, 680

Rate of interest = 12.5% = 1/8

Time = 6 years

Formula used:

Simple interest = (Principal × time × rate)/100

Calculation:

Simple interest = (3680 × 12.5 × 6)/100

=> S.I = 3680 × (1/8) × 6

=> S.I = 2760

Therefore The amount after maturity

=> (AMOUNT + S.I)

=> Rs. (3,680 + 2,760)

=> Rs. 6440

Therefore Hence, the amount after maturity = Rs. 6440.

Q6. Answer: (d) −2, −16

Shortcut Trick

Divide 441 by 9 directly to get 49.

Taking the square root of both sides: x + 9 = ±7.

Calculate the two values: x = −9 + 7 and x = −9 − 7.

The resulting roots are −2 and −16.

Therefore The correct answer is −2, −16.

Alternate Method

Given Equation: 9(x + 9)2 = 441

Method: Solve the quadratic equation by isolating the squared term and taking square roots.

=> 9(x + 9)2 = 441

=> (x + 9)2 = 441 ÷ 9

=> (x + 9)2 = 49

=> x + 9 = √49 or x + 9 = −√49

=> x + 9 = 7 or x + 9 = −7

=> x = 7 − 9 or x = −7 − 9

=> x = −2 or x = −16

Therefore The correct answer is −2, −16.

Additional Information

Square Root Property

If u2 = d, then u = ±√d. This property is used to solve equations of the form (x − h)2 = k by taking the root of both sides.

Quadratic Formula

For any equation ax2 + bx + c = 0, the roots can be found using x = [−b ± √(b2 − 4ac)] ÷ 2a.

Nature of Roots

The discriminant D = b2 − 4ac determines the nature. If D > 0 and a perfect square, roots are real, rational, and unequal.

Q7. Answer: (a) 17

Given :

X does a work in 84 days

Y does the same work with 50 % less efficiency i.e., in 168 days

And Z takes 28 days to do the same work

Calculations :

1 Day work of X = 1/84 th part of work

1 Day work of Y = 1/168 th part of work

1 Day work of Z = 1/28 th part of work

1 Day work of X and Y together = 1/84+1/168=1/56 th part of work

1 Day work of X, Y and Z together = 1/84+1/168+1/28 = 3/56 th part of work

For 3 days, Y worked alone and completed = 3×1/68 = 1/56 th part of work

For next 4 days, X and Y worked together and completed = 4×1/56 = 1/14 th part of work

Now, remaining work after 7 days

=> [1 - { 1/56+1/14 }]

=> 1 - (5/56)

=> (51/56) the part of work

The remaining work is done by joined team of X, Y and Z in

=> 51/56×56/3

=> 17 days

Hence, Z works for 17 days to complete the work.

Q8. Answer: (b) 4/7

GIVEN:

Number of girls =¾ of the number of boys

2/3rd number of girls likes mango juice

1/2 number of boys like mango juice

CONCEPT USED:

Fraction- It is a part of a whole .It is expressed as a quotient i.e.=numerator/ denominator

CALCULATION:

Let the total number of boys be 400

=>number of girls =300 (3/4X400=300)

=>number of girls like mango juice=2/3 x 300=200

=>number of boys like mango juice=1/2 x 400=200

=> Total number of girls and boys who like mango juice=(200+200)=400

=>Total number of girls and boys=700

Therefore Fraction of the total number of girls and boys who like mango juice= total number of girls and boys who like mango juice/total number of boys and girls = 400/700 = 4/7

Q9. Answer: (a) 126

Shortcut Trick

Perimeter of Rectangle = 2 × (56 + 42) = 196 cm.

Side of Square = 196 ÷ 4 = 49 cm.

Diameter of Semicircle = 49 cm => Radius (r) = 24.5 cm.

Perimeter of Semicircle = (π + 2) × r = (22/7 + 2) × 24.5

Perimeter = (36/7) × 24.5 = 36 × 3.5 = 126 cm.

Therefore The correct answer is 126 cm.

Alternate Method

Given:

Length of Rectangle (L) = 56 cm

Breadth of Rectangle (B) = 42 cm

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Perimeter of Square = Perimeter of Rectangle

Diameter of Semicircle = Side of Square

Formula Used:

Perimeter of Rectangle = 2 × (L + B)

Perimeter of Square = 4 × Side (a)

Perimeter of Semicircle = πr + 2r (where r = radius)

Calculations:

=> Perimeter of Rectangle = 2 × (56 + 42) = 2 × 98 = 196 cm

=> 4 × Side of Square = 196 cm

=> Side of Square (a) = 196 ÷ 4 = 49 cm

=> Diameter of Semicircle = 49 cm

=> Radius of Semicircle (r) = 49/2 = 24.5 cm

=> Perimeter of Semicircle = (π × r) + 2r

=> Perimeter = (22/7 × 24.5) + (2 × 24.5)

=> Perimeter = (22 × 3.5) + 49

=> Perimeter = 77 + 49 = 126 cm

Therefore The correct answer is 126 cm.

Additional Information

Perimeter of a Semicircle

The total boundary of a semicircle includes the curved arc (πr) and the straight diameter (2r). Total Perimeter = πr + 2r.

Area of a Semicircle

The area is exactly half of the area of a full circle. Area = (1/2) × πr².

Square and Rectangle properties

For a square, Area = a² and Perimeter = 4a. For a rectangle, Area = L × B and Perimeter = 2(L + B).

Q10. Answer: (d) China

The correct answer is China.

Key Points

• World Steel Association, 2020

• The worldwide trade organisation for the iron and steel sector is known as the World Steel Association or worldsteel.

• With participants from every significant nation that produces steel, the group is among the biggest and most active in its field.

• The amount of crude steel produced globally in 2020 was 1877.5 million tonnes (Mt), up 0.2% from the year before.

• China now produces the most steel, with 57 percent of global steel output in 2020.

• China produced more than a billion tonnes of steel for the first time in 2020.

• In that year, China Baowu Group produced over 115 million metric tonnes of basic steel.

• China was only the fourth-largest steel manufacturer in the world in 1990, after Japan, the US, and the USSR.

Additional Information

• World Steel Association is a nonprofit organisation with its main office in Brussels, Belgium, and a second headquater in Beijing, China.

• One of the most useful and necessary materials in the world is steel, a metal that is an alloy of 97.9–99.98% iron and 2.1–0.002% carbon.

• The manufacturing of steel is one of the most energy- and carbon-intensive businesses in the world, as per the U.S. Energy Information Administration.

• Around 7% of the world's carbon dioxide emissions in 2020 came from the manufacture of steel.

Country	Steel production in 2020	Steel production in 2019
India	99.6 MT	111.4 MT
Japan	83.2 MT	99.3 MT
The US	72.7 MT	87.8 MT

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Q11. Answer: (a) AAAA

The positional values of English alphabet is as follows:

The pattern followed here is:

Hence, AAAA is the correct answer.

Q12. Answer: (b) Karuppur Kalamkari Painting

The correct answer is Karuppur Kalamkari Painting.

Key Points

• The traditional dye-painted figurine called Karuppur Kalamkari painting, and Kallakuruchi wood carving have received the Geographical Indication tag.

• Karuppur Kalamkari paintings are done in Thanjavur region.

• These are traditional dye-painted figurative and patterned fabrics.

• They are roof cloth, umbrella cover and chariot cover etc.

• The Thanjavur tradition of Kalamkari had chhatris, umbrella covers, thombai (cylindrical hangings), and 'thoranams' (door hangings) with motifs of peacocks, swans, flowers and images of deities.

• They are used in temples and monasteries.

Additional Information

• GI is a tag which is used to identify the products originating from a certain geographical area and having certain characteristics.

• This tag is governed by the Geographical Indications (Registration and Protection) Act, 1999 in India.

• Geographical Indications Registry, Chennai issues these tags.

• This tag is valid for a period of 10 years.

Q13. Answer: (c) 5/9

Given:

5 − 10 ÷ 5 × 2 − [12 ÷ 6 of {5 × 6 ÷ (6 − 9) + 13} × (8 ÷ 4 of 3)]

Concept Used:

Calculation:

=> 5 − 10 ÷ 5 × 2 − [12 ÷ 6 of {5 × 6 ÷ (6 − 9) + 13} × (8 ÷ 4 of 3)]

=> 5 − 10 ÷ 5 × 2 − [12 ÷ 6 of {5 × 6 ÷ (6 − 9) + 13} × (8 ÷ 12)]

=> 5 − 10 ÷ 5 × 2 − [12 ÷ 6 of {5 × 6 ÷ (–3) + 13} × 2/3]

=> 5 − 10 ÷ 5 × 2 − [12 ÷ 6 of {5 × (–2) + 13} × 2/3]

=> 5 – 10 ÷ 5 × 2 – [12 ÷ (6 × 3) × 2/3]

=> 5 – 10 ÷ 5 × 2 – [12 × 1/18 × 2/3]

=> 5 – 10 ÷ 5 × 2 – 4/9

=> 5 – 2 × 2 – 4/9

=> 5 – 4 – 4/9

=> 1 – 4/9 = 5/9

Hence, the simplified value of the expression is 5/9

Q14. Answer: (a) El Salvador

The correct answer is El Salvador.

Key Points

• The Central American country of El Salvador has approved a bill to make the world's largest and most popular cryptocurrency, bitcoin, the legal currency of the country.

• It has become the first country in the world to declare bitcoin as a legal currency.

• The official currency of El Salvador is the US Dollar.

• The US dollar will continue to be the legal currency in the country as before and the use of bitcoin will be optional.

• In El-Salvador's parliament, bitcoin was approved by a vote of 84 to 62.

• After this announcement, the price of bitcoin increased from $33.98 to $34,398.

Additional Information

• Bitcoin is a type of digital currency, or cryptocurrency, that enables instant payments.

• Bitcoin was introduced to the world in the year 2009.

• It is based on an open-source protocol.

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• It is not issued by any central authority.

Q15. Answer: (d) 15

Given:

Symbol	÷	×	•	•
Meaning	•	•	×	÷

BODMAS Rule:

After replacing the mathematical signs, we get:

=> 40 ÷ 20 × 6 - 2 + 5

=> 2 × 6 - 2 + 5

=> 12 - 2 + 5

=> 17 - 2

=> 15

Hence, 15 is the correct answer.

Q16. Answer: (a) KNF

Alphabetical Sheet with its Place Value.

Hence, KNF is the correct answer.

Q17. Answer: (d) Orissa

The solution is in Hindi. Read it online.

Q18. Answer: (c) IX

The correct answer is IX.

Key Points

• Panchayati Raj in India

• In contrast to urban and suburban municipalities, villages in rural India are governed locally through the Panchayati Raj (Council of Five Officials) system.

• It comprises of the Panchayati Raj Institutions (PRIs), which enable villages to practice self-government.

• Their mission is to "strengthen social justice, advance economic growth, and implement Central and State Government Schemes, including those 29 issues stated in the Eleventh Schedule."

• The provision of the Indian Constitution that deals with Panchayats is Part IX.

• It indicates that there are three levels of PRIs in states or Union Territories with more than two million residents:

• the Mandal Parishad, Block Samiti, or Panchayat Samiti at the block level

• the Gram Panchayats at the village level and

• the Zila Parishad at the district level.

• There are only two levels of PRIs in states or Union Territories with less than two million residents.

Additional Information

• Every five years, members of the Panchayats at all levels are elected.

• Scheduled Castes (SCs) and Scheduled Tribes (STs) must be represented in the Panchayats in an equal number to the general population.

• Women must hold at least one-third of all seats and chairperson positions, and in some states, up to 50% of all seats and chairperson positions.

• The historical Panchayati raj system of the Indian subcontinent, which is also present in Pakistan, Bangladesh, and Nepal, served as the basis for the current Panchayati Raj system, which was first implemented in India by the 73rd constitutional amendment in 1992.

• The Panchayati Raj system is currently exist in all states with the exception of Nagaland, Meghalaya, and Mizoram, as well as in all Union Territories with the exception of Delhi.

Q19. Answer: (b) 8

Explanation:

1) Students are sitting in a row facing North.

2) B sits immediate next to both G and D.

Case 1

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Case 2

3) H sits third to the left of B. H sits second to the right of A.

Case 1

Case 2

4) C sits immediate next to both H and G.

5) A and F are sitting at the extreme ends of the row, and F sits second to the right of B.

