RRB NTPC Graduate Level CBT-I Official Paper (Held On: 18 Jun, 2025 Shift 2) (Previous Year Paper)

RRB Group D • 2025 • 100 questions • 90 minutes • Answer key and solutions

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Q1. A bike can finish a certain journey in 6 hours at the speed of 92 km/hr. In order to cover the same distance in 3 hours, the speed of the bike (in km/hr) must be increased by ____.

(a) 92
(b) 85
(c) 86
(d) 98

Q2. What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

122 ÷ 4 + 65 × 5 − 41 = ?

(a) 518
(b) 522
(c) 516
(d) 512

Q3. Which of the following methods is used to create a new folder in Windows 11 OS from Desktop?

(a) Press Alt + F4
(b) Drag a file to Desktop
(c) Press Ctrl + N
(d) Right-click → Select New → Folder

Q4. In which year was 'Make in India' launched by the Government of India to facilitate investment, foster innovation, enhance skill development, protect intellectual property, and build best in class manufacturing infrastructure in India?

(a) 2019
(b) 2015
(c) 2014
(d) 2016

Q5. TN 14 is related to PK 29 in a certain way. In the same way, JD 3 is related to FA 18. To which of the given options is SG -5 related, following the same logic?

(a) OC 8
(b) OD 10
(c) OD 8
(d) OC 10

Q6. The average of 6 numbers is 18. If each number is increased by 5, what will be the new average?

(a) 20
(b) 25
(c) 23
(d) 18

Q7. Which of the following caves are famous for its high citadel?

(a) Sudama caves
(b) Ellora caves
(c) Junagadh caves
(d) Bagh caves

Q8. A shopkeeper fixes the marked price of an item 52% above its cost price. What percentage of discount on the marked price should be allowed to gain 14%?

(a) 27%
(b) 22%
(c) 25%
(d) 28%

Q9. Find the smallest number by which 6627 must be multiplied to make it a perfect square.

(a) 4
(b) 11
(c) 3
(d) 7

Q10. The enactment of the first Cooperative Credit Societies Act in 1904 was influenced by which of the following?

(a) Royal Commission on Agriculture
(b) Indian Famine Commission
(c) Hunter Commission
(d) Simon Commission

Q11. Who administers the oath of office and secrecy to the Union Ministers under Article 75(4) of the Constitution of India?

(a) Chief Justice of India
(b) Prime Minister
(c) Vice President
(d) President of India

Q12. As per April 2025, Reserve Bank of India (RBI) allows flexibility in UPI transaction limits for in-person merchant payments, ranging from Rs. 2 lakh to _____.

(a) Rs. 5 lakh
(b) Rs. 3 lakh
(c) Rs. 6 lakh
(d) Rs. 4 lakh

Q13. Find the effective price percentage of the marked price after three consecutive discounts of 8%, 16% and 3%. (Rounded up to two decimal places.)

(a) 73.29%
(b) 74.13%
(c) 74.96%
(d) 72.61%

Q14. If $\sec\theta+\tan\theta = 2$, then what is the value of $3\sec\theta+4$?

(a) 31/4
(b) 15/4
(c) 33/4
(d) 17/4

Q15. The surface area of a sphere is $25\pi cm^2$. The volume of the sphere is:

(a) $125\pi/3\ cm^3$
(b) $500\pi/3\ cm^3$
(c) $509\pi/3\ cm^3$

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(d) 125π/6 cm³

Q16. With whose assistance did Chandragupta Maurya overthrow the Nanda dynasty?

(a) Megasthenes
(b) Bindusara
(c) Bimbisara
(d) Chanakya

Q17. Which provision was introduced in the Constitution of India through the 74th Amendment Act?

(a) Part X
(b) Part IX
(c) Part IX-A
(d) Part XI

Q18. An electric pump can fill a tank in 6 hours. Due to a leakage in the tank, it takes 7(1/5) hours to fill the tank. How much time will this leak take to empty the full tank if water does not get in or out of the tank through any other point during this period?

(a) 42 hours
(b) 28 hours
(c) 36 hours
(d) 16 hours

Q19. Which Indian state hosted the Khelo India Youth Games in 2025?

(a) Bihar
(b) Uttar Pradesh
(c) West Bengal
(d) Madhya Pradesh

Q20. Umesh sold an article at a loss of 22%. If he had bought the item at 5% less and had sold it for Rs. 935 more, then he would have gained 15%. Find the cost price (in Rs.) of the article.

(a) 3,241
(b) 3,488
(c) 2,992
(d) 2,839

Q21. What has been the trend in the unemployment rate for individuals aged 15 years and above from 2017-18 to 2023-24?

(a) Remained constant at 6%
(b) Increased from 6% to 7%
(c) Fluctuated between 5% and 6%
(d) Decreased from 6% to 3.2%

Q22. Which positive number should replace both question marks in the give ?

(?)/48 = 243/(?)

(a) 105
(b) 108
(c) 123
(d) 96

Q23. Samrath ranked 31st from the top and 13th from the bottom in his class. How many students are there in his class?

(a) 43
(b) 41
(c) 42
(d) 44

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Q24. In which year was the Pradhan Mantri Awas Yojana (PMAY), a flagship mission aimed at addressing the urban housing shortage in India, launched?

(a) 2018
(b) 2014
(c) 2022
(d) 2015

Q25. If 1 is added to each odd digit and 1 is subtracted from each even digit in the number 8731542, what will be the difference between the highest and lowest digits in the number thus formed?

(a) 4
(b) 6
(c) 7
(d) 5

Q26. A boat takes 18 minutes to go 59.4 km upstream. The ratio of the speed of the boat in still water to that of the stream is 3 : 2. How much total time (in hours) will the boat take to go 29.3 km upstream and 51.5 km downstream?

(a) 0.2
(b) 2.6
(c) 4.5
(d) 3.5

Q27. Look at the sequence of numbers and symbols and answer the question. Counting should be done from left to right only.

Note: All numbers will be single digit numbers only.

(Left) @ * # % * 8 1 4 2 2 & 4 8 9 8 8 # 6 $ $ * 3 (Right)

How many numbers are there that immediately preceded by a number and immediately followed by a symbol?

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

Q28. Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

EJM 13, FKN 15, GLO 17, HMP 19, ?

(a) INQ 21
(b) JRN 22
(c) JNP 22
(d) IOP 21

Q29. What is Lord Thomas Babington Macaulay best known for in the context of British India?

(a) Drafting the Indian Penal Code and promoting English education
(b) Framing the Government of India Act, 1858
(c) Introducing the Vernacular Press Act
(d) Leading the revolt of 1857

Q30. What should come in place of the question mark (?) in the given series?

5 8 17 44 125 ?

(a) 370
(b) 360
(c) 358
(d) 368

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Q31. Which of the following is the greatest number that divides 104 and 133 and leaves 8 and 5 as respective remainders?

(a) 40
(b) 32
(c) 42
(d) 41

Q32. A man spends 76% of his monthly salary on the rent of his house. If every month he also spends Rs. 627 on his conveyance and Rs. 3,947 on his grocery and saves the remaining Rs. 712, his monthly salary is:

(a) Rs. 22,025
(b) Rs. 22,111
(c) Rs. 22,119
(d) Rs. 22,023

Q33. 10 is related to 2 following a certain logic. Following the same logic, 45 is related to 9. To which of the following is 50 related, following the same logic?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(a) 20
(b) 5
(c) 15
(d) 10

Q34. Find the sum of roots for the equation $2x^3 + 7x^2 - 9x + 12$.

(a) (-7)/2
(b) 9/2
(c) -2/7
(d) 9/7

Q35. Eshwar starts from Point Y and drives 13 km towards the south. He then takes a left turn, drives 27 km, turns right and drives 51 km. He then takes a left turn and drives 18 km. He takes a left turn, drives 35 km. He then turns left, drives 45 km, turns left and drives 18 km to stop at Point Z. How far (shortest distance) and towards which direction should he drive in order to reach Point Y again? (All turns are 90-degree turns only unless specified.)

(a) 42 km towards the east
(b) 47 km towards the north
(c) 51 km towards the west
(d) 36 km towards the south

Q36. In industrial settings, Freon-12 is most commonly manufactured by which chemical reaction?

(a) Swarts reaction
(b) Substitution reaction
(c) Wurtz reaction
(d) Elimination reaction

Q37. This question is based on the five, three-digit numbers given below.

(Left) 107 788 634 346 488 (Right)

(Example-697-First digit = 6, second digit = 9 and third digit = 7) (NOTE: All operations to be done from left to right.)

What will be the resultant if the first digit of the highest number is added to the third digit of the lowest number?

(a) 14
(b) 15
(c) 17
(d) 13

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Q38. Find the simplified value of [(17 × 3) × {7 ÷ 7 × (18 - 14/2)}].

(a) 321
(b) 102
(c) 561
(d) 441

Q39. Harry ranked 34th from the top and 25th from the bottom in his class. How many students are there in his class?

(a) 59
(b) 58
(c) 57
(d) 56

Q40. As per World Bank's State of Social Protection Report 2025, between 2010 and 2022, social protection coverage in low- and middle-income countries increased from 41% to _____.

(a) 45%
(b) 47%
(c) 43%
(d) 51%

Q41. Dipti, Priti, Neeti, Reeti, Swati, Kirti and Jyoti are sitting around a circular table, facing the centre. Dipti sits second to the right of Priti. Jyoti sits to the immediate left of Priti. Swati is an immediate neighbour of both Jyoti and Neeti. Reeti is an immediate neighbour of Priti. Who sits second to the left of Neeti?

(a) Reeti
(b) Jyoti
(c) Priti
(d) Dipti

Q42. Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

LEJ21 MFK32 NGL43 OHM54 ?

(a) PIN66
(b) PIN65
(c) PIM65
(d) PIM66

Q43. The Shillong Plateau is divided into several parts. Which of the following is not a part of it?

(a) Mikir Hills
(b) Khasi Hills
(c) Maikala Range
(d) Garo Hills

Q44. The sum of the ages of Ramesh and Mahesh is ($2x^2 - 3x^2y + y^2 + 3x\ y^2$) years. Age of Ramesh is ($x^2 + 3x^2\ y + y^2 + 3x\ y^2$) years. Find the age of Mahesh.

(a) ($x^2 + 6x^2\ y$) years
(b) (x^2-6xy) years
(c) (x^2+6xy) years
(d) ($x^2 - 6x^2\ y$) years

Q45. Which power suffered a decisive defeat in the Malabar region during the Battle of Colachel in 1741?

(a) Austrian East India Company
(b) English East India Company
(c) Dutch East India Company
(d) Spanish East India Company

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Q46. Seven boxes, A, B, C, D, E, F and G, are kept one above the other but not necessarily in the same order. D is kept second from the bottom. Only three boxes are kept between D and E. F is kept in one of the positions below D. Only A is kept between E and G. B is kept in one of the positions above E. How many boxes are kept between A and B?

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

Q47. Seven friends, K, L, M, N, O, P and S, are sitting in a row facing north. Only two people sit to the left of S. Only three people sit between S and O. K sits second to the right of S. Only two people sit between K and M. L sits at some place to the right of N but at some place to the left of P. How many people sit to the right of L?

(a) Two
(b) Three
(c) Four
(d) One

Q48. Look at the sequence of numbers and symbols and answer the question. Counting should be done from left to right only.

(Note that all numbers must be single digits only.)

(Left) 3 £ & 1 2 © 2 5 $ 9 3 © 9 4 3 % 9 3 # © 6 2 (Right)

How many symbols are there that are immidiately preceded by a number and immidiately followed by a symbol?

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

Q49. If '+' means 'subtraction', '−' means 'multiplication', '×' means 'division' and '÷' means 'addition', then what will come in place of the question mark (?) in the following equation? 96 × 8 − 11 ÷ 83 + 22 = ?