Hence, there are 8 number of students in the row.

Q20. Answer: (d) Anuj

Friends : Purva, Roshan, Vibhor, Luna and Anuj.

T-shirts : Red, Black, Purple, Yellow and Blue.

Allergic things : Nuts, dairy, cats, fish and dust.

1) Luna is allergic to cats but is not wearing a purple T-shirt. Luna is wearing a blue T-shirt.

Friends	T-shirt	Allergy from
Luna	Blue	Cats

2) The one wearing a yellow T-shirt has dust allergy.

Friends	T-shirt	Allergy from
Luna	Blue	Cats
	Yellow	Dust

3) Purva is wearing a black t-shirt but is not allergic to dairy or fish.

Friends	T-shirt	Allergy from
Luna	Blue	Cats
	Yellow	Dust
Purva	Black	

4) Vibhor is wearing a purple T-shirt but does not have fish allergy. Roshan is wearing a red T-shirt.

Friends	T-shirt	Allergy from
Luna	Blue	Cats
	Yellow	Dust
Purva	Black	
Vibhor	Purple	
Roshan	Red	

Thus, possible arrangement is :

• (Purva is not allergic to dairy or fish it means Purva is allergic to nuts)

• (Vibhor does not have fish allergy it means he has allergy from dairy)

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Friends	T-shirt	Allergy from
Luna	Blue	Cats
Anuj	Yellow	Dust
Purva	Black	Nuts
Vibhor	Purple	Dairy
Roshan	Red	Fish

Hence, Anuj is the correct answer.

Q21. Answer: (d) 90000 sq.m

Given :

Total Cost of cultivation = Rs. 2880

Rate = Rs. 320 per hectare

Concept :

Area of field × Rate = Total cost of cultivation

Calculations :

According to question,

Area of field = (Total cost)/Rate

Area = 2880/320

Area = 9 hectare = 9 × (10000) sq.m = 90000 sq.m

Hence, Area of the field is 90000 sq.m.

Q22. Answer: (c) Japan

The correct answer is Japan.

Key PointsShogatsu

• Shogatsu falls on the Japanese New Year's celebration, the familiar date of January 1 according to the Gregorian calendar, but in Japan the festivities stretch out before and after.

• It is considered one of the biggest festivals in Japan.

• Shogatsu is celebrated by enjoying several traditional foods that vary between regions in Japan.

• Many people start the new year by eating soba (buckwheat) noodles at midnight for good health.

• At dawn, the Emperor of Japan prays for the nation.

Additional InformationBrazil

• Brazil is one of the largest countries in South America.

• Brazilians are very much rooted in their cultural values and beliefs.

• For Brazilians, New Year is like a festival celebrated with full enthusiasm and fervor wrapped in traditional values.

• In Brazil, the new year is also pronounced as anno nove or in the Brazilian language it is celebrated on a large scale.

• They also welcome the beginning of the summer season.

• After their traditional festivities, Brazilians take the time to celebrate and descend upon pubs, discotheques, clubs and party halls, etc. to see the hordes of locals and tourists.

New Zealand

• New Zealand is one of the first countries in the world to welcome the New Year.

• Many people use New Year's Day to relax after celebrating New Year's Eve and New Year's countdown.

• Some visit family and friends, while others participate in events such as New Year's horse racing carnivals and summer fairs.

• Cricket is a sporting event that many New Zealanders watch during the New Year's holiday.

France

• Many people in France start New Year's Day at midnight by celebrating with friends or family members.

• Public and private fireworks displays are common.

• Many people drink champagne, sparkling white wine or hot wine.

Q23. Answer: (c) Restrictions on Large-scale industries

The correct answer is Restrictions on Large-scale industries.

Key Points

Open Economy

• An open economy is one that participates in international trade.

• In an open economy, trades involves in both the export and import of products and services in addition to conducting business within their own nation.

• Due to the fact that this economy consists of the household sector, business sector, government sector, and foreign sector, it is sometimes referred to as a "four sector economy."

• In the present period, every economy of the world is an open economy.

• Features of Open Economy:

• An open economy has economic relations to the rest of the globe.

• A country with an open economy trades goods and services with other nations.

• An open economy borrows money from other nations and lends it out as well.

• Delicensing of Industries

• Ordinary citizens of an open economy are free to travel and work anywhere they want within that economy's domestic boundaries.

Additional Information

• In contrast to open economy, closed economy is entirely self-sufficient; no imports are brought in and no exports are sent out.

• As the world becomes more globally interconnected, the economy is becoming more open.

• "Open economy" is defined by GN Mankiw as "an economy that freely interacts with other economies around the world."

• Few examples of open economy are:

• India

• Hongkong

• USA

• Finland

• Singapore

Q24. Answer: (d) 1536 sq.m

Given:

Diagonal (D1) = 48 m

Diagonal (D2) = 64 m

Formula used:

Area of the Rhombus = 1/2 × (D1 × D2)

Calculations:

According to the question,

=> Area = 1/2 × (48 × 64)

=> Area = 3072/2 = 1536 m²

Therefore The area of a rhombus is 1536 m2.

Q25. Answer: (c) Papua new guinea

The correct answer is Papua new guinea.

Key PointsPapua new guinea

• Papua New Guinea has the largest number of languages spoken in the world, more than 800.

• It is the number one country in the world in the index of diversity in language and dialect.

• If you choose any two people in this country, then one thing will be decided, the mother tongue of both will be different.

• The language of business in the country is English and the majority of the people living here are Australians.

• According to Clara Raven, you'll also hear Tok Paison, which is mixed English and is one of the country's four national official languages.

• Tok Paisan is the fourth language apart from English, Hirimoto and Papua New Guinea.

Additional InformationTop 10 Countries With Most Languages

Sr. No.	Country Names	List of Languages
1	Papua new guinea	840
2	Indonesia	711
3	Nigeria	517

4	India	456
5	United States of America	328
6	Australia	312
7	China	309
8	Mexico	292
9	Cameroon	274
10	Brazil	221

Q26. Answer: (b) 12 : 7

Given:

Total sum sehwag and sachin have = Rs. 950

Calculations:

Let the money sachin had initially be Rs. X

Then the money sehwag had initially be Rs. (950 - x)

Sachin takes Rs. 250 from Sehwag then,

=> x + 250 = 950 - x

=> x + x = 950 - 250

=> 2x = 700

=> x = 350

Hence, Sachin had initially Rs. 350

Therefore, the money sehwag had initially is

=> Rs. (950 - 350)

=> Rs. 600

Now, the ratio is = 350 : 600 = 7 : 12

Hence, the required ratio is 12 : 7.

Q27. Answer: (a) Salman Rushdie

The correct answer is Salman Rushdie.

Key Points

• 'Midnight's Children'

• The book Midnight's Children was written by Salman Rushdie in 1981.

• Bill Botten created the cover for the book's publication by Jonathan Cape.

• It depicts the evolution of India from British colonial authority to independence and division.

• It is regarded as a prime example of postmodern, magical realist, and postcolonial literature.

• Saleem Sinai, who serves as the narrative's main protagonist, tells the tale, which is based on real historical occurrences.

• Fictional reports are written in a self-reflexive manner to preserve history.

• In 1981, Midnight's Children earned both the James Tait Black Memorial Prize and the Booker Prize.

Additional Information

• Other achievements

• To celebrate the Booker Prize's 25th and 40th anniversaries, it was given the "Booker of Bookers" Prize and the best-ever prize winners in 1993 and 2008.

• The book was included in the BBC's The Big Read survey of the UK's "best-loved novels" in 2003.

• The Penguin Books publication's, list of the Great Books of the 20th Century also included it.

• The book was chosen as one of the 70 titles in the Big Jubilee Read in 2022, a celebration of Commonwealth writers' writing for the Platinum Jubilee of Queen Elizabeth II.

Q28. Answer: (b) E10

The correct answer is E10.

Key Points

• A cell reference or cell address is a combination of a column letter and a row number that identifies a cell on a worksheet.

• ADDRESS can return an address in relative, mixed, or absolute format, and can be used to construct a cell reference inside a formula.

• Example : ADDRESS(1,1) returns A1 (column is A and row is 1).

Additional Information

• The CELL function returns information about the formatting, location, or contents of a cell.

MS-Excel Worksheets

• The term Worksheet used in Excel documents is a collection of cells organized in rows and columns.

• It is the working surface you interact with to enter data.

• Each worksheet contains 1048576 rows and 16384 columns and serves as a giant table that allows you to organize information.

Q29. Answer: (b) A

Explanation:

Statement 1: Shamita is taller than Rekha. Rekha is shorter than Tanya.

• This implies Rekha < Tanya /Shamita.

• The shortest person is Rekha as per Statement 1.

Statement 2:

• Rekha is shorter than Surbhi.

• Rekha < Surbhi

• Surbhi is taller than Shamita.

• Surbhi < Shamita

• Tanya is shorter than Surbhi.

• Tanya < Surbhi

• Combining all these,

• Rekha / Tanya < Surbhi < Shamita

• The shortest person can't be determined as per Statement 2.

Hence, A is the correct answer.

Q30. Answer: (a) 46.6%

The correct answer is 46.6%.

Key PointsOxygen

• It is by far the most abundant element in the Earth's crust.

• The approximate percentage, by weight, of oxygen in the earth's crust is 46.6%.

• It makes up almost half of the Earth's crust in the form of oxides.

• Oxygen and silicon account for 75% of the weight of the Earth's crust.

Additional Information

• Carbon makes up only about 0.025 per cent of Earth's crust and it forms more compounds than all the other elements combined.

• Hydrogen makes 0.14% weight of Earth's crust.

Q31. Answer: (c) Monu is sitting exactly between Vinod and Pushpa.

Persons : Puneet, Monu, Jyoti, Umesh, Tapsi, Vinod, Pushpa and Saha

1) They are sitting at a square table in such a way that four of them are sitting at four corners of the table, while the other four are sitting in the middle of each of four sides of the table. The four who are sitting at the corners of the table are facing the centre, whereas those who are sitting in the middle of the sides of the table are facing outside.

2) Puneet, who is facing the centre, is sitting third to the right of Vinod.

3) Only one person is sitting between Vinod and Pushpa.

Case 1:

Case 2:

4) Umesh sits second to the right of Monu. Monu is facing the centre. Tapsi, who is facing centre, is not an immediate neighbour of Vinod.

5) Jyoti is not an immediate neighbour of Puneet.

Possible seating arrangement:

Hence, Monu is sitting exactly between Vinod and Pushpa is the correct answer.

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Q32. Answer: (b) Quo Warranto

The correct answer is Quo Warranto.

Key PointsQuo Warranto

• Quo Warranto is a petition through which a person is asked under what authority or power he has acted or taken a decision.

• The purpose of this writ is to restrain a person from holding a public office which he is not entitled.

• When a person starts acting as an officer of which he is not legally entitled, the court asks by this writ on what grounds he is acting in this position.

• This writ prohibits a person or an officer from performing an office for which he is not authorized, and thus, this writ prohibits the taking of public office by any person.

Additional InformationCertiorari

• Certiorari, in common law jurisdiction, a writ issued by a superior court to re-examine the action of a lower court.

• A certificate is also issued by an appellate court to obtain information about the case pending before it.

• The writ of certiorari was first an original writ from the Court of Queen's Bench in England ordering the judges of inferior courts to produce certain records.

• The litigation was later expanded to include chancery (equity) courts.

• The writ was abolished in 1938, but the High Court retained the right to order authenticity.

• Such orders have been useful in reviewing decisions of administrative courts that have no regular means of appeal, particularly in reviewing questions of error in the admission and exclusion of evidence.

Habeas Corpus

• Habeas corpus is a type of legal mandate by which a person arrested for illegal reasons can be released.

• A habeas corpus mandate is an order issued by the court to the police or other arresting state body to produce the prisoner in court and to report the charges against him to the court.

• This order can be obtained by the arrested person himself or any of his associates by pleading with the court.

In the olden days, there was no restraint on the police and if they arrested any ordinary citizen, they were not held accountable to anyone.

• The principle of habeas corpus gives protection to ordinary citizens by stopping such arbitrariness.

Prohibition

• Prohibition is an equitable remedy, a remedy that originated in the English courts.

• When a court employs an extraordinary measure of prohibition, it directs the conduct of a party, and does so with the support of all its coercive powers.