(a) 199
(b) 193
(c) 204
(d) 186

Q50. If the mode of the following data is 125, then what is the value of x?

Class	110-115	115-120	120-125	125-130	130-135
Frequency	13	31	39	x	15

(a) 48
(b) 40
(c) 31
(d) 39

Q51. The Lipulekh Pass, important for India's border trade, lies between India and _____.

(a) Bangladesh
(b) Bhutan
(c) Tibet (China)
(d) Afghanistan

Q52. In a certain code language, 'DEAF' is coded as '6458' and 'FLIP' is coded as '4723'. What is the code for 'F' in the given code language?

(a) 7
(b) 2
(c) 8
(d) 4

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Q53. The larger of two supplementary angles is 60° more than the smaller one. The smaller angle (in degree) is:

(a) 60°
(b) 64°
(c) 67°
(d) 65°

Q54. The doctrine of judicial review originated in which country?

(a) United States of America
(b) United Kingdom
(c) India
(d) France

Q55. The mode of the observations 3, 6, 5, 7, 8, 4, 3, 3, 2, 5, 3, 6, 4, 8 and 5 is:

(a) 6
(b) 7
(c) 5
(d) 3

Q56. In 2024, the Government of India announced updates to the Defence Acquisition Procedure (DAP), aiming to boost self-reliance in defence manufacturing. Which of the following is NOT an intended objective of the updated DAP 2024?

(a) Streamlining procurement timelines and reducing bureaucratic hurdles
(b) Eliminating all private sector participation in defence manufacturing
(c) Increasing collaboration between Indian defence firms and global OEMs
(d) Promoting higher indigenisation requirements for defence contracts

Q57. The shorter side of a rectangle is 18 cm less than the longer side. The numerical value of its area is equal to 6 times the numerical value of its perimeter. What is the length (in cm) of its longer side ?

(a) 33
(b) 21
(c) 36
(d) 23

Q58. What defines a conjoint vascular bundle?

(a) Xylem and phloem alternate along the radii
(b) Xylem only on the outer side
(c) Xylem and phloem present on the same radius
(d) Cambium is absent

Q59. Which of the following key combinations is primarily used to access the File menu in most legacy and standard Windows applications?

(a) Alt + Tab
(b) Alt + F
(c) Alt + Insert
(d) Alt + Delete

Q60. A person who spends 55% of his monthly income is able to save Rs. 6,408 per month. His monthly expenses (in Rs.) are :

(a) 7,834
(b) 7,873
(c) 7,832
(d) 7,843

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Q61. Which of the following is a tributary of the Yamuna river?

(a) Son
(b) Teesta
(c) Gomti
(d) Tons

Q62. Select the pair that follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.

LQM : NSN

ETG : GVH

(a) BKL : FJL
(b) WHO : XZQ
(c) BRQ : DTR
(d) GHM : KMO

Q63. On the map of India, the Malwa Plateau is located in which direction relative to the Chotanagpur Plateau?

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

Q64. What will be the difference in population 3 years ago and 2 years ago of a town whose current population of 2,50,000 is increasing at a rate of 25% every year?

(a) 31,450
(b) 32,350
(c) 32,000
(d) 31,250

Q65. In MS PowerPoint's Slide Master view, what is the primary benefit of customising the top-level master slide versus individual layout masters?

(a) Customising the top-level master ensures consistency of universal elements across all slide layouts
(b) The top-level master is only relevant when exporting the presentation to other formats
(c) Individual layout masters cannot be edited unless the top-level master is modified first
(d) Changes to the top-level master overrides all formatting on individual layout masters

Q66. Two banks, A and B, offered loans at 3.5% and 6% per annum, respectively. Atul borrowed an amount of Rs. 5,00,000 from each bank. Find the positive difference between the amounts of simple interest paid to the two banks by Atul after 4 years.

(a) 49,500
(b) 51,500
(c) 51,000
(d) 50,000

Q67. Who among the following was appointed as the Managing Director of National Agriculture Cooperative Marketing Federation of India Ltd (NAFED), in October 2024?

(a) Ashok Chandra
(b) Praveena Rai
(c) Deepak Agarwal
(d) Vipin Kumar

Q68. Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which is the letter-cluster pair that DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) HK - GJ
(b) JH - KL

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(c) PS - OR
(d) LO - KN

Q69. Mr. Alex starts from Point A and drives 9 km towards the South. He then takes a left turn, drives 3 km, turns left and drives 19 km. He then takes a left turn and drives 7 km, turns left drives 5 km. He then takes a right turn and drives 4 km. He takes a final left turn, drives 5 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degrees turns only unless specified)

(a) 4 km to the West
(b) 10 km to the East
(c) 8 km to the East
(d) 6 km to the West

Q70. Which metal was extensively used for coinage in the Mauryan Empire?

(a) Gold
(b) Iron
(c) Copper
(d) Silver

Q71. Δ ABC is similar to Δ PQR, QR = 8 cm, BC = 4 cm, and the perimeter of ΔPQR is 32 cm. Find the perimeter of ΔABC.

(a) 64 cm
(b) 16 cm
(c) 48 cm
(d) 24 cm

Q72. Which of the following physical quantities has the dimension $[M\ L^{-3}]$?

(a) Work
(b) Pressure
(c) Density
(d) Energy

Q73. What should come in place of the question mark (?) in the given series?

517, 494, 461, ?, 365, 302

(a) 418
(b) 408
(c) 428
(d) 438

Q74. What was the poverty headcount ratio in urban areas in 2019-21, as per the National Multidimensional Poverty Index 2023?

(a) 32.59%
(b) 8.65%
(c) 5.27%
(d) 19.28%

Q75. In a certain code language, ‘RATS’ is coded as ‘3571’ and ‘TUBE’ is coded as ‘2146’. What is the code for ‘T’ in the given code language?

(a) 1
(b) 6
(c) 7
(d) 2

Q76. 6 times the present age of Sujatha is 6 years more than 3 times the present age of Vanita. After 7 years, 4 times the age of Vanita will be 6 years less than 6 times the age of Sujatha. The age of Vanita is k years more than that of Sujatha. What is the value of k?

(a) 4

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(b) 6
(c) 2
(d) 7

Q77. Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

(a) TL – BV
(b) ZR – HB
(c) GY – OJ
(d) PH – XR

Q78. Which of the following numbers is divisible by 64?

(a) 5327
(b) 5129
(c) 5760
(d) 4797

Q79. If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 7125843, then what will the sum of the highest and lowest digits in the new number thus formed be?

(a) 8
(b) 6
(c) 9
(d) 7

Q80. The mean proportional between 0.09 and 16 is:

(a) 1.2
(b) 12
(c) 120
(d) 0.12

Q81. What is the primary purpose of the 'Formula Bar' in MS Excel?

(a) To insert charts and images
(b) To display and edit the contents of a cell
(c) To change the background color of cells
(d) To navigate between worksheets

Q82. Who among the following has won the Sahitya Akademi Award 2024 in Dogri for his book 'Ik Hor Ashwthama'?

(a) Madhav Kaushik
(b) Vilas Dangre
(c) Chaman Arora
(d) Velu Aasaan

Q83. Commemorated on National Science Day, CV Raman established key scientific platforms in India. The scientific journal founded by him was _____.

(a) Indian Journal of Physics
(b) Current Science
(c) Nature India
(d) Science India Monthly

Q84. 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 conclusion(s) logically follow(s) from the statements.

Statements:

All bears are cats.

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All cats are pandas.

Some bears are tigers.

Conclusions:

(I) Some tigers are cats.

(II) Some pandas are bears.

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

Q85. In a certain code language,

"A + B' means 'A is the mother of B'

'A - B' means 'A is the brother of B'

'A x B' means 'A is the wife of B'

'A ÷ B' means 'A is the father of B'

Based on the above, how is Q related to Tif ''P x Q – R + S ÷ T'?

(a) Sister's husband's father
(b) Father's mother's brother
(c) Mother's mother's brother
(d) Father's brother's son

Q86. Consider the following statements regarding the Indian Navy's initiative of Indian Ocean Ship (IOS) Sagar in April 2025.

1. The IOS Sagar initiative involves the deployment of INS Sunayna to the Southwest Indian Ocean Region (IOR) with a combined crew of India and nine Friendly Foreign Countries (FFCs).

2. The FFC personnel would undergo training at various naval professional schools at Visakhapatnam.

3. The ship INS Sunayna was planned to be deployed for over a month in April 2025, undertaking port calls at Dar-es-Salaam, Nacala, Port Louis, Port Victoria and Male.

Which of the above statements are correct?

(a) Only 1 and 2
(b) 1, 2 and 3
(c) Only 2 and 3
(d) Only 1 and 3

Q87. Which mission, launched by ISRO in January 2025, carried the NVS-02 navigation satellite?

(a) PSLV-C55
(b) LVM3-M5
(c) GSLV-F15
(d) GSLV-F16

Q88. Which sequence of steps correctly initiates a blank presentation in MS PowerPoint 2016 or later?

(a) File → New → Blank Presentation
(b) View → New Window → Blank
(c) File → Save As → Blank Template
(d) Home → Layout → Clear All

Q89. Which of the following options is INCORRECT regarding the factors that inflamed the feelings of the Sepoys and led to the Revolt of 1857?

(a) Act that required every new recruit to give an undertaking to serve overseas
(b) Forceful conversions to Christianity
(c) Army maintaining chaplains at state cost and promotion of Christian propaganda among the sepoys
(d) Compulsion on sepoys to wear their caste marks and follow their own caste

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Q90. Which city hosted the International Cooperative Alliance (ICA) Global Cooperative Conference and General Assembly in November 2024?

(a) New Delhi
(b) Mumbai
(c) Bengaluru
(d) Hyderabad

Q91. Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ?

#: ACG:: CEI: %

(a) = WYC, % = KIM
(b) = WYC, % = GIM
(c) = WYC, % = GIK
(d) = XYC, % = GIM

Q92. In a certain code language, ‘DISH’ is coded as ‘4268’ and ‘HUNT’ is coded as ‘3527’. What is the code for ‘H’ in the given code language?

(a) 6
(b) 3
(c) 7
(d) 2

Q93. The mean proportional between $(9 + 4\sqrt{5})$ and $(18 - 8\sqrt{5})$

(a) $\sqrt{17}$
(b) $\sqrt{15}$
(c) $\sqrt{2}$
(d) $\sqrt{5}$

Q94. What is the primary benefit of having local self-government institutions like Panchayats in India?

(a) They are closest to the people and understand local problems
(b) They replace the entire administrative framework of the State
(c) They solely focus on revenue collection.
(d) They provide direct access to national policy-making.

Q95. Which of the following classical dance forms was performed by 'Maharis' as part of temple service?

(a) Kathak
(b) Kathakali
(c) Odissi
(d) Kuchipudi

Q96. Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ?

: WQM :: TNJ : %

(a) = KUY, % = QKJ
(b) = ZTP, % = QKG
(c) = JTP, % = MWR
(d) = MKP, % = QPI

Q97. What percentage of the urban population in India lives in slum conditions as per the Census 2011?

(a) 17.4%
(b) 14.7%
(c) 18.2%
(d) 12.8%

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Q98. A shopkeeper buys 20 pens at Rs. 15 each and another 30 pens at Rs. 10 each. He mixes all the pens and sells them at Rs. 14 each. What is the profit or loss per pen he makes on an average?

(a) Rs. 0.20 loss
(b) Rs. 1 profit
(c) Rs. 0.50 loss
(d) Rs. 2 profit

Q99. A and B complete a work in 6 days. If A alone can do it in 7 days, then B alone can do it in _____ days.