• A party that fails to comply with an prohibition faces criminal or civil penalties, including possible monetary sanctions and even imprisonment.

Q33. Answer: (a) First

The correct answer is First.

Key Points

• Astrophysics (IOAA) 2021, organized by Colombia, and held in online mode from 14 to 21 November 2021.

• India was placed in the top position, jointly with Thailand and Russia in the country-wise medals tally.

• Four of the five Indian students participating in the competition won the gold medal and the fifth the silver.

Additional Information

• International Olympiad on Astronomy and Astrophysics (IOAA)

• An international competition for high-school students along the lines of the other International Science Olympiads, covering the fields of Astronomy and Astrophysics.

• The next Event will be the 15th IOAA, to be hosted at Kutaisi in Georgia from 14th to 22nd August 2022.

Q34. Answer: (b) 20%

Shortcut Trick

Let initial CP1 = 100 units. Initial SP1 = 137.5 units (at 37.5% profit).

New CP2 = 100 − 12.5 = 87.5 units. New SP2 = 87.5 × 1.1 = 96.25 units.

Difference in SP = 137.5 − 96.25 = 41.25 units. Given 41.25 units = Rs. 330.

1 unit = 330 ÷ 41.25 = 8. So, Original CP = 100 × 8 = Rs. 800.

Percentage less than Rs. 1,000 = [(1,000 − 800) ÷ 1,000] × 100 = 20%.

Therefore The correct answer is 20%.

Alternate Method

Given → Initial profit = 37.5%, CP reduction = 12.5%, SP reduction = Rs. 330, New profit = 10%.
Formulas: SP = CP × (100 + P%) ÷ 100 | Percentage difference = (Diff ÷ Base) × 100.
=> Let Initial CP be 100x. Then Initial SP = 137.5x.
=> New CP = 100x − 12.5% of 100x = 87.5x.
=> New SP = 87.5x + 10% of 87.5x = 87.5x + 8.75x = 96.25x.
=> Difference in SP = 137.5x − 96.25x = 41.25x.
=> According to question: 41.25x = 330 => x = 330 ÷ 41.25 = 8.
=> Original CP = 100 × 8 = Rs. 800.
=> Required Percent = [(1,000 − 800) ÷ 1,000] × 100 = (200 ÷ 1,000) × 100 = 20%.
Therefore The correct answer is 20%.
Additional Information
Fractional Conversion
37.5% can be written as 3/8. This often simplifies calculations involving Cost Price and Selling Price ratios.
Percentage Comparison
To find by what percent A is less than B, use formula: [(B − A) ÷ B] × 100.

Q35. Answer: (b) Aluminium

The correct answer is Aluminium.
Key Points
Aluminium
• It is the third most abundant element, and the most abundant metal, in the Earth's crust.
• The global production of aluminium in 2016 was 58.8 million metric tons.
• It is abundant because it is never found free in nature.
Additional Information
• Barium
• Barium is a soft, silvery alkaline earth metal.
• Because of its high chemical reactivity, barium is never found in nature as a free element.
• The most common minerals of barium are baryte and witherite.
• Titanium
• Found in nature only as an oxide.
• It can be reduced to produce a lustrous transition metal with a silver colour, low density, and high strength, resistant to corrosion in seawater, aqua regia, and chlorine.
• Manganese
• It is a hard, brittle, silvery metal, often found in minerals in combination with iron.

Q36. Answer: (a) 3130

Explanation:
=> 5^1+ 1 = 6
=> 5^2+ 2 = 27
=> 5^3+ 3 = 128
=> 5^4+ 4 = 629
=> 5^5+ 5 = 3130
=> 5^n+ n general term
Hence, 3130 is the correct answer.

Q37. Answer: (b) RO YO PO

Given:
• 'You are bad' is written as 'YO LO PO'
• 'Schools are bad' is written as 'NO PO YO'
• 'You are human' is written as 'LO PO RO'
Thus, bad is coded as YO, are is coded as PO and human is coded as RO.
Hence, RO YO PO is the correct answer.

Q38. Answer: (d) 11

Given:

505xy is divisible by 11 & 21

Concept:

When 505xy is divisible by 11 & 21, it will also be divisible by the LCM of 11 & 21.

Dividend = Divisor x Quotient + Remainder

Calculation:

LCM (11, 21) = 231

By taking the largest 5-digit number 50599 and divide it by 231.

=> 50599 = 231 × 219 + 10

=> 50599 = 50589 + 10

=> 50599 - 10 = 50589 (completely divisible by 231)

=> 50589 = 505xy (where x = 8, y = 9)

Now the value of (7x - 5y),

=> (7x - 5y) = 7 × 8 - 5 × 9

=> 56 - 45 = 11

Therefore The value of (7x - 5y) is 11.

Q39. Answer: (b) Kavitha Rao

The correct answer is Kavitha Rao.

Key Points

• Kavitha Rao is the author of "Lady Doctors: The untold stories of India's first women in Medicine.

• Kavitha Rao unearths the extraordinary stories of six women from the 1860s to the 1930s, who defied the idea that they were unfit for medicine by virtue of their gender.

• This book recovers the stories of India’s first women doctors, often ignored by history. In this excerpt from Kavitha Rao’s ‘Lady Doctors: The Untold Stories of India’s First Women in Medicine, the story of Rukhmabai Raut.

Additional Information

• One of the books by Jairam Naresh is "Light of Asia".

• Kunal Vasu is the Author of Kalkatta.

• The God of Small Thing is Written by Arundhati Roy.

Q40. Answer: (b) 17 7/9 %

Shortcut Trick

Given Selling Price (SP) = Rs. 222 and Loss = Rs. 48.

Calculate Cost Price (CP) = SP + Loss = 222 + 48 = Rs. 270.

Loss percentage is calculated on Cost Price.

Loss% = (48 ÷ 270) × 100 = (8 ÷ 45) × 100 = 800 ÷ 45 = 160 ÷ 9 = 17 7/9%.

Therefore The correct answer is 17 7/9%.

Alternate Method

Given: SP = Rs. 222, Loss = Rs. 48.

Formulas: CP = SP + Loss | Loss% = (Loss ÷ CP) × 100

=> Cost Price (CP) = 222 + 48 = Rs. 270

=> Loss% = (48 ÷ 270) × 100

=> Loss% = (16 ÷ 90) × 100 = 160 ÷ 9 = 17 7/9%

Therefore The correct answer is 17 7/9%.

Additional Information

Loss and Cost Price Relationship

When an item is sold at a loss, the Cost Price is always greater than the Selling Price. CP = SP + Loss.

Percentage Calculation

Profit or Loss percentages are always calculated on the Cost Price unless specifically stated otherwise in the problem.

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Q41. Answer: (b) Article 15

The correct is Article 15.

Key Points

• Article 15 of the Constitution of India forbids discrimination on grounds only of religion, race, caste, sex, or place of birth.

• The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth, or any of them.

• Nothing in this article shall prevent the State from making any special provision for women and children.

• Nothing in this article or in clause (2) of article 29 shall prevent the State from making any special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes.

Additional Information

• Article 16 in The Constitution Of India 1949. Equality of opportunity in matters of public employment. There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the State.

• In Article 19, Everyone has the right to freedom of opinion and expression; this right includes the freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

• In Article 17, Untouchability is abolished and its practice in any form is forbidden. The enforcement of any disability arising out of Untouchability shall be an offence in accordance with the law.

Q42. Answer: (b) Mitochondria

The correct is answer Mitochondria.

Key Points

• The proteins synthesized by the proteins in mitochondria are utilized to generate adenosine triphosphate (ATP) from the food.

• This ATP acts as the energy currency of the cell, because of which the whole cell and body get energy. Thus, mitochondria are called the powerhouse of the cells.

• This happens by breaking down food substances such as carbohydrates and fats in the presence of oxygen.

• The ribosomes are non-non-membrane-bound organelles that help in the synthesis of proteins.

Additional Information

• Red blood cells carry oxygen from our lungs to the rest of our bodies. Then they make the return trip, taking carbon dioxide back to our lungs to be exhaled.

• White blood cells are part of the body's immune system. They help the body fight infection and other diseases. Types of white blood cells are granulocytes (neutrophils, eosinophils, and basophils), monocytes, and lymphocytes (T cells and B cells).

• The plasma membrane, also called the cell membrane, is the membrane found in all cells that separate the interior of the cell from the outside environment. In bacterial and plant cells, a cell wall is attached to the plasma membrane on its outside surface.

Q43. Answer: (d) 50%

Given:

ΔIJK is an isosceles triangle in which IJ = IK,

and angle JIK = 60°.

Concept used:

In an isosceles triangle, angles corresponding to equal sides are equal.

sum of angles of a triangle is 180°.

Calculations:

According to question,

IJ = IK

=> angle IJK = angle IKJ

Now, in ΔIJK, we have:

angle JIK + angle IKJ + angle IJK = 180°

=> 60° + angle IJK + angle IJK = 180°

=> 2(angle IJK)= 120°

=> angle IJK = 120°/2 = 60°

Hence, angle IJK = 60°

Now, Percentage from which angle IJK = 60° is less than 120°

= (120°-60°)/120° × 100

= 60°/120° × 100

= 50%

Therefore The Required perecentage value is 50%.

Q44. Answer: (c) Both conclusions I and conclusion II are true

Statement:

$A \geq B = Q \leq H < X \leq K$

Conclusions:

I. $B < K$ → Since $B = Q$, $Q \leq H$, $H < X$ and $X \leq K$. So, $B < K$ is true.

II. $X > Q$ → Since $Q \leq H < X$. So, $X > Q$ is true.

Hence, the correct answer is "Both conclusion I and conclusion II are true".

Q45. Answer: (c) North

Directions of Deepika are shown in the diagram given below

Therefore, from the above diagram it is clear that Deepika in facing 'North' direction.

Hence, the correct answer is option(3)

Q46. Answer: (a) 56

Given:

$5.01 + (3.01 \times 1.99^2) \times 4 + 6.01 \div 2.03$

Concept :

BODMAS

Calculations:

$5.01 + (3.01 \times 1.99^2) \times 4 + (6.01 \div 2.03)$

$= 5.01 + (11.92) \times 4 + 2.96$

$=5.01 + 2.96 + 11.92 \times 4$

$= 5.01 + 2.96 + 47.68$

$= 55.64 \sim 56$

Hence, the answer is 56.

Q47. Answer: (c) 108 5/24

Given :

7 2/3 × 5 3/4 + 9 1/2 × 6 3/4

Calculations :

7 2/3 × 5 3/4 + 9 1/2 × 6 3/4

= {(7 + 2/3) × (5 + 3/4)} + {(9 + 1/2) × (6 + 3/4)}

= 35 + (21/4) + (10/3) + (1/2) + 54 + (27/4) + 3 + (3/8)

= 108 5/24

Hence, the required answer is 108 5/24

Q48. Answer: (a) 12 days

Shortcut Trick

A = 15 days, B = 10 × 3 = 30 days. Let Total Work = 30 units.

Efficiency: A = 2, B = 1. Together (A+B) in 6 days = (2+1) × 6 = 18 units.

Remaining work = 30 − 18 = 12 units. B+C do 12 units in 8 days => Efficiency (B+C) = 12 ÷ 8 = 1.5.

Efficiency C = 1.5 − 1 = 0.5. Efficiency (A+C) = 2 + 0.5 = 2.5.

Time for A+C = 30 ÷ 2.5 = 12 days.

Therefore The correct answer is 12 days.

Alternate Method

Given: Time taken by A = 15 days. B takes 10 days for 1/3 work, so total time for B = 30 days.

Formula Used: Total Work = Efficiency × Time

Person	Days	Total Work	Efficiency
A	15	30	2
B	30	1	

=> Work done by A and B in 6 days = (2 + 1) × 6 = 18 units

=> Remaining work = 30 − 18 = 12 units

=> Efficiency of B + C = Remaining Work ÷ Time = 12 ÷ 8 = 1.5 units/day

=> Efficiency of C = Efficiency of (B + C) − Efficiency of B = 1.5 − 1 = 0.5 units/day

=> Combined efficiency of A + C = 2 + 0.5 = 2.5 units/day

=> Time taken by A + C = Total Work ÷ Combined Efficiency = 30 ÷ 2.5 = 12 days

Therefore The correct answer is 12 days.