(a) 43
(b) 42
(c) 44
(d) 41

Q100. In the 2024 Jammu & Kashmir Assembly elections, from which constituency did the current Chief Minister of J&K contest, and which party does he/she represent?

(a) Ganderbal, Jammu & Kashmir People's Democratic Party (JKPDP)
(b) Ganderbal, Jammu & Kashmir National Conference (JKNC)
(c) Baramulla, Jammu & Kashmir National Conference (JKNC)
(d) Srinagar, Indian National Congress (INC)

ANSWER KEY

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

SOLUTIONS

Q1. Answer: (a) 92

Shortcut Trick
Time ratio (Initial : New) = 6 : 3 = 2 : 1
Since Distance is constant, Speed ratio is inverse of Time ratio = 1 : 2
1 unit (Initial Speed) = 92 km/hr
Increase in speed required = 2 − 1 = 1 unit = 92 km/hr
Therefore The correct answer is 92 km/hr.
Alternate Method
Given: Initial Speed = 92 km/hr, Initial Time = 6 hours, New Time = 3 hours
Formula Used: Distance = Speed × Time
=> Total Distance = 92 km/hr × 6 hours
=> Total Distance = 552 km
=> Required New Speed = Total Distance ÷ New Time
=> New Speed = 552 ÷ 3 = 184 km/hr
=> Increase in Speed = New Speed − Initial Speed

=> Increase in Speed = 184 − 92 = 92 km/hr

Therefore The correct answer is 92 km/hr.

Additional Information

Inverse Variation Rule

When distance is constant, speed and time are inversely proportional (S1 × T1 = S2 × T2).

Average Speed

If a journey is covered in two equal distances at speeds x and y, average speed = 2xy ÷ (x + y).

Relative Speed

Speed of two objects moving in the same direction is (S1 − S2) and in opposite directions is (S1 + S2).

Q2. Answer: (c) 516

Given equation:

122 ÷ 4 + 65 × 5 - 41 = ?

Interchanging operators:

When '+' and '−' are interchanged and '×' and '÷' are interchanged, the new equation becomes:

122 × 4 − 65 ÷ 5 + 41

Solution:

Following the order of operations (BODMAS/PEMDAS):

= 122 × 4 - 65 ÷ 5 + 41

= 488 - 13 + 41

= 475 + 41 = 516

Hence, the correct answer is "Option 3".

Q3. Answer: (d) Right-click → Select New → Folder

The Correct answer is Right-click → Select New → Folder

Key Points

• To create a new folder in Windows 11 OS from the desktop, you can use the context menu by right-clicking.

• When you right-click on an empty space on the desktop, a menu appears with various options.

• Selecting the "New" option from the menu expands another sub-menu.

• In the sub-menu, choose "Folder", which automatically creates a new folder on the desktop.

• The newly created folder appears with the default name "New Folder", which can be renamed by typing a desired name immediately or later.

• This method is widely used as it is quick and user-friendly.

• It does not require any additional software or shortcuts, making it ideal for users of all skill levels.

• The functionality is consistent across various versions of Windows, including Windows 10 and Windows 11.

Additional Information

• Press Alt + F4

• The Alt + F4 shortcut is used to close the active window or application in Windows.

• This shortcut does not create a new folder and serves a different purpose related to window management.

• Drag a file to Desktop

• Dragging a file to the desktop does not create a new folder but moves or copies the selected file to the desktop.

• This action is used for file organization rather than folder creation.

• Press Ctrl + N

• Ctrl + N is commonly used to create a new document or window in applications like Microsoft Word or web browsers.

• This shortcut does not work for creating a folder on the desktop in Windows OS.

Q4. Answer: (c) 2014

The Correct answer is 2014.

Key Points

• The 'Make in India' initiative was launched by the Government of India on 25th September 2014.

• The program was aimed at transforming India into a global manufacturing hub.

• It focuses on enhancing skill development, fostering innovation, and protecting intellectual property.

• The initiative encourages both domestic and foreign companies to manufacture their products in India.

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• The program is managed by the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry.
• 'Make in India' emphasizes key sectors such as automobiles, chemicals, IT, pharmaceuticals, textiles, defense manufacturing, and food processing, among others.
• The initiative aims to improve the ease of doing business and strengthen India's position in the global supply chain.
• India's ranking in the World Bank's Ease of Doing Business Index has significantly improved since the launch of this program.
• The 'Make in India' initiative aligns with the broader vision of achieving a $5 trillion economy by 2025.

Q5. Answer: (b) OD 10

The pattern consists of two parts:
• Letter Shift: The first letter is shifted backward by 4 positions, and the second letter is shifted backward by 3 positions.
• Number Shift: The number is increased by 15.
Applying the logic to the given pairs:
TN 14 is related to PK 29
JD 3 is related to FA 18
Applying the logic to SG -5:
SG -5 is related to what?
Following this logic, SG -5 is related to OD 10.
Hence, the correct answer is "Option 2".

Q6. Answer: (c) 23

Shortcut Trick
Property: If each observation in a data set is increased by a constant k, the mean average of the set also increases by exactly k.
New Average = Old Average + Increase Value
=> New Average = 18 + 5 = 23
Therefore The correct answer is 23.
Alternate Method
Given: Number of observations = 6 | Original average = 18 | Increase per number = 5
Formula Used: Average = Sum of observations ÷ Total number of observations
=> Sum of original 6 numbers = 18 × 6 = 108
=> Total increase after adding 5 to each number = 5 × 6 = 30
=> New Total Sum = 108 + 30 = 138
=> New Average = 138 ÷ 6 = 23
Therefore The correct answer is 23.
Additional Information
Effect of Operations on Average
If every term is multiplied by k, the average is multiplied by k. If every term is divided by k, the average is divided by k.
Average of Consecutive Numbers
The average of n consecutive numbers is the middle term if n is odd, or the mean of the two middle terms if n is even.
Weighted Average Formula
Weighted Average = (n1x1 + n2x2) ÷ (n1 + n2), used when combining two groups with different averages.

Q7. Answer: (c) Junagadh caves

The Correct answer is Junagadh caves.
Key Points
• The Junagadh caves are a group of Buddhist caves located in the Junagadh district of Gujarat, India.
• These caves are famous for their high citadel and architectural significance.
• The caves are divided into three main groups: Uparkot caves, Khapra Kodiya caves, and the Baba Pyare caves.
• They were primarily used as monasteries and meditation centers by Buddhist monks during the 2nd to 4th centuries CE.
• The caves are adorned with pillars, water tanks, and prayer halls, reflecting the influence of Buddhist rock-cut architecture.
• The Uparkot caves, in particular, are known for their location within a high citadel, offering panoramic views of the surroundings.
• The intricate carvings and structural designs of the caves showcase the advanced techniques of ancient Indian craftsmen.
Additional Information

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• Sudama caves
• The Sudama caves are part of the Barabar caves, located in Bihar, India.
• These caves are the earliest examples of rock-cut architecture in India and were used by the Ajivika sect.
• The caves were carved during the reign of Emperor Ashoka in the 3rd century BCE and are known for their polished interior surfaces.
• Ellora caves
• The Ellora caves are a UNESCO World Heritage Site located in Maharashtra, India.
• They represent a mix of Buddhist, Hindu, and Jain religious traditions.
• The caves are renowned for the Kailasa temple, a monolithic rock-cut structure dedicated to Lord Shiva.
• Bagh caves
• The Bagh caves are located in the Dhar district of Madhya Pradesh, India.
• These caves are famous for their ancient mural paintings, which reflect Indian art from the Gupta period.
• They are associated with Buddhist monks who used them as viharas (monasteries).

Q8. Answer: (c) 25%

Shortcut Trick
Use the relationship: MP ÷ CP = (100 + P%) ÷ (100 − D%).
Given: MP = 152 (if CP = 100) and Profit = 14%.
152 ÷ 100 = (100 + 14) ÷ (100 − D).
152 ÷ 100 = 114 ÷ (100 − D) => 100 − D = (114 × 100) ÷ 152.
100 − D = 75 => D = 25%.
Therefore The correct answer is 25%.
Alternate Method
Given: Marked Price (MP) is 52% above Cost Price (CP), Profit = 14%.
Formulas: SP = CP × (100 + P%) ÷ 100 | Discount% = (MP − SP) ÷ MP × 100
=> Let Cost Price (CP) = 100.
=> Marked Price (MP) = 100 + 52% of 100 = 152.
=> Desired Profit = 14%, so Selling Price (SP) = 100 + 14 = 114.
=> Discount Amount = MP − SP = 152 − 114 = 38.
=> Discount% = (38 ÷ 152) × 100 = 1/4 × 100 = 25%.
Therefore The correct answer is 25%.
Additional Information
Relation between CP, MP, Profit and Discount
The ratio of MP to CP is always constant for a given profit and discount: MP/CP = (100 + Gain%) / (100 − Discount%).
Marked Price
It is the price displayed on the label of an item, also known as the List Price.

Q9. Answer: (c) 3

Shortcut Trick
Perform Prime Factorisation of 6627.
6627 = 3 × 13 × 13 × 13 = $3^1 \times 13^3$.
To make it a perfect square, all prime factors must have even powers.
Required multipliers = $3^1 \times 13^1$ = 39. (Wait, let us re-check the division).
6627 ÷ 3 = 2209. We know 2209 = 47^2.
Therefore 6627 = 3 × 47^2. The unpaired factor is 3.
Therefore The correct answer is 3.
Alternate Method
Given: Number = 6627.
Step-by-step Calculation:
=> Sum of digits of 6627 = 6 + 6 + 2 + 7 = 21 (Divisible by 3).
=> 6627 ÷ 3 = 2209.
=> 2209 is a perfect square since √2209 = 47.

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=> Prime factorisation of 6627 = $3^1 \times 47^2$.

=> For a number to be a perfect square, the power of every prime factor must be even.

=> Here, 3 has a power of 1. To make it even, we must multiply by 3.

Therefore The correct answer is 3.

Additional Information

Perfect Square Condition

A number is a perfect square if all its prime factors appear in pairs (even exponents).

Smallest Multiplier/Divisor

To find the smallest number to multiply/divide to make a perfect square, identify the unpaired factors in the prime factorisation.

Divisibility Rule of 3

A number is divisible by 3 if the sum of its digits is divisible by 3.

Q10. Answer: (b) Indian Famine Commission

The Correct answer is Indian Famine Commission.

Key Points

• The Indian Famine Commission was established in 1880 to study recurring famines in India and recommend measures to prevent them.

• The commission highlighted the importance of establishing rural credit institutions to help farmers during times of distress.

• The recommendations of the Indian Famine Commission influenced the enactment of the Cooperative Credit Societies Act of 1904, which aimed to provide affordable credit to farmers and prevent exploitation by moneylenders.

• The act was a landmark step in the development of cooperative movements in India, especially in rural areas.

• It laid the foundation for the establishment of cooperative societies, which were designed to provide credit at reasonable rates and improve the financial stability of farmers.

• The initiative was crucial for addressing the agricultural distress caused by recurring famines and boosting rural development.

Additional Information

• Royal Commission on Agriculture

• The Royal Commission on Agriculture was set up in 1926 to study agricultural issues in India and recommend solutions for improving the agrarian economy.

• Its recommendations were more focused on land tenure systems, irrigation, marketing, and agricultural practices, rather than rural credit.

• Hunter Commission

• The Hunter Commission, established in 1882, dealt with education reforms in India and had no direct connection to agricultural credit or the Cooperative Credit Societies Act.

• It primarily focused on expanding and improving primary and secondary education in India.

• Simon Commission

• The Simon Commission, formed in 1927, focused on political reforms in India and assessing the working of the Government of India Act, 1919.

• It did not address agricultural credit or cooperative movements.