Additional Information

Work and Efficiency Relationship

Efficiency is inversely proportional to the time taken to complete a work. If A is twice as efficient as B, A will take half the time taken by B.

Fractional Work

If a person completes 1/n part of work in 't' days, the total time taken to complete the full work is n × t days.

Combined Work Formula

If A takes 'x' days and B takes 'y' days, then together they take (x × y) ÷ (x + y) days to complete the work.

Q49. Answer: (d) Large amounts of loan

The correct answer is Large amounts of loans.

Key Points

• A large amount of loan is not a basic principle of micro-financial institutions in India.

• The functions of Microfinance institutions are:

• Maintain macroeconomic stability.

• Avoid interest-rate caps.

• Refrain from distorting the market with unsustainable subsidized.

• High-delinquency loan programs.

Additional Information

• MFIs are financial companies that provide small loans to people who do not have any access to banking facilities.

• The definition of “small loans” varies between countries. In India, all loans that are below Rs. 1 lakh can be considered as microloans.

• Various types of institutions offer microfinance:

• Credit unions.

• Commercial banks.

• NGOs (Non-governmental Organizations).

• Cooperatives, and sectors of government banks.

• The emergence of “for-profit” MFIs is growing. In India, these 'for-profit' MFIs are referred to as Non-Banking Financial Companies (NBFC).

Q50. Answer: (d) Shooting

The correct answer is Shooting.

Key Points

• Sports Journalists' Federation of India (SJFI) Para-athlete Woman of the Year Award 2021 winner Avani Lekhara plays Shooting.

• SJFI Medal is the highest honour of SJFI.

• SJFI was born in Calcutta.

• It was on 27 February 1976 that the Sports Journalists Federation of India (SJFI) was formed at the Eden Gardens, Calcutta, during the inaugural year of the J.K. Bose Cricket Tournament. The cream of sports scribes from Delhi, Calcutta, and Bombay was involved in forming the federation.

Additional Information

• There are other national sports awards like:

• Khel Ratna Award.

• Arjuna Award.

• Dronacharya Award.

• Major Dhyan Chand Award.

• Maulana Abul Kalam Azad Trophy.

• Rashtriya Khel Protsahan Puruskar.

• Tenzing Norgay National Adventure Award.

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Q51. Answer: (c) 7

The correct answer is 7.

Key Points

• pH stands for the power of hydrogen.
• It is a measurement of the hydrogen ion concentration in the body.
• The pH scale measures how acidic or basic a substance is.
• The total pH scale ranges from 1 to 14, with 7 considered to be neutral.
• A pH less than 7 is said to be acidic and solutions with a pH greater than 7 are basic or alkaline.

Additional Information

• pH is really a measure of the relative amount of free hydrogen and hydroxyl ions in the water.
• Water that has more free hydrogen ions is acidic, whereas water that has more free hydroxyl ions is basic.
• Since pH can be affected by chemicals in the water, pH is an important indicator of water that is changing chemically.
• pH is reported in "logarithmic units".
• Each number represents a 10-fold change in the acidity/basicness of the water.
• Water with a pH of five is ten times more acidic than water having a pH of six.

Q52. Answer: (c) Monopolies and Restrictive Trade Practices

The correct answer is Monopolies and Restrictive Trade Practices.

Key Points

• MRTP stands for Monopolistic and Restrictive Trade Practices.
• It was established in 1969.
• This law was designed to ensure that the economic system’s operation does not result in the concentration of economic power in the hands of a few.
• It extends to the whole of India except the State of Jammu and Kashmir.

Additional InformationMonopolistic and Restrictive Trade Practices

• The MRTP act was the first substantial legislation with the goal of regulating free and unfettered trade.
• This act was geared toward ensuring distinction between restrictive and monopolistic trade practices.
• The initial objectives of the MRTP Act are mentioned below:
• The law made sure that the economic power does not get concentrated in the hands of a few companies.
• To provide for monopolies control.
• Regulation of monopolistic and restrictive trade practices.
• The objectives of the MRTP act stood as described below:
• MTP - Prohibition of Monopolistic Trade Practices
• RTP - Prohibition of Restrictive trade practices
• UTP - Prohibition of Unfair Trade Practices

Q53. Answer: (d) West, 3 km

Explanation:

Lokesh runs 4 km facing east.

He takes a left turn and runs for another 3 km.

He finally takes a left turn, runs 4 km and stops.

The shortest distance between the starting point and end point is 3 km.

He is facing West direction at the end point.

Hence, West, 3 km is the correct answer.

Q54. Answer: (c) Windows logo key + L

The correct answer is Windows logo key + L.

Key Points

• To lock your PC in a Windows 10 operating system Windows logo key + L shortcut is used.
• Press and hold the Windows logo key on your keyboard (this key should appear next to the Alt key), and then press the L key.
• Your computer will be locked, and the Windows 10 login screen will be displayed.

Additional InformationShortcuts in Windows 10

• Windows logo key + D is used to display and hide the desktop.

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• Ctrl+K is a keyboard shortcut that varies depending on the program used.
• For example, in certain programs, Ctrl+K is used to insert a hyperlink, and in some browsers, Ctrl+K focuses on the search bar.
• Ctrl+L Aligns the line or selected text to the left of the screen.

Q55. Answer: (c) Rs. 5324

Shortcut Trick
For half-yearly compounding, Rate (R) = 20% ÷ 2 = 10% and Time (n) = 1.5 × 2 = 3 periods.
Use the Multiplying Factor for 10% over 3 periods: $(1.1)^3 = 1.331$.
Amount = Principal × Multiplying Factor = 4000 × 1.331.
Amount = 4 × 1331 = 5324.
Therefore The correct answer is Rs. 5324.
Alternate Method
Given:
Principal (P) = Rs. 4000
Annual Rate (R) = 20%
Time (T) = 3/2 years (1.5 years)
Formula Used:
Amount (A) = $P(1 + r/100)^n$
Where r = rate per conversion period and n = number of periods.
Calculations:
=> Half-yearly Rate (r) = 20% ÷ 2 = 10%
=> Number of half-years (n) = (3/2) × 2 = 3
=> Amount (A) = $4000(1 + 10/100)^3$
=> A = 4000 × (11/10) × (11/10) × (11/10)
=> A = 4000 × (1331/1000)
=> A = 4 × 1331
=> A = 5324
Therefore The correct answer is Rs. 5324.
Additional Information
Compounding Conversion Rules
For half-yearly compounding: Rate = R/2, Time = 2T. For quarterly compounding: Rate = R/4, Time = 4T.
Effective Interest Rate
The actual interest earned annually when compounding occurs more than once. For 10% per half-year, the effective annual rate = 10 + 10 + (10×10)/100 = 21%.
Difference between SI and CI
Difference for 2 years (D2) = $P(r/100)^2$. For 3 years (D3) = $P(r/100)^2 \times (3 + r/100)$.

Q56. Answer: (a) 8

Given:
Numbers given 536, 1064 and 1928.
Calculations:
HCF of 536, 1064 and 1928 is 8.
Therefore The greatest number that exactly divides 536, 1064 and 1928 is 8.

Q57. Answer: (b) 64

Given:
65, 180, 81, 6, 63, 27, 122, 8, 165, 50
Concept used:
The median of 1, 2, and 3 is 2.
Calculations:
According to concept, 65, 180, 81, 6, 63, 27, 122, 8, 165, 50 should be arranged in ascending order.
6, 8, 27, 50, 63, 65, 81, 122, 165, 180
Now, according to concept,

Median = (63+65)/2 = 64

Therefore Median is 64.

Q58. Answer: (b) Only conclusion II follows

Statements:

1. All glasses are plates.

2. No plate is a spoon.

The least Possible Venn diagram for the given statements is as follows:

Conclusions:

I. Some glasses are spoons is false. No plate is spoon and all glasses are spoon implies no glasses are spoon.

II. No spoon is a glass is true as this can be concluded using statement 2 and the venn diagram.

Hence, Only conclusion II follows is the correct answer.

Q59. Answer: (d) bacterium

The correct answer is bacterium.

Key PointsTetanus

• Tetanus is a serious disease of the nervous system caused by a toxin-producing bacterium.

• The disease causes muscle contractions, particularly of your jaw and neck muscles.

• Tetanus is commonly known as lockjaw.

• There's no cure for tetanus.

• Treatment focuses on managing symptoms and complications until the effects of the tetanus toxin resolve.

Additional Information

• Signs and symptoms of generalized tetanus include:

• Painful muscle spasms and stiff, immovable muscles (muscle rigidity) in your jaw.

• The tension of muscles around your lips sometimes produces a persistent grin.

• Painful spasms and rigidity in your neck muscles.

• Difficulty in swallowing.

• Rigid abdominal muscles.

Q60. Answer: (a) 300/11

Given:

Anmol can complete a piece of work in 25 days.

Anmol and Garima can complete the same work in 15 days.

Anmol and Aseema working together can complete the same work in 20 days.

Calculations:

According to the question,

Work done by Anmol in one day = 1/25

Work done by Anmol and Garima in one day = 1/15

Work done by Anmol and Aseema in one day = 1/20

Work done by Garima in one day = (Work done by Anmol and Garima in one day) - (Work done by Anmol in one day)

=> 1/15 - 1/25 = (5 - 3)/75 = 2/75

Work done by Aseema in one day = (Work done by Anmol and Aseema in one day) - (Work done by Anmol in one day)

=> 1/20 - 1/25 = (5 - 4)/100 = 1/100

Work done by Garima and Aseema in one day = (Work done by Garima in one day) + (Work done by Aseema in one day)

=> 2/75 + 1/100 = (8 + 3)/300 = 11/300

Therefore Garima and Aseema working together can complete the same work in 300/11 days.

Q61. Answer: (d) #7958

Given :

• CABLE is coded as 65@7#

Letter	C	A	B	L	E
Code	6	5	@	7	#

And,

• PARKLET is coded as 85917#2

Letter	P	A	R	K	L	E	T
Code	8	5	9	1	7	#	2

Similarly,

From given codes we can conclude that,

• ELRAP is coded as '?'

Letter	E	L	R	A	P
Code	#	7	9	5	8

Hence, #7958 is the correct answer.

Q62. Answer: (a) Neither conclusion I nor II follows.

Explanation:

Statements:

a) All tops are t-shirts.

b) Some shrugs are t-shirts.

The venn diagram based on the given statements will be as follows:

Conclusions:

I. Some tops are shrugs is false as there is no definite relation between tops and shrugs.

II. All T-shirts are tops is false because some t-shirts are top and all tops are t-shirts.

Hence, Neither conclusion I nor II follows is the correct answer.

Q63. Answer: (c) Bhutia

The correct answer is Bhutia.

Key Points

• The Bhutia constitute a majority of the population of Bhutan.

• They live mainly in the western and central regions of the country.

• They form minorities in Nepal and India.

• Particularly in the Indian state of Sikkim.

• They speak various languages of the Tibeto-Burman branch of the Sino-Tibetan language family.

Additional Information

• Kota is a city in Rajasthan.

• Malasar is a village in Bikaner, Rajasthan.

• Kurumbas (or) Kurumbar are a designated Scheduled Tribe or an indigenous community in the Indian states of Karnataka, Kerala and Tamil Nadu.

• The Kurumbar are one of the earliest known inhabitants of the Western Ghats, who are engaged in the collection and gathering of forest produce, mainly wild honey and wax.

• The members of this community are short, have dark skin, and have protruding foreheads.

• Kurumbar are partially Sanskritized to believing in Hinduism.

• The main deity of the tribe is Lord Shiva under the name of Bhairava.

• They also worship animals, birds, trees, rock hillocks, and snakes, along with the other Hindu deities.

Q64. Answer: (b) Lord Rishabhdev

The correct answer is Lord Rishabhdev.

Key Points

Soniji Ki Nasiya Temple

• The Jain Temple of Ajmer is a magnificent Jain temple from the point of view of architecture, located in Ajmer city of Rajasthan.

• It is also known as 'Sonji Ki Nasian'.

• It was built in the late 19th century.

• Its main hall is called 'Swarna Nagri' (City of Gold).

• In this room there are many gold-preserved wooden works in which there are depictions related to Jainism.

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• In this room there is a grand depiction of Ayodhya in which 1000 kg of gold has been used.

Additional InformationLord Ajitnath

• Ajitnath was a Jain Tirthankar, born in the royal family of Ayodhya.

• His father's name was Jitshatru and mother's name was Vijaya.