Q11. Answer: (d) President of India

The Correct answer is President of India

Key Points

• Under Article 75(4) of the Constitution of India, the oath of office and secrecy is administered to the Union Ministers by the President of India.

• The oath is taken in accordance with the provisions of the Third Schedule of the Constitution.

• The President ensures that the Union Ministers pledge to uphold the Constitution of India, maintain secrecy, and perform their duties faithfully.

• The President is the head of the state and serves as the constitutional authority responsible for appointing Union Ministers as per the advice of the Prime Minister.

• This process reflects the principle of maintaining the integrity and solemnity of the parliamentary democracy in India.

Additional Information

• Chief Justice of India

• The Chief Justice of India (CJI) primarily heads the judiciary and does not administer the oath of office and secrecy to Union Ministers.

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• The Chief Justice is responsible for interpreting the Constitution and overseeing the functioning of the Supreme Court of India.

• However, the CJI administers the oath to the President of India and Governors in specific circumstances.

• Prime Minister

• The Prime Minister acts as the head of the government and advises the President on the appointment of Union Ministers.

• While the Prime Minister plays a significant role in governance, he/she does not administer the oath to Union Ministers.

• Vice President

• The Vice President of India is primarily responsible for officiating in the absence of the President and serves as the Chairman of the Rajya Sabha.

• The Vice President does not have the constitutional authority to administer the oath to Union Ministers.

Q12. Answer: (a) Rs. 5 lakh

The Correct answer is Rs. 5 lakh.

Key Points

• As of April 2025, the Reserve Bank of India (RBI) has introduced flexibility in transaction limits for UPI payments made at in-person merchant locations.

• The revised limits range from Rs. 2 lakh to Rs. 5 lakh, enhancing the usability of UPI for higher-value transactions.

• Unified Payments Interface (UPI) is a real-time payment system developed by the National Payments Corporation of India (NPCI), enabling instant money transfer between bank accounts.

• This move aims to encourage the adoption of digital payments, particularly for high-value purchases, fostering a cashless economy in India.

• The decision aligns with the RBI's focus on promoting financial inclusion and supporting the growing digital infrastructure in merchant transactions.

• Such flexibility is expected to benefit sectors like retail, e-commerce, and luxury goods, where higher transaction limits are essential.

• The introduction of higher limits shows the RBI's confidence in the security and reliability of UPI systems, ensuring safe transactions for users.

Q13. Answer: (c) 74.96%

Shortcut Trick

Effective price percentage = (100 − d1)% × (100 − d2)% × (100 − d3)%

Effective price = 100 × (92/100) × (84/100) × (97/100)

Effective price = 0.92 × 0.84 × 97% = 0.7728 × 97%

Effective price = 74.9616% ≈ 74.96%

Therefore The correct answer is 74.96%.

Alternate Method

Given: Three consecutive discounts of 8%, 16%, and 3%.

Formulas: Selling Price (SP) = Marked Price (MP) × (100 − d1)/100 × (100 − d2)/100 × (100 − d3)/100

=> Let the Marked Price be 100 units.

=> Price after 8% discount = 100 − 8 = 92 units.

=> Price after 16% discount = 92 − (16% of 92) = 92 − 14.72 = 77.28 units.

=> Price after 3% discount = 77.28 − (3% of 77.28) = 77.28 − 2.3184 = 74.9616 units.

=> Effective Price Percentage = (74.9616/100) × 100 ≈ 74.96%.

Therefore The correct answer is 74.96%.

Additional Information

Effective Discount Rate

To find the total discount, use the formula for successive discounts: a + b − (ab/100). Subtracting this from 100 gives the final price.

Relationship between MP and SP

Selling Price (SP) = Marked Price (MP) × (1 − Discount%/100). The effective price percentage is essentially the ratio of SP to MP expressed as a percentage.

Q14. Answer: (a) 31/4

Shortcut Trick

Given secθ + tanθ = 2. Then secθ − tanθ = 1/2.

Adding both: 2secθ = 2 + 1/2 = 5/2 => secθ = 5/4.
Find: 3secθ + 4 = 3(5/4) + 4 = 15/4 + 16/4 = 31/4.
Therefore The correct answer is 31/4.
Alternate Method
Given: secθ + tanθ = 2
Formula Used: $sec^2\theta - tan^2\theta = 1$ => (secθ + tanθ)(secθ − tanθ) = 1
=> 2 × (secθ − tanθ) = 1
=> secθ − tanθ = 1/2
=> (secθ + tanθ) + (secθ − tanθ) = 2 + 1/2
=> 2secθ = 5/2
=> secθ = 5/4
=> 3secθ + 4 = 3 × (5/4) + 4
=> 15/4 + 4 = (15 + 16)/4 = 31/4
Therefore The correct answer is 31/4.
Additional Information
Trigonometric Identity
The identity $1 + tan^2\theta = sec^2\theta$ leads to the reciprocal relationship (secθ + tanθ) = 1 / (secθ − tanθ).
Cosecant Identity
Similarly, $1 + cot^2\theta = cosec^2\theta$, meaning (cosecθ + cotθ) = 1 / (cosecθ − cotθ).
Pythagorean Triplets
Since secθ = 5/4 (Hypotenuse/Base), the Perpendicular is $\sqrt{(5^2 - 4^2)} = 3$, forming a 3-4-5 triplet.

Q15. Answer: (d) 125π/6 cm³

Shortcut Trick
Given Surface Area = $4\pi r^2 = 25\pi$ => $r^2 = 25/4$ => r = 5/2 cm.
Volume = $(4/3)\pi r^3 = (4/3)\pi(5/2)^3 = (4/3)\pi(125/8)$.
On simplifying, Volume = (125π)/6 cm³.
Therefore The correct answer is 125π/6 cm³.
Alternate Method
Given:
Surface Area of Sphere = 25π cm²
Formula Used:
=> Surface Area (S) = $4\pi r^2$
=> Volume (V) = $(4/3)\pi r^3$
Calculations:
=> $4\pi r^2 = 25\pi$
=> $r^2 = 25/4$
=> r = √(25/4) = 5/2 cm
=> Volume = (4/3) × π × $(5/2)^3$
=> Volume = (4/3) × π × (125/8)
=> Volume = (1 × π × 125) / (3 × 2)
=> Volume = 125π/6 cm³
Therefore The correct answer is 125π/6 cm³.
Additional Information
Properties of Sphere
A sphere is a perfectly round geometrical object in three-dimensional space. Surface Area = $4\pi r^2$ and Volume = $(4/3)\pi r^3$.
Hemisphere Formulas
For a solid hemisphere, Curved Surface Area = $2\pi r^2$, Total Surface Area = $3\pi r^2$, and Volume = $(2/3)\pi r^3$.
Ratio relations
If the ratio of radii of two spheres is a:b, then the ratio of their surface areas is $a^2:b^2$ and the ratio of their volumes is $a^3:b^3$.

Q16. Answer: (d) Chanakya

The Correct answer is Chanakya.

Key Points

• Chanakya, also known as Kautilya or Vishnugupta, was a renowned ancient Indian philosopher, economist, and statesman.

• He played a pivotal role in assisting Chandragupta Maurya in overthrowing the Nanda dynasty and establishing the Maurya Empire.

• Chanakya is credited with authoring the Arthashastra, an ancient Indian treatise on statecraft, economic policy, and military strategy.

• He was a master strategist who used his knowledge and wit to mentor Chandragupta Maurya and unite the fragmented regions of India under a single empire.

• Chanakya's guidance was instrumental in planning and executing the strategies to defeat the Nandas, who were powerful rulers at the time.

• Chanakya's contributions to Indian political thought and governance are considered pioneering and are still studied widely.

• He is often referred to as the "Machiavelli of India" for his diplomatic and political acumen.

Additional Information

• Megasthenes

• Megasthenes was a Greek ambassador to the Mauryan court during the reign of Chandragupta Maurya.

• He authored the book Indica, which provides insights into the Mauryan Empire and ancient Indian society.

• However, he did not play any role in the overthrow of the Nanda dynasty.

• Bindusara

• Bindusara was the son of Chandragupta Maurya and the second ruler of the Maurya Empire.

• He succeeded Chandragupta and expanded the empire further but was not involved in the overthrow of the Nandas.

• Bimbisara

• Bimbisara was a ruler of the Haryanka dynasty in ancient India and a contemporary of the Buddha.

• He ruled the kingdom of Magadha but lived long before Chandragupta and Chanakya.

Q17. Answer: (c) Part IX-A

The Correct answer is Part IX-A.

Key Points

• The 74th Amendment Act of the Indian Constitution, enacted in 1992, specifically introduced Part IX-A, which deals with the governance of urban local bodies.

• This amendment provides a constitutional status to urban local self-governments such as Municipal Corporations, Municipalities, and Nagar Panchayats.

• It aims to ensure decentralization in urban governance and encourage grassroots democracy in urban areas.

• Article 243-P to Article 243-ZG were added to the Constitution under Part IX-A, detailing the composition, powers, and responsibilities of urban local bodies.

• It mandates the establishment of Ward Committees in municipalities with a population of over 3 lakh, ensuring greater citizen participation.

• The amendment also outlines provisions for the reservation of seats for Scheduled Castes, Scheduled Tribes, and women in urban local bodies.

• A State Finance Commission is to be constituted to recommend measures for the financial health of these bodies.

• The 74th Amendment is significant for promoting good governance and addressing the challenges of urbanization in India.

Additional Information

• Part X

• Part X of the Constitution deals with the Scheduled and Tribal Areas.

• It includes provisions for the administration and governance of these areas to protect the interests of Scheduled Tribes.

• It covers Articles 244 and 244A.

• Part IX

• Part IX of the Constitution deals with Panchayati Raj Institutions and was added through the 73rd Amendment Act, 1992.

• It focuses on rural local governance and includes Articles 243 to 243-O.

• Part XI

• Part XI of the Constitution deals with the relations between the Union and the States.

• It includes provisions related to legislative and administrative relations, covered under Articles 245 to 263.

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Q18. Answer: (c) 36 hours

Shortcut Trick

Filling time (A) = 6 hours

Net filling time (A − Leak) = 7(1/5) = 36/5 hours

Leak empty time = (Product of times) ÷ (Difference of times)

Leak empty time = (6 × 36/5) ÷ (36/5 − 6) = (216/5) ÷ (6/5) = 36 hours

Therefore The correct answer is 36 hr.

Alternate Method

Person / Pipe Time (hr) Total Work (LCM) Efficiency Pump (A) 6 36 units 6 Pump + Leak (A + L) 36/5 5

Let the total capacity of the tank be 36 units (LCM of 6 and 36/5).

=> Efficiency of Pump (A) = 36 ÷ 6 = 6 units/hr

=> Combined Efficiency (A + Leak) = 36 ÷ (36/5) = 5 units/hr

=> Efficiency of Leak (L) = (A + L) − A = 5 − 6 = −1 unit/hr

=> Time taken by leak to empty = Total Work ÷ Efficiency of Leak

=> Time = 36 ÷ 1 = 36 hours

Therefore The correct answer is 36 hr.

Additional Information

Pipes & Cisterns Basics

Efficiency of an inlet pipe is taken as positive, while that of an outlet pipe or leak is taken as negative.

Time Calculation Formula

If pipe A fills in 'x' hours and pipe B empties in 'y' hours (y > x), then net filling time = (xy) ÷ (y − x).

Total Work Assumption

Always take the LCM of individual time durations to represent the total capacity of the tank for easier calculations.

Q19. Answer: (a) Bihar

The Correct answer is Bihar.

Key Points

• The Khelo India Youth Games is a flagship initiative by the Government of India aimed at promoting sports culture in the country.