• Birthplace: Lord Ajitnath was born in Ayodhya to King Jitshatru and Queen Vijaya.

• Birth Date (Janm Kalyanak): He was born on the Ashtami (8th day) of Shukla Paksha (waxing moon) in the Magha month.

• Nirvana Date: The Panchami of Chaitra Shukla refers to a separate event (likely Nirvana or another Kalyanak).

• Ajitnath is considered the second Tirthankara of Jainism.

• He was the owner of abundant wealth, full of devotion, valor, valor and devotion. He was estranged from the influence of Acharya Aridaman.

Lord Mahavir

• Lord Mahavir was the twenty-fourth Tirthankara of Jainism.

• Lord Mahavir was born about two and a half thousand years ago (599 years before BC), Ayodhya Ikshvakuvanshi Kshatriya family in Kundagram of Vaishali Republic.

• At the age of thirty, Mahavira renounced the glory of the kingdom, detached from the world, and after adopting sannyasa, set out on the path of self-welfare.

Lord Chandraprabh

• Chandraprabh ji is the eighth Tirthankara of the present Avarspini period.

• Chandraprabh ji was born in the holy city of Chandrapuri on Krishna Paksha Dwadashi of Paush month in Anuradha Nakshatra.

• His mother's name was Lakshmana Devi and father's name was Raja Mahasen.

• The name of the Yaksha of Chandraprabha was Ajit and the name of the Yakshini was Manovega.

• According to Jain religion, the total number of Ganadhars of Chandraprabha was 93, in which Din Swami was his first Ganadhar.

Q65. Answer: (b) A is the daughter of D's Son

Family Chart:

Given:

'P + Q' means 'P is the daughter of Q'

'P × Q' means 'P is the son of Q'

'P − Q' means 'P is the wife of Q'

Let us first decode the given symbols and then draw a family tree.

P is			
Symbol	•	×	•
Meaning	Daughter	Son	Wife
Of Q			

Given: 'A + B − C × D'

1) A + B

It means A is daughter of B.

2) B - C

It means B is wife of C.

3) C × D

It means C is son of D.

Now, check all the options:

1. B is the son of D → False (B is the daughter-in-law of D)

2. A is the daughter of D's Son → True (A is the granddaughter of D)

3. B is the daughter of D → False (B is the daughter-in-law of D)

4. C is the wife of D → False (C is the son of D)

Hence, A is the daughter of D's Son is the correct answer.

Q66. Answer: (a) Purandar Das

The correct answer is Purandar Das.

Key PointsPurandar das

• Purandara Das was revered as the father of Carnatic music.
• He is widely known as 'Sangeet Pitamah' in recognition of his significant contribution to Carnatic music.
• He was a great devotee of Lord Krishna, Vaishnava poet, saint and social reformer.
• His guru Vyasatirtha narrates the glory of Purandar Das in a song: Dasrender Purandar Darasarai.

Additional InformationTyagaraja

• Tyagaraja was a Bhaktimargi poet and a great musician of Carnatic music.
• He enriched the society and literature as well as art.
• He was rich in versatility.
• He composed hundreds of devotional songs in praise of Lord
• Rama and his the best known Pancharatna works are often sung at religious events.

M. D. Ramanathan

• M. D. Ramanathan was a Carnatic music composer and singer who created a distinctive style of singing rich in Bhava and Laya.
• He was selected for the Sangeet Kalanidhi Award of the Madras Music Academy in 1983.
• Ramanathan composed over 300 songs in Carnatic music in Tamil, Telugu and Sanskrit.
• He used the word Varadasa as his currency in relation to his teacher Tiger Varadachari.

Q67. Answer: (c) Bihar

The correct answer is Bihar.

Key PointsJat-Jatin

• In the Indian state of Bihar, the Jat-Jatin is a popular folk dance.
• It is particularly well-known in North Bihar, particularly in the Mithila and Koshi regions.
• Women's dance Jat Jatin is supposed to be performed on moonlit nights during the monsoon season.
• From midnight to morning, grown-up girls and young housewives assemble in the courtyard to dance to the beat of a drum.
• It is usually done by two people.

Additional InformationFolk the dance of Madhya Pradesh

• The Muria dance, Madhya Pradesh is a famous folk dance of Madhya Pradesh and is performed near the Ghotul compound.
• The dance starts with the boys carrying ritualistic offerings along with the bridegroom to the ceremonial place.
• In this dance, there are a variety of movements.

Folk dance of Assam

• Bihu is the most popular folk dance in Assam.
• Bihu dances are performed by young boys and girls during the Bihu festivities which represent youthful passion, reproductive urge, and joy.
• It is characterized by brisk dance steps and rapid hand movement.

Folk dance of Chhattisgarh

• The most famous dance drama of the State is Pandwani, which is a musical narration of the great Hindu epic Mahabharata.
• Raut Nacha (folk dance of cowherds), the Panthi and Soowa are some of the other famous dance styles of the region.

Q68. Answer: (c) D

LOGIC : Square of first number + Half of first number = Second number

Lets check each option:

A. $2^2 + 1 = 5$

B. $4^2 + 2 = 18$

C. $6^2 + 3 = 39$

D. $8^2 + 4 = 68 \neq 66$

D does not belong to this group.

Hence, D is the correct answer.

Q69. Answer: (d) Russia

The correct answer is Russia.

Key PointsUral Industrial Region

• The Urals are a mountain range in western Russia that runs from north to south.
• It geographically separates Asia and Europe.
• The Ural Industrial Region is located in Russia.

• It is considered a part of the Eurasian Steppe.
• The border between Europe and Asia runs along the eastern side of the Ural Mountains.
• The Urals lie mostly within Russia, but also include a small part of northwestern Kazakhstan.
• It is not a historical, official entity, it has borders overlapping neighboring regions of the Western Volga and Eastern Siberia.

Additional InformationNorthern Ural Range

• It starts from the Gulf of Kara and extends in the south-west up to 64 degrees north latitude.
• There are many clear chains found in this.
• This mountain range is rocky, rough and more sloping towards the southeast and less sloping towards the swamps of European Russia.

Middle Ural Range

• Its width is about 125 km.
• There are iron, copper and gold mines here.
• The Middle Ural is bordered by the Denezhkin Kamen (4,908 ft) to the north.

Southern Ural Range

• It is divided into three parallel chains extending north-east and south-west.
• To the south there is a plateau area of about 1,500 feet high in which deep valleys of rivers are found.
• This region extends to the Bolga.

Q70. Answer: (c) Liquor

The correct answer is Liquor.

Key Points

• In the 1991 policy, except for 18 major industries, all other industries were exempted from licensing, which reduced the number of industries to 5 due to the need for licensing.
• Industries for which a license is now mandatory
• distillation of alcoholic beverages
• Cigar cigarettes of tobacco and other alternatives to regulated tobacco
• Electronic Aerospace & Security Equipment
• Industrial Explosives - Industrial explosives including detonative fuses, safety fuses, gun-powder, nitrocellulose and matches
• Hazardous Chemicals

Additional InformationIndia's 1991 Industrial Policy

• New Industrial Policy 1991 was announced in 1991 in the Lok Sabha on July 24, 1991.
• This policy was announced by the Minister of State for Industry, P.J. Made by Thungan.
• Prior to the new industrial policy, prior permission of the Government of India was mandatory before foreign investment in India or bringing new (foreign) technology into India.
• Government interference and the approval process were creating unwanted delays in business decisions.
• In the new industrial policy, a list of priority industries related to high-tech and high investment was made, in which FDI up to 51 per cent was automatically allowed.
• Under the new industrial policy, the requirement of obtaining permission from the central government before setting up industries in cities with a population of less than 10 lakhs has been dispensed with.

Q71. Answer: (a) 7

Given:

$3.5 \times 0.5 \times (4.4 - 0.625 \div 1.5625)$

Concept used:

Calculations:

$3.5 \times 0.5 \times (4.4 - 0.625 \div 1.5625)$

$\Rightarrow 3.5 \times 0.5 \times (4.4 - 0.4)$

$\Rightarrow 3.5 \times 0.5 \times (4)$

$\Rightarrow 3.5 \times 2 = 7$

Therefore The simplified value of the given equations is 7.

Q72. Answer: (d) MSXUF

The positional values of English alphabet is as follows:

The pattern followed here is as follows:

'HOME' is written as 'LROF'

'EYE' is written as 'HAF'

'SO' is written as 'UP'

Similarly,

'HOUSE' will be written as:

Hence, MSXUF is the correct answer.

Q73. Answer: (b) break-even point

The correct answer is Break-even point.

Key Points

• The point on the supply curve at which an enterprise earns only normal profit is known as the break-even point of the enterprise.

• The break-even point is the point at which total cost and total revenue are equal, meaning there is no loss or gain for your small business.

• In other words, you've reached the level of production at which the costs of production equal the revenues for a product.

• The formula to calculate the Break-even point is: Break-Even Point (Units) = Fixed Costs ÷ (Revenue per Unit – Variable Cost per Unit)

Additional Information

• The supply curve is a graphic representation of the correlation between the cost of a good or service and the quantity supplied for a given period.

• In a typical illustration, the price will appear on the left vertical axis, while the quantity supplied will appear on the horizontal axis.

• Supply curves can often show if a commodity will experience a price increase or decrease based on demand, and vice versa.

• On most supply curves, as the price of a good increases, the number of goods supplied also increases.

• The supply curve is shallower (closer to horizontal) for products with more elastic supply and steeper (closer to vertical) for products with less elastic supply.

• The supply curve, along with the demand curve, are the key components of the law of supply and demand.

Q74. Answer: (b) Only R

Friends : M. N, O, P and R. All are facing towards the centre of the table.

1) M is seated second to the right and N is seated third to the right of O.

2) P is seated second to the left of N.

Clearly, when counted from the left of O. R is seated between N and O.

Hence, the correct answer is "Only R".

Q75. Answer: (d) 5.6 cm

Shortcut Trick

When a cone is melted and recast into a sphere, their volumes are equal: $(4/3)\pi R^3 = (1/3)\pi r^2 h$

=> $4 \times R^3 = 2.8^2 \times 11.2$

=> $R^3 = (2.8 \times 2.8 \times 11.2) \div 4 = 2.8 \times 2.8 \times 2.8$

=> Radius of sphere (R) = 2.8 cm

=> Diameter of sphere = $2 \times R = 2 \times 2.8 = 5.6$ cm

Therefore The correct answer is 5.6 cm.

Alternate Method

Given:

Height of the cone (h) = 11.2 cm

Radius of the cone (r1) = 2.8 cm

Let the radius of the sphere be r2.

Formula Used:

Volume of cone = $(1/3) \times \pi \times r1^2 \times h$

Volume of sphere = $(4/3) \times \pi \times r2^3$

Calculations:

Since the solid right circular cone is melted and recast into a sphere, their volumes remain unchanged.

=> Volume of Sphere = Volume of Cone

=> $(4/3) \times \pi \times r2^3 = (1/3) \times \pi \times r1^2 \times h$

=> $4 \times r2^3 = (2.8)^2 \times 11.2$

=> $4 \times r2^3 = 2.8 \times 2.8 \times 11.2$

=> $r2^3 = (2.8 \times 2.8 \times 11.2) \div 4$

=> $r2^3 = 2.8 \times 2.8 \times 2.8$

=> r2 = 2.8 cm

=> Diameter of the newly formed sphere = 2 × r2

=> Diameter = 2 × 2.8 = 5.6 cm

Therefore The correct answer is 5.6 cm.

Additional Information

Melting and Recasting Principle

When any regular 3D shape is melted and recast into another shape, the overall volume remains constant, irrespective of changes in surface area.

Volume and Surface Area of a Cone

Volume = $(1/3)\pi r^2 h$ | Curved Surface Area = πrl, where slant height $l = \sqrt{(r^2 + h^2)}$.

Volume and Surface Area of a Sphere

Volume = $(4/3)\pi r^3$ | Total Surface Area = $4\pi r^2$.

Q76. Answer: (a) Rs. 15100.80

Given :

External diameter = 17 cm

Internal diameter = 15 cm

Cost of painting = Rs 0.15 per cm^2

Height of cylinder = 10 m = 1000 cm

Concept Used :

Total Surface Area of a hollow cylinder = $2\pi h(R + r) + 2\pi(R^2 - r^2)$ [where R = External Radius, r = Internal Radius]

Calculation :

External Radius(R) = 17/2

=> 8.5 cm

Internal Radius(r) = 15/2

=> 7.5 cm

Total Surface Area of a hollow cylinder = $2\pi h(R + r) + 2\pi(R^2 - r^2)$

Total Surface area = $2\pi \times 1000 \times (8.5 + 7.5) + 2\pi[(8.5)^2 - (7.5)^2]$

=> $(44/7) \times 1000 \times 16 + 44/7 \times (16)$

=> $(44/7) \times 16 [1000 + 1]$

=> 100672 cm^2

Total cost of painting the cylinder = 100672 × 0.15

=> Rs 15100.80

Therefore The total cost of painting is Rs. 15100.80

Q77. Answer: (a) meter

The correct answer is Meter.

• The SI unit of length is Meter (m).

Key Point

• Meter is the SI unit of Length denoted by (m).

• In CGS, the unit of length is centimetres (cm).

• S.I system (standard international system). In this system, the units of mass, length and time are the same, as that of the M.K.S system. However, it is an enlarged system encompassing all fundamental units

• The full form of the CGS system is the Centimeter Gram Second system. In the CGS system, fundamental units are Centimeter, Gram, and second.

Additional Information

• An inch is a unit of length of Anglo-Saxon origin. The size of an inch is defined as one twelfth of a foot or 2.54 cm

• The foot (pl. feet), standard symbol: ft, is a unit of length in the British imperial and United States customary systems of measurement.

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• Mile is a unit of distance.

Q78. Answer: (a) Chahat

Explanation:
Number of colleagues = 6 namely, Ranjana, Diksha, Chahat, Aakash, Rita and Suraj.
All are facing North direction.
Rita is sitting at the east end of the bench.

There are three people between Rita and Ranjana.

Aakash is sitting at the west end of the bench.

Diksha has only one person to her right.
There are only two people sitting between Aakash and Suraj.

Ranjana and Chahat were sitting immediately next to each other.

Chahat is third from the west end of the bench.
Hence, Chahat is the correct answer.

Q79. Answer: (b) 2.4

Shortcut Trick
Arrange data in ascending order: 0.1, 0.9, 1, 1.1, 2.3, 2.5, 3.9, 4.2, 4.6, 5.
Total number of terms (n) = 10 (even).
Median = Average of the middle two terms (5^(th) and 6^(th) terms).
Median = (2.3 + 2.5) ÷ 2 = 4.8 ÷ 2 = 2.4.
Therefore The correct answer is 2.4.
Alternate Method
Given: Data set = {1, 1.1, 2.3, 0.1, 0.9, 5, 3.9, 2.5, 4.2, 4.6}
Formula Used:
For an even number of observations (n), Median = [(n/2)^(th) observation + (n/2 + 1)^(th) observation] ÷ 2
Calculations:
=> Arranging data in ascending order: 0.1, 0.9, 1, 1.1, 2.3, 2.5, 3.9, 4.2, 4.6, 5
=> Total observations n = 10
=> Position of the middle terms = 10 ÷ 2 = 5^(th) and (10 ÷ 2 + 1) = 6^(th)
=> 5^(th) observation = 2.3
=> 6^(th) observation = 2.5
=> Median = (2.3 + 2.5) ÷ 2
=> Median = 4.8 ÷ 2 = 2.4
Comparing the result with the given options, the value matches Option (2).
Therefore The correct answer is 2.4.
Additional Information
Median for Odd Observations
If n is odd, the median is the value of the ((n + 1) ÷ 2)^(th) observation after arranging the data in order.
Mean
The arithmetic average calculated by dividing the sum of all observations by the total count (n).
Mode
The observation that occurs most frequently in the data set.
Empirical Relationship
The relationship between Mean, Median, and Mode is given by: Mode = 3 × Median − 2 × Mean.

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Q80. Answer: (d) 2

(Left) @ 5 7 R M # 2 Q Ω 3 Z A 4 @ W ! R # 5 N % A ! T & 4 A (Right)

2 letters are there which are immediately followed by a symbol and also immediately preceded by a number.

2 Q Ω and 5 N %

Hence, 2 is the correct answer.

Q81. Answer: (d) kalashoka

The correct answer is Kalashok.

Key Points

• The second Buddhist council was held at Vaishali (or Vaishali), an ancient city in what is now the state of Bihar in northern India, under the patronage of King Kalsok on the border with Nepal. At the same time, it was presided over by Sabakami.

• This council was probably held around a century after the 1st century or about 383 BC.

• It was called to discuss monastic practices, specifically whether monks might be allowed to handle wealth.

• The Second Council is commonly said to have resulted from the first schism in the Union, probably caused by a group of hardline reformists known as the Stavros. They differed from the more liberal but conservative majority Confederacy. They were finished

Additional Information

• Buddhist Council Protection Presidency

• First Council - Rajagriha, 483 BC - Ajatashatru Mahakashyap

• Second Council - Vaishali, 383 BC - Kalasoka Sabkami

• Third Council - Pataliputra, 250 BC - Ashoka I Mogliputta Tisa

• Fourth Council - Kashmir, 72 AD - Kanishka

Q82. Answer: (a) Iceland

The correct answer is Iceland.

• According to Global Gender Gap Report 2021, Iceland is the most gender-equal country.

Key Points

• Iceland, for the 12th time, has topped the index.

• The World Economic Forum (WEF) has released the Global Gender Gap Report 2021.

• India has ranked 140 among 156 countries in Global Gender Gap Index 2021, which is 28 spots lower than its 2020 ranking.

• Afghanistan is the worst performing country which is ranked at 156.

Additional Information

• The Global Gender Gap Index seeks to measure one important aspect of gender equality: the relative gaps between women and men, across a large set of countries and across four key areas: health, education, economics and politics.

• World Economic Forum's headquarter is in Cologny, Switzerland.

• The WEF is chaired by founder and executive chairman Professor Klaus Schwab.

• Iceland capital and currency: Reykjavík, Icelandic krona

Q83. Answer: (c) Rs. 4634

Given:

Principle (P) = Rs. 14000

Amount = Rs. 18515

Time period (T) = 2 years

Formula used:

Amount = P (1 + R/100)^T

Compound Interest = Amount - Principal

Calculations:

According to the question,

$18515 = 14000 (1 + R/100)^2$

=> 1.3225 = (1 + R/100)2

=> 1.15 = 1 + R/100

=> R = 0.15 × 100 = 15%

Now the interest when compounded 8 monthly

=> Number cycles for 2 years = (2 × 12)/8 = 3

Now new rate will be 15 × 8/12

=> 10%.

=> Amount = 14000 $(1 + 10/100)^3$

=> Amount = 14000 (110/100)3

=> Amount = 14000 (1.331) = Rs. 18634

=> CI = 18634 - 14000 = Rs. 4634

Therefore The interest is compounded 8-monthly is Rs. 4634.

Q84. Answer: (a) 60062

Shortcut Trick

The least number is found using LCM(11, 12, 13, 14, 15) + Remainder.

Checking divisibility of (Option − 2) by 11 and 15.

60062 − 2 = 60060, which is divisible by both 11 and 15.

Therefore The correct answer is 60062.

Alternate Method

Given: Divisors are 11, 12, 13, 14, and 15. The constant remainder is 2.

Formula Used: Required Number = LCM(Divisors) + Remainder

Calculations:

=> Prime factorization of divisors:

=> 11 = 11^1

=> 12 = $2^2 \times 3^1$

=> 13 = 13^1

=> 14 = $2^1 \times 7^1$

=> 15 = $3^1 \times 5^1$

=> LCM = $2^2 \times 3^1 \times 5^1 \times 7^1 \times 11^1 \times 13^1$

=> LCM = 4 × 3 × 5 × 7 × 11 × 13 = 60060

=> Required Number = 60060 + 2 = 60062

Therefore The correct answer is 60062.

Additional Information

LCM Method for Remainders

When a number leaves the same remainder 'r' for different divisors, the number is of the form [LCM(divisors) × k] + r.

HCF for Remainders

To find the greatest number that divides x, y, and z leaving remainders a, b, and c, calculate HCF((x−a), (y−b), (z−c)).

Common Difference Case

If the difference between divisor and remainder is constant (d = divisor − remainder), the least number is LCM(divisors) − d.

Q85. Answer: (a) PS Vinodraj (PS Vinothraj)

The correct answer is PS Vinodraj (PS Vinothraj).

Key Points

• The film Koozhangal, directed by PS Vinothraj from India, won the Best Film Award in the Asian Film Competition section at the 20th Dhaka International Film Festival.

• Kankar (Tamil: Koozhangal) is a 2021 Indian Tamil-language drama film directed by debutant P.S. Vinothraj has done it.

• The film was produced by Vignesh Shivan and Nayanthara under the Rowdy Pictures banner.

• Featuring music composed by Yuvan Shankar Raja, the cinematography in the film was handled by Jaya Parthipan and Vignesh Kumulai and edited by Ganesh Shiva.

• Pebble was screened at the 50th International Film Festival of Rotterdam in the Netherlands on 4 February 2021, where it won the Tiger Award at the festival.

• It was selected as the Indian entry for the Best International Feature Film at the 94th Academy Awards, but was not nominated.

Additional Information

• The film Aina Jhyal, directed by Sujit Bidari from Nepal, received the Best Director award for Putli.

• The Best Screenwriter Award went to Indranil Roychowdhury and Sugata Sinha for the Indo-Bangladesh film Maire Jonjal directed by Indranil Roychowdhury.

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• Ranjit Shankar is an Indian film producer who works in Malayalam films. He started his film career with the 2009 thriller film Passenger.

Q86. Answer: (b) Pacific Ocean

The correct answer is North Pacific.

Key Points

• The surface waters of the Kuroshio Current are warm and salty.

• This is because the Kuroshio starts in the tropics where the westward flowing North Equatorial Current reaches the western boundary of the North Pacific.

• The Japanese call it the Kuroshio Current, with some early English geographers translating this to the Black Stream, the name coming from the deep blue of the water; a few writers refer to it as the Japan Current.

• A branch of the Kuroshio Current, known as the Tsushima Current, passes through the Tsushima Straits between Japan and Korea, into the Sea of Japan.

• The Kuroshio Current is the second largest ocean current in the world.

Additional Information

• There are four named oceans: the Atlantic, Pacific, Indian, and Arctic. However, most countries - including the United States - now recognize the Southern (Antarctic) as the fifth ocean.

• The Pacific, Atlantic, and Indian are the most commonly known.

• The Southern Ocean is the 'newest' named ocean.

Q87. Answer: (b) 15912

The positional values of English alphabet is as follows:

The pattern followed here is:

BUTTER is written as 2212020518

And,

MINED is written as 1391454

Similarly,

OIL will be written as:

Hence,15912 is the correct answer.

Q88. Answer: (d) Pusarla Venkata Sindhu

The correct answer is Pusarla Venkata Sindhu.

Key Points

• Olympic medallist shuttler PV Sindhu was appointed as a member of the Badminton World Federation's (BWF) Athletes' Commission.

• Iris Wang (USA), Robin Tabeling (NED), Greysia Polii (INA), Kim Soyeong (KOR), Pusarla V Sindhu (IND) and Zheng Si Wei (CHN) are the ones appointed as members of the BWF Athletes' Commission.

• The the-26-year-old former world champion was named alongside five others who will serve as members till 2025.

• The chair and the Deputy chair will be decided among these 6 members.

Additional Information

• The Badminton World Federation is the international governing body for the sport of badminton recognised by the International Olympic Committee.

• It was founded in 1934 as the International Badminton Federation with nine member nations.

• Badminton World Federation headquarter is in Kuala Lumpur, Malaysia.

• Poul-Erik Høyer Larsen is the current President of the Badminton World Federation

Q89. Answer: (d) N

Persons : P, Q, N, H and S

1) P is taller than S.

_ > _ > _ > P > S

2) N is taller than P and S is shorter than N.

_ > _ > N > P > S

3) Q is taller than N but shorter than H.

H > Q > N > P > S

Hence, N is the correct answer.