• In 2025, the state of Bihar was chosen to host the prestigious event, showcasing its growing commitment to sports infrastructure and development.

• Bihar is focusing on creating a conducive environment for young athletes by improving sports facilities and encouraging participation at grassroots levels.

• The selection of Bihar as the host state highlights its efforts to rejuvenate its image as an emerging hub for sports events in India.

• The event is expected to bring together thousands of young athletes from across India, competing in various disciplines, thus fostering unity and sportsmanship.

• Khelo India Youth Games serves as a platform for identifying and nurturing talent, ensuring that promising athletes receive the support and training they need to excel at national and international levels.

• The initiative aligns with the government's vision of making India a global sporting powerhouse by promoting fitness and competitive spirit among its youth.

Additional Information

• Uttar Pradesh

• Uttar Pradesh is one of India's largest states and has hosted several important events, but it was not selected to host the Khelo India Youth Games in 2025.

• The state is known for its efforts in promoting sports, with initiatives like the Major Dhyan Chand Sports University in Meerut.

• West Bengal

• West Bengal has a rich history of sports, particularly in football and cricket, but it was not the host for the 2025 Khelo India Youth Games.

• The state is known for iconic venues like the Eden Gardens, one of the largest cricket stadiums in the world.

• Madhya Pradesh

• Madhya Pradesh has been actively promoting sports and was the host for the Khelo India Youth Games in 2023, but it was not selected for 2025.

• The state has invested in building sports infrastructure, including the international-level stadiums and training centers.

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Q20. Answer: (c) 2,992

Shortcut Trick

Let initial Cost Price (CP1) be 100 units.

Initial Selling Price (SP1) at 22% loss = 100 − 22 = 78 units.

New Cost Price (CP2) at 5% less = 95 units.

New Selling Price (SP2) at 15% gain = 95 × 115 ÷ 100 = 109.25 units.

Difference in SP = 109.25 − 78 = 31.25 units => 935.

1 unit = 935 ÷ 31.25 = 29.92 Therefore 100 units = Rs. 2,992.

Therefore The correct answer is Rs. 2,992.

Alternate Method

Formulas: SP = CP × (100 ± P/L)% | CP = SP × 100 ÷ (100 ± P/L)%

=> Let the initial cost price be x.

=> Initial selling price SP1 = x × (100 − 22) ÷ 100 = 0.78x.

=> New cost price CP2 = x × (100 − 5) ÷ 100 = 0.95x.

=> New selling price SP2 = 0.95x × 115 ÷ 100 = 1.0925x.

=> According to the question: SP2 − SP1 = 935.

=> 1.0925x − 0.78x = 935 => 0.3125x = 935.

=> x = 935 ÷ 0.3125 = 2,992.

Therefore The correct answer is Rs. 2,992.

Additional Information

Percentage Change in CP and SP

When both CP and SP are varied, calculate the new values relative to the original CP (usually 100) to find the absolute difference in units.

Profit and Loss Basics

Profit % is always calculated on CP unless stated otherwise. Profit % = (Profit ÷ CP) × 100.

Q21. Answer: (d) Decreased from 6% to 3.2%

The Correct answer is Decreased from 6% to 3.2%.

Key Points

• The unemployment rate refers to the percentage of individuals in the labor force who are actively seeking work but are unable to find employment.

• The trend from 2017-18 to 2023-24 indicates a significant decrease in the unemployment rate for individuals aged 15 years and above, dropping from 6% to 3.2%.

• This decline demonstrates an improvement in the employment scenario, possibly due to various government initiatives, schemes, and an increase in economic activities.

• Factors such as skill development programs, enhanced focus on manufacturing, and promotion of entrepreneurship may have contributed to this positive trend.

• The data is often sourced from reports such as the Periodic Labour Force Survey (PLFS), which provides critical insights into employment and unemployment patterns.

• This reduction reflects efforts to enhance job creation and improve the economic stability of the country.

Additional Information

• Government efforts and schemes

• Programs such as Skill India Mission, Make in India, and promotion of self-employment have likely played a role in reducing unemployment.

• Enhanced focus on vocational training and creation of job opportunities in both urban and rural areas have contributed to this trend.

Q22. Answer: (b) 108

Given:

(?)/48 = 243/(?)

Formula used:

If a/b = c/a, then $a^2 = b \times c$

Calculation:

=> $?^2 = 48 \times 243$

=> $?^2 = 11664$

=> ? = 108

Therefore The positive number is 108.

Q23. Answer: (a) 43

Given:

Samrath's rank from the top = 31st.

Samrath's rank from the bottom = 13th.

Total persons = (Rank from Top) + (Rank from Bottom) - 1

Total students = 31 + 13 - 1

= 44 - 1 = 43

Thus, there are 43 students in the class.

Hence, the correct answer is "Option 1".

Q24. Answer: (d) 2015

The Correct answer is 2015.

Key Points

• The Pradhan Mantri Awas Yojana (PMAY) was launched on 25th June 2015 by the Government of India.

• It is a flagship mission aimed at providing housing for all by the year 2022, with a focus on the economically weaker sections (EWS), low-income groups (LIG), and middle-income groups (MIG).

• PMAY consists of two components: PMAY-Urban (PMAY-U) and PMAY-Gramin (PMAY-G), addressing housing needs in urban and rural areas respectively.

• The mission is implemented under four verticals: In-situ Slum Redevelopment (ISSR), Credit Linked Subsidy Scheme (CLSS), Affordable Housing in Partnership (AHP), and Beneficiary-led Construction (BLC).

• Under the Credit Linked Subsidy Scheme (CLSS), interest subsidies are provided on housing loans for eligible beneficiaries.

• The scheme also promotes the use of sustainable and eco-friendly construction technologies.

• PMAY supports the vision of the Housing for All initiative, aligning with the goals of inclusive growth and urban development.

• It has helped millions of families across India to achieve their dream of owning a home, especially those belonging to vulnerable sections of society.

Additional Information

• 2018

• 2018 was not the year of the launch of PMAY, but during this year, several milestones were achieved under the scheme, including increased housing allocations and implementation advancements.

• 2014

• While 2014 marked the beginning of several new initiatives under the leadership of the Narendra Modi government, PMAY was officially launched in 2015.

• 2022

• 2022 was the target year for achieving the Housing for All goal under PMAY, but it was not the year of the scheme's launch.

Q25. Answer: (c) 7

Given number: 8731542

Performing the operations:

Original Digit	**8**	**7**	**3**	**1**	**5**	**4**	**2**
Operation	8 - 1	7 + 1	3 + 1	1 + 1	5 + 1	4 - 1	2 - 1
New Digit	7	8	4	2	6	3	1

The new number formed is: 7842631

Highest digit in the new number: 8

Lowest digit in the new number: 1

Difference between the highest and lowest digits: 8 - 1 = 7.

Hence, the correct answer is "Option 3".

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Q26. Answer: (a) 0.2

Shortcut Trick

Upstream Speed (U) = 59.4 km ÷ (18/60) h = 198 kmph.

Ratio of Still Water (u) to Stream (v) = 3 : 2 => Upstream ratio (u−v) = 3 − 2 = 1 unit.

1 unit = 198 kmph => u = 3 × 198 = 594 kmph, v = 2 × 198 = 396 kmph.

Downstream Speed (D) = u + v = 5 unit = 5 × 198 = 990 kmph.

Total Time = (29.3 ÷ 198) + (51.5 ÷ 990) ≈ 0.148 + 0.052 = 0.2 hours.

Therefore The correct answer is 0.2 hours.

Alternate Method

Given: Upstream Distance = 59.4 km, Time = 18 min = 0.3 hours. Ratio u : v = 3 : 2.

Formula Used: Speed = Distance ÷ Time; Upstream Speed (U) = u − v; Downstream Speed (D) = u + v.

=> Upstream Speed (U) = 59.4 ÷ 0.3 = 198 kmph.

=> Let u = 3x and v = 2x. Then U = 3x − 2x = x.

=> x = 198 kmph.

=> Downstream Speed (D) = 3x + 2x = 5x = 5 × 198 = 990 kmph.

=> Time for 29.3 km Upstream = 29.3 ÷ 198 ≈ 0.14798 hours.

=> Time for 51.5 km Downstream = 51.5 ÷ 990 ≈ 0.05202 hours.

=> Total Time = 0.14798 + 0.05202 = 0.2 hours.

Therefore The correct answer is 0.2 hours.

Additional Information

Relative Speed in Water

Upstream Speed = Speed of boat (u) − Speed of stream (v). Downstream Speed = Speed of boat (u) + Speed of stream (v).

Still Water and Stream Speed Formulas

Speed of boat in still water (u) = (Downstream + Upstream) ÷ 2. Speed of stream (v) = (Downstream − Upstream) ÷ 2.

Time, Speed, Distance Relation

Time = Distance ÷ Speed. Ensure all units are consistent (e.g., km and hours or m and seconds) before calculation.

Q27. Answer: (c) 2

Given series:

(Left) @ * # % * 8 1 4 2 2 & 4 8 9 8 8 # 6 $ $ * 3 (Right)

Condition to be checked:

Number → Number → Symbol

@ * # % * 8 1 4 2 2 & 4 8 9 8 8 # 6 $ $ * 3

There are two such numbers in the above arrangement (2 2 &, 8 8 #).

Hence, the correct answer is "Option 3".

Q28. Answer: (a) INQ 21

The pattern followed here is.

Thus, the missing term in the series is INQ 21.

Hence, the correct answer is Option 1.

Q29. Answer: (a) Drafting the Indian Penal Code and promoting English education

The Correct answer is Drafting the Indian Penal Code and promoting English education.

Key Points

• Lord Thomas Babington Macaulay was a British historian, politician, and lawmaker who played a pivotal role in shaping the administrative and educational policies of British India.

• He is best known for drafting the Indian Penal Code (IPC), which became the backbone of the Indian legal system and is still in use today with modifications.

• The IPC was a comprehensive code of criminal law for India, and it was officially enacted in 1860.

• In addition to his work on the IPC, Macaulay strongly advocated for the promotion of English education in India.

• His famous "Minute on Education" (1835) laid the foundation for the use of English as the medium of instruction in Indian schools and colleges.

• Macaulay believed that English education would create a class of Indians who were "Indian in blood and color, but English in

taste, in opinions, in morals, and in intellect."
• His efforts significantly influenced the spread of Western education, science, and literature in India.
Additional Information
• Framing the Government of India Act, 1858
• The Government of India Act, 1858 marked the formal transfer of power from the East India Company to the British Crown.
• This Act was introduced after the Indian Rebellion of 1857 to improve governance in India.
• However, Macaulay was not directly involved in drafting this Act.
• Introducing the Vernacular Press Act
• The Vernacular Press Act of 1878 was introduced by Lord Lytton, not Macaulay.
• This Act aimed to curb the freedom of the Indian-language press and suppress criticism of British policies.
• Leading the revolt of 1857
• The Indian Rebellion of 1857 was a large-scale uprising against British rule, but Macaulay was not involved in leading it.
• By the time of the revolt, Macaulay had already returned to England and was not in India.

Q30. Answer: (d) 368

The logic followed here is:
Thus, the missing term in the series is 368.
Hence, the correct answer is "Option 4";

Q31. Answer: (b) 32

Shortcut Trick
Subtract the remainders from the given numbers: 104 − 8 = 96 and 133 − 5 = 128.
Find the HCF of 96 and 128.
HCF(96, 128) = 32 because 32 × 3 = 96 and 32 × 4 = 128.
Therefore The correct answer is 32.
Alternate Method
Given: Numbers are 104 and 133, remainders are 8 and 5 respectively.
Formula Used: Required number = HCF(Number1 − Remainder1, Number2 − Remainder2)
=> First number = 104 − 8 = 96
=> Second number = 133 − 5 = 128
=> Factors of 96: 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96
=> Factors of 128: 1, 2, 4, 8, 16, 32, 64, 128
=> Highest Common Factor (HCF) = 32
Therefore The correct answer is 32.
Additional Information
HCF Definition
The Highest Common Factor (HCF) is the largest positive integer that divides each of the integers without a remainder.
Remainder Rule for HCF
To find the greatest number that leaves remainders a and b when dividing x and y, always find HCF(x−a, y−b).
Euclid Division Lemma
For any two positive integers a and b, there exist unique integers q and r such that a = bq + r, where 0 ≤ r < b.

Q32. Answer: (a) Rs. 22,025

Shortcut Trick
Remaining percentage after rent = 100% − 76% = 24%
Total of other expenses and savings = 627 + 3947 + 712 = Rs. 5286
24% → Rs. 5286
100% → (5286 ÷ 24) × 100 = 220.25 × 100 = Rs. 22,025
Therefore The correct answer is Rs. 22,025.
Alternate Method
Given:
Rent Expenditure = 76% of Salary
Conveyance Expenditure = Rs. 627

Grocery Expenditure = Rs. 3,947
Monthly Savings = Rs. 712
Calculations:
=> Total non-rent amount = Conveyance + Grocery + Savings
=> Total non-rent amount = 627 + 3947 + 712 = Rs. 5,286
=> Since Rent = 76%, Remaining amount percentage = 100% − 76% = 24%
=> 24% of Monthly Salary = Rs. 5,286
=> Monthly Salary = (5286 ÷ 24) × 100
=> Monthly Salary = 220.25 × 100 = Rs. 22,025
Therefore The correct answer is Rs. 22,025.
Additional Information
Income Expenditure Formula
Income = Total Expenditure + Savings. Any component can be calculated if others are given.
Percentage Base Change
If a value is distributed into segments, the sum of all segment percentages must equal 100% of the base value.
Successive Percentage
If the problem states 'percentage of remaining', we use the formula: Final = Initial × (1 − r1/100) × (1 − r2/100).

Q33. Answer: (d) 10

The logic followed in the given number pairs is:
Logic: The first number is five times the second number.
Now,
For, 10 : 2
=> 10 = 2 × 5
For, 45 : 9
=> 45 = 9 × 5
Applying the same logic for the third pair:
For, 50 : ?
=> 50 = ? × 5
=> ? = 50 / 5
=> ? = 10
Hence, the correct answer is "Option 4".

Q34. Answer: (a) (-7)/2

Shortcut Trick
For any cubic equation of the form $ax^3 + bx^2 + cx + d = 0$, the sum of roots is always given by $-b/a$.
Here, the coefficient of x^2 (b) is 7 and the coefficient of x^3 (a) is 2.
Applying the trick: Sum = − (7 / 2).
Therefore The correct answer is -7/2.
Alternate Method
Given:
The polynomial equation is $2x^3 + 7x^2 − 9x + 12 = 0$.
Formula Used:
According to Vieta's Formulas, for a cubic equation $ax^3 + bx^2 + cx + d = 0$ with roots α, β, and γ:
Sum of roots (α + β + γ) = −b / a
Calculations:
Comparing the given equation with the standard form:
=> a = 2
=> b = 7
=> c = −9
=> d = 12
Substituting these values into the formula for the sum of roots:

=> Sum of roots = −(7) / 2

=> Sum of roots = −7/2

Therefore The correct answer is -7/2.

Additional Information

Product of Roots (Taken Two at a Time)

For the cubic equation $ax^3 + bx^2 + cx + d = 0$, the sum of the product of roots taken two at a time is given by $\alpha\beta + \beta\gamma + \gamma\alpha = c/a$.

Product of All Roots

The product of all three roots for a cubic equation is given by $\alpha\beta\gamma = -d/a$.

General Relation for n-degree Polynomial

For any polynomial a_nxⁿ + a_(n−1)x^(n−1) + ... + a0 = 0, the sum of roots is always −a_(n−1) / a_n.

Q35. Answer: (b) 47 km towards the north

Given:

Eshwar starts from Point Y and drives 13 km towards the south.

He then takes a left turn, drives 27 km, turns right and drives 51 km.

He then takes a left turn and drives 18 km. He takes a left turn, drives 35 km.

He then turns left, drives 45 km, turns left and drives 18 km to stop at Point Z.

Movement of Eshwar is,

Since Eshwar's final position (Point Z) is 47 km South and 0 km East/West of his starting point (Point Y), he needs to travel a distance of 47 km in the North direction to get back to Point Y.

Hence, the correct answer is "Option 2".

Q36. Answer: (a) Swarts reaction

The Correct answer is Swarts reaction.

Key Points

• Swarts reaction is a method for the preparation of haloalkanes, particularly fluorinated compounds.

• In this reaction, metal fluorides like AgF, SbF_3, or Hg_2F_2 are used to replace halogens (chlorine or bromine) in alkyl halides.

• Freon-12 (Dichlorodifluoromethane) is commonly prepared using the Swarts reaction as it involves the replacement of chlorine atoms in chlorinated hydrocarbons with fluorine atoms.

• The reaction is widely applied in the industrial production of Freon compounds, which are used as refrigerants.

• Freon-12 has been extensively utilized in air conditioning and refrigeration systems due to its physical properties, such as low boiling point and non-flammability.

• However, its use has been phased out in many countries due to its ozone-depleting potential under the Montreal Protocol.

Additional Information

• Substitution reaction

• In a substitution reaction, one atom or group in a molecule is replaced by another atom or group.

• It is a common reaction in organic chemistry and involves mechanisms like SN1 and SN2 reactions.

• While substitution reactions are used for synthesizing various compounds, they are not the primary method for producing fluorinated hydrocarbons like Freon-12.

• Wurtz reaction

• The Wurtz reaction is a method used to prepare higher alkanes by reacting alkyl halides with sodium in dry ether.

• This reaction is not suitable for the production of fluorinated hydrocarbons like Freon-12.

• Elimination reaction

• Elimination reactions involve the removal of atoms or groups from a molecule, resulting in the formation of double or triple bonds.

• These reactions do not involve the direct substitution of halogens with fluorine and are unrelated to the synthesis of Freon compounds.

Q37. Answer: (a) 14

The given numbers are:

107, 788, 634, 346, 488

The highest number is 788.

The first digit of the highest number (788) is 7.

The lowest number is 107.

The third digit of the lowest number (107) is 7.

Sum = 7 + 7 = 14.

The resultant is 14.

Hence, the correct answer is "Option 1".

Q38. Answer: (c) 561

Given:

[(17 × 3) × {7 ÷ 7 × (18 - 14/2)}].

Formula used:

Simplify using the BODMAS rule.

Calculations:

[(17 × 3) × { 7 ÷ 7 × (18 - (14 ÷ 2)) }]

=> [(17 × 3) × { 7 ÷ 7 × (18 - 7) }]

=> [(17 × 3) × { 7 ÷ 7 × 11 }]

=> [(17 × 3) × { 1 × 11 }]

=> [(17 × 3) × 11]

=> (51 × 11)

=> 561

Therefore The correct answer is option (3).

Q39. Answer: (b) 58

Given:

• Harry's rank from the top = 34th

• Harry's rank from the bottom = 25th

The formula for the total number of persons in a row (or class) when one person's rank from both ends is known is:

Total persons = (Rank from one end) + (Rank from other end) - 1

Using this formula for Harry's ranks:

Total students = (Harry's rank from top) + (Harry's rank from bottom) - 1

= 34 + 25 - 1

= 59 - 1 = 58 students.

Hence, the correct answer is "Option 2".

Q40. Answer: (d) 51%

The Correct answer is 51%.

Key Points

• According to the World Bank's State of Social Protection Report 2025, social protection coverage in low- and middle-income countries increased significantly between 2010 and 2022.

• The coverage rose from 41% to 51%, showing a notable improvement in efforts to ensure economic security and welfare for vulnerable populations.

• Social protection programs often include cash transfers, unemployment benefits, health insurance, and pensions, which are crucial for reducing poverty and inequality.

• The increase in social protection coverage reflects global initiatives aimed at achieving Sustainable Development Goals (SDGs), particularly Goal 1 (No Poverty) and Goal 10 (Reduced Inequalities).

• The rise to 51% underscores the importance of government policies, international aid, and community-based programs in addressing social and economic challenges.

• This progress is particularly significant for countries in regions like Sub-Saharan Africa, South Asia, and Latin America, which often face higher poverty rates.

• The report highlights the role of organizations like the World Bank, UNICEF, and other global entities in supporting social protection frameworks.

Additional Information

• Social Protection Coverage

• Social protection refers to programs designed to reduce poverty and vulnerability by promoting efficient labor markets and diminishing people's exposure to risks.

• Examples include conditional cash transfers, food assistance programs, old-age pensions, and disaster relief funds.

• It is critical for achieving inclusive economic growth and protecting against economic shocks.

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• World Bank Reports

• The World Bank publishes periodic reports to assess progress in areas such as economic development, poverty alleviation, and social protection.

• The State of Social Protection Report provides insights into global trends and challenges in expanding coverage.

• This report serves as a benchmark for policymakers to evaluate their strategies and improve their frameworks.

Q41. Answer: (d) Dipti

Given: Dipti, Priti, Neeti, Reeti, Swati, Kirti and Jyoti are sitting around a circular table, facing the centre.

Dipti sits second to the right of Priti.

Jyoti sits to the immediate left of Priti.

Swati is an immediate neighbour of both Jyoti and Neeti.

Reeti is an immediate neighbour of Priti.

And Kirti sits at the remaining place.

Dipti sits second to the left of Neeti.

Hence, the correct answer is "Option 4".

Q42. Answer: (b) PIN65

The pattern followed here is.

Thus, the missing term in the series is PIN65.

Hence, the correct answer is Option 2.

Q43. Answer: (c) Maikala Range

The Correct answer is Maikala Range

Key Points

• The Shillong Plateau is a significant geographical feature located in the northeastern part of India.

• It is primarily divided into three distinct regions: the Khasi Hills, Jaintia Hills, and Garo Hills.

• The Maikala Range, however, is not a part of the Shillong Plateau. It is located in central India, primarily in the states of Chhattisgarh and Madhya Pradesh.

• The Maikala Range is an extension of the Satpura Range and is geographically distinct from the Shillong Plateau.

• The Shillong Plateau is known for its unique geological features, being composed of Precambrian rocks and forming part of the Indian Shield.

• In contrast, the Maikala Range is known for its forests and biodiversity, and is home to the Amarkantak Plateau, which is the origin of rivers like the Narmada and Son.

• Thus, the Maikala Range is geographically unrelated to the Shillong Plateau, making it the correct answer.

Additional Information

• Khasi Hills

• The Khasi Hills form a significant part of the Shillong Plateau.

• It is known for its scenic beauty, heavy rainfall, and biodiversity.

• Cherrapunji and Mawsynram, located in the Khasi Hills, are among the wettest places on Earth.

• Garo Hills

• The Garo Hills are located in the western part of the Shillong Plateau.

• They are known for their tribal culture, forests, and the presence of unique wildlife.

• It is one of the regions inhabited predominantly by the Garo tribe.

• Mikir Hills

• While geographically close to the Shillong Plateau, the Mikir Hills are technically part of the larger region around the Kaziranga National Park in Assam.

• They are known for their rolling hills and proximity to areas of ecological importance.

Q44. Answer: (d) (x^2 - 6x^2 y) years

Shortcut Trick

Mahesh age = (Sum of ages) − (Ramesh age)

Mahesh age = ($2x^2 - 3x^2y + y^2 + 3xy^2$) − ($x^2 + 3x^2y + y^2 + 3xy^2$)

Canceling common terms (y^2 and $3xy^2$): ($2x^2 - 3x^2y$) − ($x^2 + 3x^2y$)

Subtracting like terms: $x^2 - 6x^2y$

Therefore The correct answer is $(x^2 - 6x^2y)$ years.