Q90. Answer: (b) 13

The positional values of English alphabet is as follows:

The pattern followed here is:

LOGIC : Sum of positional values of the word ÷ Number of alphabets in the word

1) Rahul : 12

Accordingly, RAHUL = 18 + 1 + 8 + 21 + 12 = 60

Number of alphabets in RAHUL = 5

so, 60 ÷ 5 = 12

2) Zenus : 17

Accordingly, ZENUS = 26 + 5 + 14 + 21 + 19 = 85

Number of alphabets in ZENUS = 5

so, 85 ÷ 5 = 17

Similarly, VINAS will be coded as:

VINAS = 22 + 9 + 14 + 1 + 19 = 65

Number of alphabets in VINAS = 5

so, 65 ÷ 5 = 13

Hence, 13 is the correct answer.

Q91. Answer: (a) 23

Given:

=> Raman's rank in an examination is 11^(th) from the bottom.

=> Shikha's rank in the same examination is 1^(st) from the top.

Explanation:

Position of Shikha from top = 1st

Number of students in between Raman and Shikha = 11th

So, the position of Raman from the top is = 11+ 1+1=13th

The number of students in the class = Position of Raman from the top + Position of Raman from the bottom - Raman = 13+11-1= 23

Hence, 23 is the correct answer.

Q92. Answer: (c) 16

Shortcut Trick

For n = 7 terms, the Median is the 4^(th) term, which is x.

Sum of remaining terms = 4 + 6 + 10 + 20 + 24 + 32 = 96.

If Mean = Median = x, then Total Sum = 7 × x.

96 + x = 7x => 6x = 96 => x = 16.

Therefore The correct answer is 16.

Alternate Method

Given: Numbers in ascending order are 4, 6, 10, x, 20, 24, 32. Total terms (n) = 7.

Formula Used:

Mean = (Sum of all observations) ÷ (Total number of observations)

Median (for odd n) = ((n + 1) ÷ 2)^(th) term

Calculations:

=> Median = ((7 + 1) ÷ 2)^(th) term = 4^(th) term

=> Median = x

=> Mean = (4 + 6 + 10 + x + 20 + 24 + 32) ÷ 7

=> Mean = (96 + x) ÷ 7

=> According to the question, Mean = Median

=> (96 + x) ÷ 7 = x

=> 96 + x = 7x

=> 6x = 96

=> x = 96 ÷ 6

=> x = 16

Therefore The correct answer is 16.

Additional Information

Median of a Data Set

For a set of n observations arranged in order, if n is even, the median is the average of (n/2)^(th) and (n/2 + 1)^(th) terms.

Empirical Relationship

The relationship between the three measures of central tendency is given by: Mode = 3 × Median − 2 × Mean.

Property of Mean

The sum of deviations of all observations from their arithmetic mean is always zero.

Q93. Answer: (a) 3 : 8

Given :

Total number of students in class who took part in quiz = 64

Number of boys = number of girls - 16

Calculation :

Let the number of boys be x,

then, the number of girls be x +16

Now, according to question:

=> x + x +16 = 64

=> 2x = 64 - 16

=> x = (48/2)= 24

Hence, the number of boys = x = 24 and

The number of total students who took part in quiz = 64

Hence, the required ratio = 24 : 64 = 3 : 8

Q94. Answer: (a) Only I is true

Given: K ≤ O = M ≥ N and L ≥ M

Explanation:

I. L ≥ K (True) L ≥ M = O ≥ K

II. N < K (False) K ≤ O = M ≥ N

Only I conclusion is right

Hence, Only I is true is the correct answer.

Q95. Answer: (d) 1 and 2, both

The correct answer is both 1 and 2.

Key Points

• According to Article 55 of the Constitution, there should be, as far as possible, uniformity in the scale of representation of different states in the election of the President. To achieve such uniformity among the states, the number of votes each state is entitled to be determined as follows:

• Each elected member of the Legislative Assembly of a State shall have as many votes as there are in the quotient obtained by dividing the population of the State multiple of one thousand by the total number of elected members of the Legislative Assembly;

• If, after taking the said multiples of one thousand, the remainder is not less than five hundred, the vote of each member shall be further increased by one; (c) Each elected member of either House of Parliament shall have a such number of votes as may be obtained by dividing the total number of votes assigned to the members of the State Legislative Assemblies by the total of the elected members of both the Houses of Parliament Counting more than one and a half fractions by number as one and disregarding other fractions.

• The President shall be elected according to the system of proportional representation by the single transferable vote and by secret ballot.

Additional Information

• The President of India is the head of state of the Republic of India.

• The President is the nominal head of the executive, the country's first civilian, and the Commander-in-Chief of the Indian Armed Forces.

• Draupadi Murmu is the 15th and current President, having assumed office on 25 July 2022 at AM.

• The office of the President was created when India officially became a republic on 26 January 1950, after gaining independence

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on 15 August 1947, when its constitution came into force. The President is elected indirectly by an electoral college consisting of both the Houses of the Parliament of India and the Legislative Assemblies of each of the states and territories of India, which the citizens themselves directly elect.

Q96. Answer: (c) Uttar Pradesh

The correct answer is Uttar Pradesh.

• Uttar Pradesh stands at number one in terms of route kilometres at the end of the year 2019-20 as per the Indian Railways Yearbook 2019-20.

Key Points

• In India, the largest route kilometres are in Uttar Pradesh with 8726 kilometres.

• This comes out to be 13.6% of India's total Route Kilometers.

• After Uttar Pradesh, Rajasthan stands out as number 2 in terms of route kilometres.

• South Coast Railway Zone (SCoR) has been announced as the newest railway zone of the Indian Railways and is headquartered at Visakhapatnam, Andhra Pradesh.

Additional Information

• Indian Railways is a statutory body under the ownership of the Ministry of Railways, Government of India that operates India's national railway system.

• Indian Railways was founded on 6 May 1836.

• It manages the fourth largest national railway system in the world by size, with a total route length of 67,956 km as of 31 March 2022.

• Ashwini Vaishnav is the current minister of Railways. (Aug 2022)

Q97. Answer: (a) 5%

Shortcut Trick

Ratio of Income A : Income B = 75 : 100 = 3 : 4

Ratio of Income B : Income C = 140 : 100 = 7 : 5

Combined Ratio A : C = (3 × 7) : (4 × 5) = 21 : 20

Percentage Increase = ((21 − 20) ÷ 20) × 100 = 5%

Therefore The correct answer is 5%.

Alternate Method

Given:

Income of A = 25% less than B

Income of B = 40% more than C

Income of C = 20% less than D

Step-by-step Calculation:

=> Let the Income of C = 100

=> Income of B = 100 + (40% of 100) = 100 + 40 = 140

=> Income of A = 140 − (25% of 140) = 140 − (1/4 × 140)

=> Income of A = 140 − 35 = 105

=> Difference between Income A and Income C = 105 − 100 = 5

=> Percentage Increase = (Difference ÷ Income of C) × 100

=> Percentage Increase = (5 ÷ 100) × 100 = 5%

Therefore The correct answer is 5%.

Additional Information

Percentage Comparison Formula

To find how much percent x is more than y, use: Percentage = ((x − y) ÷ y) × 100.

Successive Percentage Change

If a value changes by a% and then by b%, the net change is (a + b + (ab ÷ 100))%. Note that a or b are negative for a decrease.

Fractional Equivalents

25% = 1/4 | 40% = 2/5 | 20% = 1/5. Using fractions simplifies complex calculations in ratio-based problems.

Q98. Answer: (a) 2

Given:

=> [1+1/(1+1/(1+1/5))] ÷ 1 6/11 = x/2

Concept Used:

Calculations:

[1+1/(1+1/(1+1/5))] ÷(1 + 6/11) = x/2

=> [1+1/(1+5/6)] ÷ (1 + 6/11) = x/2

=> [1 + 6/11] ÷ 17/11 = x/2

=> 17/11 ÷ 17/11 = x/2

=> x = 1 × 2 = 2

Therefore The value of x in the given equation is 2.

Q99. Answer: (a) Samudragupta

The correct answer is Samudragupta.

Key Points

• Prayag Prashasti was an article composed by Harisena, the court poet of Emperor Samudragupta of the Gupta dynasty.

• This inscription was engraved on the Ashoka pillar brought from Kaushambi by Samudragupta in 200 AD.

• It describes the kingdoms that fought with Samudragupta and were defeated and subordinated to him.

• Apart from this, Samudragupta had also inscribed Eran Prashasti, Gaya Copper Rule articles, etc., at different places.

• According to this prashasti, Samudragupta had expanded his empire well.

Additional Information

• The inscriptions of Prayagraj show that Samudragupta started his conquest by defeating nine rulers of Aryavarta in northern India, which included Nagasena, Achyuta, Ganapati etc.

• Through these victories, Samudra Gupta established his power over Madhya Pradesh or the Ganges Yamuna Doab.

• He completely abolished these 9 rulers because it was not possible for him to move forward without completely defeating and eradicating the competing states of the central region.

Q100. Answer: (b) 170

Given:

Ravi has 1530 eggs

Vinita has 2380 eggs

Calculations:

The HCF of 1530 and 2380 is the only possible way to fill the cartons then

=> HCF of 1530 = 17 × 9 × 10

=> HCF of 2380 = 17 × 14 × 10

HCF of 1530 and 2380 = 17 × 10 = 170

Therefore The maximum number of eggs that each carton should hold is 170.

Q101. Answer: (d) 5 : 17

Given:

x : y = 3 : 4

Calculations:

(7x − 4y) : (3x + 2y)

=> (7 × 3 − 4 × 4) : (3 × 3 + 2 × 4)

=> (21 − 16) : (9 + 8)

=> 5 : 17

Therefore The value of (7x − 4y) : (3x + 2y) is 5 : 17.

Q102. Answer: (c) Chhatrapati Sambhaji

The correct answer is Chhatrapati Sambhaji.

Key Points

• After the death of Chhatrapati Shivaji Maharaj, the struggle of Uttarakar started in the Maratha Empire.

• In the struggle, the eldest son Chhatrapati Sambhaji defeated Anuj Rajaram and got power.

• He created a crisis for himself by providing shelter to Akbar II, the rebellious son of Aurangzeb.

• He re-implemented his father's expansionist policies to avert the Rajput-Maratha alliance and to re-establish his old ties with the Deccan Sultanate.

Additional Information

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• After the death of Shambaji, Shivaji's second son Rajaram took over the rule and carried forward the Maratha tradition.

• He continued the expansionist policy of the Marathas and started the tradition of invading the Mughal territories of the Deccan.

• After Rajaram's death, his widow Tarabai placed her son Shivaji II on the throne and herself became his protector. She provided stability to the Maratha state in times of crisis, both in civil and military terms.

Q103. Answer: (d) Russia

The correct answer is Russia.

Key Points

• Russia won the Davis Cup title in 2021 by beating Croatia, after an outstanding performance from Daniil Medvedev.

• The Davis Cup is extended by the International Tennis Federation (ITF), the world-controlling body of tennis.

• It's one of the biggest federations in world sport.

• Andrey Rublev was called the Most Valuable Player of the tournament after going 6–1 in both singles and doubles.

Additional Information

• The Uzbek national wrestling or game kurash is one of the ancient warlike arts in the world and perhaps the most liked form of entertainment in Uzbekistan.

• Croatia's national football team have occurred in the FIFA World Cup five moments (in 1998, 2002, 2006, 2014 and 2018) since gaining independence in 1991.

Q104. Answer: (a) 224π

Shortcut Trick

The relationship between Volume (V), Radius (r), and Curved Surface Area (CSA) of a cylinder is: CSA = 2V ÷ r.

=> CSA = (2 × 1792π) ÷ 16

=> CSA = 3584π ÷ 16

=> CSA = 224π cm^2

Therefore The correct answer is 224π cm^2.

Alternate Method

Given:

Volume (V) = 1792π cm^3

Radius (r) = 16 cm

Formula Used:

Volume of Cylinder = $\pi r^2 h$

Curved Surface Area (CSA) = $2\pi rh$

Step 1: Find the height (h)

=> $1792\pi = \pi \times (16)^2 \times h$

=> $1792 = 256 \times h$

=> $h = 1792 \div 256$

=> h = 7 cm

Step 2: Find the Curved Surface Area (CSA)

=> CSA = 2 × π × r × h

=> CSA = 2 × π × 16 × 7

=> CSA = 32 × 7 × π

=> CSA = 224π cm^2

Therefore The correct answer is 224π cm^2.

Additional Information

Total Surface Area (TSA) of Cylinder

The Total Surface Area includes the curved area and the area of the two circular bases: $TSA = 2\pi rh + 2\pi r^2 = 2\pi r(h + r)$.