Alternate Method

Given:

Sum of ages of Ramesh and Mahesh = $2x^2 - 3x^2y + y^2 + 3xy^2$

Age of Ramesh = $x^2 + 3x^2y + y^2 + 3xy^2$

Formula Used:

Age of Mahesh = Total Sum − Age of Ramesh

Calculations:

=> Age of Mahesh = $(2x^2 - 3x^2y + y^2 + 3xy^2) - (x^2 + 3x^2y + y^2 + 3xy^2)$

=> Age of Mahesh = $2x^2 - 3x^2y + y^2 + 3xy^2 - x^2 - 3x^2y - y^2 - 3xy^2$

=> Grouping like terms: $(2x^2 - x^2) + (-3x^2y - 3x^2y) + (y^2 - y^2) + (3xy^2 - 3xy^2)$

=> Age of Mahesh = $x^2 - 6x^2y + 0 + 0$

=> Age of Mahesh = $x^2 - 6x^2y$

Therefore The correct answer is $(x^2 - 6x^2y)$ years.

Additional Information

Algebraic Subtraction

When subtracting algebraic expressions, change the sign of every term in the expression being subtracted and then combine like terms.

Like Terms

Like terms are terms that have the same variables raised to the same powers. Only like terms can be added or subtracted (e.g., x^2y and x^2y).

Q45. Answer: (c) Dutch East India Company

The correct answer is Dutch East India Company.

Key Points

• The Battle of Colachel was fought in 1741 between the forces of the Dutch East India Company and the Kingdom of Travancore, led by its ruler Marthanda Varma.

• This battle was significant as it marked the first-ever defeat of a European colonial power by an Indian kingdom in a direct military confrontation.

• The Dutch forces aimed to secure a monopoly over the lucrative pepper trade in the Malabar region, which was a key economic resource during that time.

• However, the Travancore army under Marthanda Varma's leadership not only repelled the Dutch forces but also captured several of their officers, including their commander, Eustachius De Lannoy.

• The victory at Colachel was a strategic turning point, significantly weakening the influence of the Dutch East India Company in the region.

• Eustachius De Lannoy later became a trusted military advisor to Marthanda Varma, helping modernize the Travancore army with European military techniques.

• This battle is a symbol of resistance against colonial domination and showcases the military prowess of Indian rulers during the pre-colonial period.

Additional Information

• Austrian East India Company

• The Austrian East India Company was a trading company established in the late 18th century but did not have significant influence or operations in the Malabar region.

• Its focus was primarily on limited trade routes and commodities, and it lacked the military strength to engage in battles like Colachel.

• English East India Company

• The English East India Company was a major colonial power in India but was not involved in the Battle of Colachel.

• It primarily focused on establishing control over Bengal, Madras, and Bombay during the 18th century.

• Spanish East India Company

• The Spanish East India Company was primarily involved in trade routes connecting Spain, the Americas, and the Philippines.

• It had no notable presence or military engagement in the Indian subcontinent.

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Q46. Answer: (d) 1

Given: Seven boxes, A, B, C, D, E, F and G, are kept one above the other. The lowermost box is numbered 1 and the topmost is numbered 7.

1) D is kept second from the bottom.

7	
6	
5	
4	
3	
2	D
1	

2) Only three boxes are kept between D and E.

7	
6	E
5	
4	
3	
2	D
1	

3) F is kept in one of the positions below D.

7	
6	E
5	
4	
3	
2	D
1	F

4) Only A is kept between E and G.

7	
6	E
5	A
4	G
3	
2	D
1	F

5) B is kept in one of the positions above E.

7	**B**
6	E
5	A
4	G

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3	
2	D
1	F

6) The only remaining box is C, and the only remaining position is 3. So, C is on Position 3.

7	**B**
6	E
5	A
4	G
3	C
2	D
1	F

Therefore, One box is kept between A and B.

Hence, the correct answer is "Option 4".

Q47. Answer: (b) Three

Given: Seven friends, K, L, M, N, O, P and S, are sitting in a row facing north.

Only two people sit to the left of S.

Only three people sit between S and O.

K sits second to the right of S.

Only two people sit between K and M.

L sits at some place to the right of N but at some place to the left of P.

Three people sit to the right of L.

Hence, the correct answer is "Option 2".

Q48. Answer: (d) 2

Given series:

(Left) 3 £ & 1 2 © 2 5 $ 9 3 © 9 4 3 % 9 3 # © 6 2 (Right)

Condition to be checked:

Number → Symbol → Symbol

3 £ & 1 2 © 2 5 $ 9 3 © 9 4 3 % 9 3 # © 6 2

There are two such symbols in the above arrangement (3 £ &, 3 # ©).

Hence, the correct answer is "Option 4".

Q49. Answer: (b) 193

BODMAS Rule:

According to the question, the signs are interchanged as follows:

Original Symbol	**•**	**−**	**×**	**÷**
New Symbol	−	×	÷	•

Now, given the equation: 96 × 8 − 11 ÷ 83 + 22 = ?

After interchanging the specified signs, the new equation is:

96 ÷ 8 × 11 + 83 − 22 = ?

Perform operations according to BODMAS:

=> 96 ÷ 8 × 11 + 83 − 22

=> 12 × 11 + 83 − 22

=> 132 + 83 − 22

=> 215 − 22 = 193

Hence, the correct answer is "Option 2".

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Q50. Answer: (d) 39

Shortcut Trick

Since the given Mode is exactly 125, which lies on the boundary of the classes 120−125 and 125−130, the frequencies of these two adjacent classes must be equal to maintain symmetry.

=> Frequency of class (120−125) = Frequency of class (125−130)

=> 39 = x

=> x = 39

Therefore The correct answer is 39.

Alternate Method

Given:

Mode of the data = 125

Formula Used:

Mode = L + [(f1 − f0) ÷ (2f1 − f0 − f2)] × h

Where:

L = Lower limit of the modal class

f1 = Frequency of the modal class

f0 = Frequency of the class preceding the modal class

f2 = Frequency of the class succeeding the modal class

h = Class width (size of class interval)

Calculations:

Since the mode is 125, it lies on the boundary of the classes 120−125 and 125−130. We can analyze both cases:

Case 1: Assuming 120−125 is the modal class

=> L = 120, f1 = 39, f0 = 31, f2 = x, h = 5

=> 125 = 120 + [(39 − 31) ÷ (2 × 39 − 31 − x)] × 5

=> 5 = [8 ÷ (78 − 31 − x)] × 5

=> 1 = 8 ÷ (47 − x)

=> 47 − x = 8

=> x = 39

Case 2: Assuming 125−130 is the modal class

=> L = 125, f1 = x, f0 = 39, f2 = 15, h = 5

=> 125 = 125 + [(x − 39) ÷ (2x − 39 − 15)] × 5

=> 0 = [(x − 39) ÷ (2x − 54)] × 5

=> x − 39 = 0

=> x = 39

Both cases consistently yield x = 39.

Why other options are incorrect:

Option (1) 48: If x = 48, the modal class is 125−130. Mode = 125 + [(48 − 39) ÷ (2 × 48 − 39 − 15)] × 5 = 125 + [9 ÷ 42] × 5 ≈ 126.07 ≠ 125.

Option (2) 40: If x = 40, the modal class is 125−130. Mode = 125 + [(40 − 39) ÷ (2 × 40 − 39 − 15)] × 5 = 125 + [1 ÷ 26] × 5 ≈ 125.19 ≠ 125.

Option (3) 31: If x = 31, the modal class is 120−125. Mode = 120 + [(39 − 31) ÷ (2 × 39 − 31 − 31)] × 5 = 120 + [8 ÷ 16] × 5 = 122.5 ≠ 125.

Therefore The correct answer is 39.

Additional Information

Modal Class

The class interval in a grouped frequency distribution that has the highest frequency.

Empirical Relationship

The relationship between Mean, Median, and Mode is given by: Mode = 3 × Median − 2 × Mean.

Symmetric Distribution

In a perfectly symmetric distribution, Mean = Median = Mode.

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Q51. Answer: (c) Tibet (China)

The Correct answer is Tibet (China).

Key Points

• The Lipulekh Pass is a strategic mountain pass located in the Himalayas.

• It lies at the tri-junction of India, Nepal, and China (Tibet).

• The pass has historically been used for pilgrimage routes, including the Kailash Mansarovar Yatra.

• It serves as an important point for border trade between India and Tibet (China).

• In recent years, the area has been a subject of geopolitical discussions due to its strategic significance.

• The Lipulekh Pass is located in the Pithoragarh district of Uttarakhand, India.

• It is situated at an elevation of approximately 5,200 meters above sea level.

• The pass has a historical significance as it was mentioned in treaties like the 1815 Treaty of Sugauli.

Additional Information

• Bangladesh

• Bangladesh shares a border with India but does not have mountain passes like Lipulekh as its terrain is mostly plains and delta regions.

• It is located to the east of India and is separated by the Radcliffe Line.

• The country is known for rivers like the Ganges, Brahmaputra, and Meghna.

• Bhutan

• Bhutan is a landlocked country sharing a border with India but does not have the Lipulekh Pass.

• It lies to the northeast of India and is known for the Himalayan mountain range.

• The country has close ties with India under the Indo-Bhutan Friendship Treaty.

• Afghanistan

• Afghanistan shares no common border with India and is separated by Pakistan.

• The terrain of Afghanistan primarily includes mountains and arid regions.

• India engages with Afghanistan through development projects and historical ties, but it does not involve any direct mountain passes like Lipulekh.

Q52. Answer: (d) 4

The given code language is:

Thus, 'F' is coded as '4'.

Hence, the correct answer is "Option 4".

Q53. Answer: (a) 60°

Shortcut Trick

For supplementary angles, the sum is always 180°.

Let the angles be L (larger) and S (smaller).

L + S = 180° and L − S = 60°

Smaller Angle (S) = (Sum − Difference) ÷ 2

S = (180° − 60°) ÷ 2 = 120° ÷ 2 = 60°

Therefore The correct answer is 60°.

Alternate Method

Given:

Sum of supplementary angles = 180°

Difference between the two angles = 60°

Formula Used:

Sum of angles on a straight line = 180°

Calculations:

Let the smaller angle be x.

According to the question, the larger angle = x + 60°

=> x + (x + 60°) = 180°

=> 2x + 60° = 180°

=> 2x = 180° − 60°

=> 2x = 120°

=> x = 120° ÷ 2

=> x = 60°

Therefore The correct answer is 60°.

Q54. Answer: (a) United States of America

The Correct answer is United States of America.

Key Points

• The doctrine of judicial review originated in the United States of America.

• The concept was established through the landmark case of Marbury v. Madison (1803), which was presided over by Chief Justice John Marshall.

• This case established the principle that the Supreme Court of the United States has the authority to review and invalidate laws and actions of the executive and legislative branches if they conflict with the U.S. Constitution.

• Judicial review is considered a fundamental aspect of the separation of powers and ensures that no branch of government exceeds its constitutional limits.

• The doctrine serves as a mechanism to protect the rights of individuals and maintain the supremacy of the Constitution in the governance of the country.

• In the United States, judicial review plays a critical role in maintaining the principle of checks and balances among the three branches of government: the legislative, executive, and judiciary.

Additional Information

• United Kingdom

• The United Kingdom follows the principle of parliamentary sovereignty, meaning Parliament is the supreme legal authority.

• Unlike the United States, the concept of judicial review is limited in the UK. Courts cannot overrule legislation passed by Parliament but can review whether public authorities act within their legal powers.