Volume of a Cylinder

The Volume represents the space occupied: Volume = Area of Base × Height = $\pi r^2 h$.

Base Area and Perimeter

The Area of the base is πr^2 and the Circumference (perimeter of the base) is $2\pi r$.

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Q105. Answer: (c) 42nd Amendment.

The correct answer is 42nd Amendment.

Key Points42nd Amendment

• 42nd Amendment to the Indian Constitution, officially known as the Constitution Act, 1976.

• It was enacted during the Emergency by the Indian National Congress government headed by Indira Gandhi.

• Most of the provisions of the amendment came into force on 3 January 1977, others came into force from 1 February and 27 April came into force on 1 April 1977.

• The 42nd Amendment is considered the most controversial constitutional amendment in Indian history.

• Fundamental duties were included in the Indian Constitution by the 42nd Amendment.

Additional Information40th amendment

• This Act provided for vesting in the right of the Union all mines, minerals and other valuables falling within the national oceanic boundary or the economic territory of India as a whole.

• It also provided that all other resources of the economic sphere of India would also be entirely in the possession of the Union.

80th Amendment

• According to this scheme, for grants in lieu of income tax, excise duties, especially excise duties and railway passenger fares, till now the state governments got 26 percent of the total revenue collected from central taxes and duties, now 26 percent of it has been given to the states.

86th amendment

• The 86th Constitution Amendment Bill is an amendment bill of the Indian Constitution.

• This Bill was passed on 12th December, 2002.

• In this bill, there is a provision to provide free primary education to all children in the age group of 6 to 14 years as a fundamental right by the state.

Q106. Answer: (a) 11.52

Given:

Running speed (S) = 8 m/s

Time (T) = 24 minutes = 24 × 60s = 1440 s.

Formula used:

Speed = Distance(D)/Time

Calculations:

S = D/T

=> 8 = D/1440

=> D = 8 × 1440 = 11520 m

According to the question,

=> D = 11520/1000 = 11.52 km.

Therefore Avik will cover a distance of 11.52 km.

Q107. Answer: (d) Jagjeet

Explanation:

• Punit and Kaushal play rugby and cricket.

• Punit and Jagjeet play cricket and basketball.

• Kaushal and Rakhi play rugby and badminton.

• Rakhi and Jagjeet play badminton and basketball.

Punit will play rugby,cricket and basketball. kaushal will play rugby, cricket and badminton. Rakhi will play rugby, badminton and basketball. Jagjeet will play cricket, basketball and badminton.

Person's Name	Games		
Punit	Rugby	Cricket	Basketball
Kaushal	Rugby	Cricket	Badminton
Rakhi	Rugby	Basketball	Badminton
Jagjeet	Basketball	Cricket	Badminton

Hence,Jagjeet is the correct answer.

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Q108. Answer: (d) 10 km/hr.

Given:

Distance (D) = 60km

Arjun takes 2 hours more than Rohit.

If Arjun doubles his speed, he would take 1 hour less than Rohit

Formula used:

Speed (S) = Distance (D)/Time (T)

Calculations:

Let the speed of Arjun be 'x' and that of Rohit be 'y'

In case 1:

=> 60/x = 2 + 60/y .....(1)

In case 2:

=> 60/2x = 60/y - 1

Subtracting (2) from (1)

=> (60/x) - (60/2x) = (2 + 60/y) - (60/y - 1)

=> 60/2x = 3

=> 2x = 60/3

=> x = 20/2 = 10 km/h

Therefore The original speed of Arjun was 10km/h.

Q109. Answer: (b) Karakoram

The correct answer is Karakoram.

Key Points

• The Baltoro Glacier is located in the Karakoram ranges in the Baltistan sub-region of the Gilgit-Baltistan region of Pakistan-occupied Kashmir.

• The Baltoro Glacier, 63 km in length, is one of the longest glaciers outside the polar regions.

• It passes through part of the Karakoram mountain range.

• Baltoro lies to the north and east of the Muztagh Glacier, while Mount Masherbrum lies to the south.

• At 8,611 metres, K2 is the highest mountain in the region, and there are three other eight thousand within 20 km.

• The Siachen Glacier is separated from the Baltoro Glacier by the Conway Saddle.

Additional Information

• The Baltoro Glacier is one of the longest glaciers outside the Earth's polar regions.

• To its north and east are the Baltoro Muztag mountains and to its south are the Masherbrum mountain range.

• The Karakoram is a vast mountain range that extends to the Gilgit-Baltistan, Ladakh and Xinjiang regions of Pakistan, India and China respectively.

• It is one of the great ranges of Asia and is a part of the Himalayan ranges.

• Karakoram is a Kyrgyz word which means 'black friable soil'.

Q110. Answer: (d) T

Persons : T, U, V, W, X, Y, and Z

Floors : 1 (lowermost) to 7 (topmost)

1) No person lives above U's floor.

(It means he lives on topmost floor)

Floors	Persons
7	U
6	
5	
4	
3	
2	

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1	

2) The number of people living above and below Y is equal.

(It means he lives on the 4^(th)floor)

Floors	Persons
7	U
6	
5	
4	Y
3	
2	
1	

3) W lives only above V's floor.

Floors	Persons
7	U
6	
5	
4	Y
3	
2	W
1	V

4) X lives above Z's floor. Two people lives between X and Z's floor.

Floors	Persons
7	U
6	X
5	
4	Y
3	Z
2	W
1	V

5) T lives on an odd numbered floor.

Floors	Persons
7	U
6	X
5	T
4	Y
3	Z
2	W
1	V

T lives on the 5^(th)floor.

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Hence, T is the correct answer.

Q111. Answer: (c) DQUU

The positional values of English alphabet is as follows:

The pattern followed here is:

EYXJ is coded as IGBR

And,

CRFQ is coded as GZJY

Similarly,

ZIQM will be coded as:

Hence, "DQUU" is the correct answer.

Q112. Answer: (c) Madhya Pradesh

The correct answer is Madhya Pradesh.

Key Points

• India's Madhya Pradesh state, the only diamond mining domain in Asia, could be between the world's top ten diamond makers, studies have shown.

• As of 2017, there was one industrial-scale diamond mine in India, the Majhgawan mine, close by the town of Panna, Madhya Pradesh.

• Diamond mining in India extends back into age.

• From ancient times, India was the origin of nearly all the world's known diamonds, and up to the discovery of diamonds in South Africa in 1896, India was the at most place where diamonds were mined.

Additional Information

• Tamil Nadu is the excessive creator of bananas and coconuts in the whole country.

• Karnataka is the biggest producer of coarse cereals, coffee, raw silk and tomatoes between the states in India.

• Chhattisgarh is a main producer of minerals such as coal, iron ore and dolomite.

Q113. Answer: (b) 21

The pattern followed here is as follows:

This is an alternate number series.

Hence, "21" is the correct answer.

Q114. Answer: (a) Piyush Goyal

The correct answer is Piyush Goyal.

Key Points

• Piyush Goyal is a Bharatiya Janata Party politician and former Railway Minister of India and the Prime Minister of the Ministry of Coal, Government of India.

• Union Minister Piyush Goyal has been appointed as the Leader of the House in the Rajya Sabha.

• His appointment is effective from July 06, 2021.

• Shri Goel, a two-time Rajya Sabha MP, is currently the Deputy Leader of the NDA as well as a Union Minister in the Cabinet.

• He is serving as the Union Minister of Textiles, Minister of Commerce and Industry and Minister of Consumer Affairs, Food and Public Distribution.

Additional Information

• The Leader of the House of the Rajya Sabha is a member of the Rajya Sabha who is a cabinet minister or any other nominated minister.

• Rajya Sabha is the upper representative assembly of Indian democracy.

• Lok Sabha is the lower House of Representatives. There are 245 members in the Rajya Sabha.

• In which 12 members are nominated by the President of India. These are called 'nominated members'.

• Other members are elected. Members of the Rajya Sabha are elected for six years, of which one-third of the members retire every two years.

Q115. Answer: (c) 0.108

Given:

=> 28957.5 ÷ 268.125 = 108

CONCEPT USED:

Shifting of decimal to left = on dividing by10,100,1000 and so on, move the decimal point to the left as many places as there are 0s.

Shifting of decimal to right = when you multiply a decimal by a power of 10,move the decimal place to the right as many places as there are 0s.

CALCULATIONS :

28957.5 ÷ 268.125 =108

=> to shift two places of decimal in numerator, divide by 100 =289.575

=> multiply by 10 in denominator to shift decimal right by one place =2681.25

Now, L.H.S= 289.575 ÷ 2681.25

=> Hence, the same thing should be done to R.H.S as well i.e. divide the numerator by 100 and multiply the denominator by 10 i.e. (1/100)÷10 =1/1000

=>108/1000=0.108

=> 289.575 ÷2681.25 = 0.108.

Therefore The new value is 0.108.

Q116. Answer: (c) Excess of total expenditure over total receipts excluding debt

The correct answer is excess of total expenditure over total receipts excluding debt.

Key Points

• The difference between the total income and expenditure of the government is called fiscal deficit.

• This shows how much borrowing will be required by the government to run its business.

• Borrowings are not included in the calculation of total revenue.

• Fiscal deficit is usually due to decrease in revenue or excessive increase in capital expenditure.

• Capital expenditure is incurred on long-term assets such as factories, construction of buildings and other development works.

• The fiscal deficit is usually met by borrowing from the central bank.

Additional Information

• The word deficit is the exact opposite of surplus, because when the government spends more than its income, then that excess expenditure is called fiscal deficit and if the government receives more income than it spends, then That surplus means profit is considered.

• The government receives mainly from taxes and its businesses, but this income does not include borrowings from the government.

• Government spending more than income is considered the biggest reason for fiscal deficit.

Q117. Answer: (b) Only assumption 1 is valid

Statement:

They will leave in an hour, but now I have to learn my lessons, so I won't be able to say goodbye to them.

Assumptions:

1. Lessons will take over an hour to complete.

2. The departing people are not expecting me to say goodbye to them before departure.

Explanation:

Nothing is mentioned about the expectations of the people who are departing. Thus, 2 assumption is not implicit.

So, only assumption 1 is valid because lessons will surely take over an hour to complete so he won't be able to say goodbye to them.

Hence, "Only assumption 1 is valid" is the correct answer.

Q118. Answer: (b) Mizoram

The correct answer is MIzoram.

Key Points

• The people of Mizoram are traditionally known as the 'Singing Tribe'.

• The regional folk songs of Mizoram are the richest heritage of Mizos.

• Saikuti, a poetess from Mizoram, composed songs in praise of warriors, brave hunters, great warriors and young men who aspire to be hunters.

• She also praised the warriors for their achievements against their enemies.

• Mizoram is the cradle of the folk music traditions of Saikuti Zai.

Additional Information

• Mizoram's folk music consists of swaras (singing) accompanied by traditional drums, gongs and other native percussion instruments.

• Flute-playing also has a long history which has now come to an end.

• Drums are made from a hollow tree trunk, with a membrane made of cow hide, and clocks made of brass are similar to those found in Myanmar.

• Most of the Mizo musical instruments used at the time of festivals and dances are different types of khuang and striking instruments like dar, bengbung, seki, talkhuang.

• Mizo folk songs are named after the person. Most of them are named after the original composer of music as well as verse melodies.

Q119. Answer: (d) O

Students : J, K, L, M, N, O, P and Q

1) They are sitting in two parallel rows facing each other. Each row has four students.

2) Q and N are facing each other. Q is an immediate neighbor of both P and O.

Case 1:

Case 2:

3) K is sitting to the immediate left of O. (So case 2 is eliminated)

4) K and J are diagonally opposite. M and N are not immediate neighbours of each other.

Hence, O is in front of L.

Hence, the correct answer is "O".

Q120. Answer: (a) Rs. 8,175

Given :

Total expenditure = Rs. 32, 700

Calculations :

According to graphical representation in question,

Expense on decoration

= 19% of Rs. 32,700

= (19/100) × 32,700

= Rs. 6,213

And expense on DJ is

=> 6% of Rs. 32,700

=> (6/100) × 32,700

=> Rs. 1,962

Combined expense on decoration and DJ =(6,213 + 1,962)

=> Rs. 8,175

Therefore Combined expense on decoration and DJ is Rs. 8, 175

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