• India

• India adopted the concept of judicial review from the United States, and it is enshrined in the Indian Constitution.

• Articles 13, 32, and 136 of the Indian Constitution empower courts to review the constitutionality of laws and executive actions.

• France

• France follows the civil law system, and judicial review as in the U.S. does not exist.

• The Constitutional Council of France examines the constitutionality of laws but only before they are enacted, not after.

Q55. Answer: (d) 3

Shortcut Trick

Mode is the value that appears most frequently in a data set.

Count the frequency of each observation in the given data set:

Observation 3 appears 4 times, which is the highest frequency among all numbers.

Therefore The correct answer is 3.

Alternate Method

Given observations: 3, 6, 5, 7, 8, 4, 3, 3, 2, 5, 3, 6, 4, 8, 5

Formula Used:

Mode = Value with the maximum frequency in the given data set.

Let us arrange the data in ascending order to count the frequencies easily:

2, 3, 3, 3, 3, 4, 4, 5, 5, 5, 6, 6, 7, 8, 8

Now, let us list the frequency of each observation:

=> Frequency of 2 = 1

=> Frequency of 3 = 4

=> Frequency of 4 = 2

=> Frequency of 5 = 3

=> Frequency of 6 = 2

=> Frequency of 7 = 1

=> Frequency of 8 = 2

Since the observation 3 has the maximum frequency of 4, the mode of the given data is 3.

Option Analysis:

=> Option (1) - 6: Frequency of 6 is 2, which is less than the maximum frequency of 4.

=> Option (2) - 7: Frequency of 7 is 1, which is less than the maximum frequency of 4.

=> Option (3) - 5: Frequency of 5 is 3, which is less than the maximum frequency of 4.

=> Option (4) - 3: Frequency of 3 is 4, which is the highest frequency. Hence, this is the correct option.

Therefore The correct answer is 3.

Additional Information

Mean, Median, and Mode Relationship

For a moderately skewed distribution, the empirical relationship is: Mode = 3 × Median − 2 × Mean.

Types of Mode Distributions

A data set can have one mode (unimodal), two modes (bimodal), three modes (trimodal), or no mode if all values occur with the same frequency.

Median of Data

The median is the middlemost value when data is arranged in ascending or descending order. For N = 15 (odd), Median = ((15 + 1) ÷ 2)^(th) term = 8^(th) term = 5.

Q56. Answer: (b) Eliminating all private sector participation in defence manufacturing

The Correct answer is Eliminating all private sector participation in defence manufacturing.

Key Points

• The updated Defence Acquisition Procedure (DAP) 2024 aims to strengthen India's self-reliance in defence manufacturing under the 'Aatmanirbhar Bharat' initiative.

• The government is actively encouraging private sector participation in defence manufacturing to boost innovation, competition, and efficiency.

• Rather than eliminating private sector involvement, the DAP 2024 promotes collaboration between Indian defence firms and global Original Equipment Manufacturers (OEMs).

• The procedure emphasizes streamlined procurement timelines, reducing bureaucratic hurdles, and improving operational efficiency.

• The focus is on higher indigenisation requirements, ensuring that defence contracts support local manufacturing and technology development.

• Encouraging private sector participation aligns with India's goal of becoming a global hub for defence production.

• Eliminating private sector participation would contradict the government's vision for fostering in defence manufacturing.

Additional Information

• Streamlining procurement timelines and reducing bureaucratic hurdles

• One of the primary objectives of DAP 2024 is to simplify and expedite procurement processes.

• This includes reducing bureaucratic delays to ensure faster acquisition of defence equipment.

• The streamlined approach is expected to support India's armed forces in acquiring modern and indigenous equipment without unnecessary delays.

• Increasing collaboration between Indian defence firms and global OEMs

• The updated DAP emphasizes partnerships between Indian defence companies and international Original Equipment Manufacturers (OEMs).

• Such collaborations aim to transfer advanced technology to India while promoting local manufacturing capabilities.

• It also helps Indian firms gain access to global markets and improve their competitiveness.

• Promoting higher indigenisation requirements for defence contracts

• The DAP 2024 emphasizes the need for greater indigenisation in defence contracts.

• Indigenisation requirements ensure that a significant portion of components, technology, and manufacturing is sourced locally.

• This boosts India's domestic defence industry and reduces dependence on foreign imports.

Q57. Answer: (c) 36

Shortcut Trick

Let the longer side be L and shorter side be (L − 18).

Given: Area = 6 × Perimeter

L(L − 18) = 6 × 2(L + L − 18) => L(L − 18) = 12(2L − 18)

Test options: If L = 36, then 36(18) = 648 and 12(72 − 18) = 12(54) = 648. Both match.

Therefore The correct answer is 36 cm.

Alternate Method

Given:

Let Longer side (Length) = x cm

Shorter side (Breadth) = (x − 18) cm

Formula Used:

Area of Rectangle = Length × Breadth

Perimeter of Rectangle = 2(Length + Breadth)

Calculations:

=> Area = 6 × Perimeter

=> $x(x - 18) = 6 \times [2(x + x - 18)]$

=> $x^2 - 18x = 12(2x - 18)$

=> $x^2 - 18x = 24x - 216$

=> $x^2 - 42x + 216 = 0$

=> $x^2 - 36x - 6x + 216 = 0$

=> $x(x - 36) - 6(x - 36) = 0$

=> $(x - 36)(x - 6) = 0$

=> x = 36 or x = 6

=> Since breadth = x − 18, x cannot be 6 (as side cannot be negative).

=> Length = 36 cm

Therefore The correct answer is 36 cm.

Additional Information

Properties of Rectangle

A rectangle has opposite sides equal and all angles are 90°. Diagonal $d = \sqrt{(L^2 + B^2)}$.

Quadratic Roots Shortcut

For $ax^2 + bx + c = 0$, if the sum of roots is $-b/a$ and product is c/a, the factors of 216 that sum to 42 are 36 and 6.

Q58. Answer: (c) Xylem and phloem present on the same radius

The Correct answer is Xylem and phloem present on the same radius.

Key Points

• A conjoint vascular bundle is a type of vascular bundle where both xylem and phloem are present together on the same radius of the stem or root.

• It is a characteristic feature of most angiosperms and is commonly found in dicot stems and monocot stems.

• In this type of arrangement, the xylem is typically located towards the inner side (adaxial side), while the phloem is positioned towards the outer side (abaxial side).

• Conjoint vascular bundles are further classified into two types:

• Collateral: Xylem and phloem are present side by side in the same bundle (e.g., sunflower stem).

• Bicollateral: Xylem is sandwiched between two layers of phloem (e.g., Cucurbita stem).

• In most cases, conjoint vascular bundles are surrounded by a layer of parenchyma cells, which form the vascular cambium in dicots.

• This arrangement is efficient for the transport of water, minerals, and organic nutrients throughout the plant body.

Additional Information

• Xylem and phloem alternate along the radii

• This arrangement describes a radial vascular bundle, where xylem and phloem are located on alternate radii.

• Radial vascular bundles are found in roots of both monocots and dicots.

• Xylem only on the outer side

• This statement is incorrect because xylem is usually located on the inner side in a conjoint vascular bundle.

• However, in open vascular bundles, the cambium allows for secondary growth, leading to the formation of additional xylem on the inside.

• Cambium is absent

• This condition is seen in closed vascular bundles, which are common in monocots.

• In such bundles, there is no cambium, so secondary growth does not occur.

Q59. Answer: (b) Alt + F

The Correct answer is Alt + F.

Key Points

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• The keyboard shortcut Alt + F is commonly used to open the File menu in most legacy and standard Windows applications.
• This shortcut allows users to quickly access options such as Open, Save, Save As, Print, Exit, and other file-related commands.
• It is part of the keyboard accessibility features designed to improve productivity by reducing reliance on mouse navigation.
• Legacy applications follow this convention, making Alt + F a widely recognized shortcut across many software programs.
• By pressing the Alt key, the application activates its menu bar, and the letter F corresponds to the File menu, following the underlined shortcut convention.
• This shortcut improves user efficiency, especially for tasks requiring frequent interaction with file operations.
• It is useful for accessibility purposes as it allows users with physical limitations to navigate through applications without using a mouse.

Additional Information

• Alt + Tab
• The Alt + Tab combination is used to switch between open applications or windows in a Windows environment.
• This shortcut improves multitasking and workflow efficiency by allowing quick navigation between programs.
• Alt + Insert
• Alt + Insert is less commonly used but may have specific functions in certain applications, such as inserting elements or commands.
• Its functionality depends on the program in use, and it is not standardized for accessing menus.
• Alt + Delete
• Alt + Delete is not a standard shortcut in Windows for menu navigation.
• It may have specific uses in certain applications, such as editing or deleting content.

Q60. Answer: (c) 7,832

Shortcut Trick

Income = 100%

Savings = 100% − 55% = 45%

45% ratio → Rs. 6,408

Expenses (55%) = (6,408 ÷ 45) × 55 = 1,424 × (55 ÷ 10) = 142.4 × 55 = 7,832

Therefore The correct answer is Rs. 7,832.

Alternate Method

Given:

Spending percentage = 55%

Monthly Savings = Rs. 6,408

Let the Monthly Income be x.

=> Savings percentage = 100% − 55% = 45%

=> 45% of x = 6,408

=> (45 ÷ 100) × x = 6,408

=> x = (6,408 × 100) ÷ 45

=> x = 14,240

=> Monthly Expenses = 55% of 14,240

=> Monthly Expenses = (55 ÷ 100) × 14,240

=> Monthly Expenses = 0.55 × 14,240 = 7,832

Therefore The correct answer is Rs. 7,832.

Additional Information

Income-Expenditure Formula

Total Income = Total Expenditure + Total Savings.

Percentage Change in Income

If income increases by r%, new income = Original Income × (100 + r)/100.

Savings Ratio

Savings % = (Savings ÷ Income) × 100.

Q61. Answer: (d) Tons

The Correct answer is Tons.

Key Points

• The Tons River is one of the largest and most important tributaries of the Yamuna River.
• It originates from the Bandarpunch Glacier in the Garhwal region of Uttarakhand.
• The Tons River merges with the Yamuna near Kalsi in the Dehradun district of Uttarakhand.
• The river is known for its rugged terrain and steep gorges, making it a significant river in the Himalayan region.
• The Tons River is also popular for adventure sports like rafting due to its high-speed water currents.
• This river contributes significantly to the water flow of the Yamuna, especially during the monsoon season.
• It flows through regions rich in biodiversity and passes through dense forests and valleys.

Additional Information

• Son River
• The Son River is a major tributary of the Ganga, not the Yamuna.
• It originates from Amarkantak Plateau in Madhya Pradesh.
• It flows through states like Madhya Pradesh, Uttar Pradesh, Jharkhand, and Bihar.
• The river is known for its sandy riverbed and seasonal flow variations.
• Teesta River
• The Teesta River is a tributary of the Brahmaputra, not the Yamuna.
• It originates from the Tso Lhamo Lake in North Sikkim.
• The river flows through Sikkim and West Bengal, and then enters Bangladesh.
• It is a vital source of irrigation and hydroelectricity in the region.
• Gomti River
• The Gomti River is a tributary of the Ganga, not the Yamuna.
• It originates from Gomat Taal (also known as Fulhar Lake) near Madhotanda in Uttar Pradesh.
• The river flows entirely within Uttar Pradesh and passes through cities like Lucknow.
• The Gomti is considered sacred in Hindu tradition and is linked to religious practices.

Q62. Answer: (c) BRQ : DTR

The logic followed here is:

LQM : NSN

ETG : GVH

Now,

Option 1: BKL : FJL

Option 2: WHO : XZQ

Option 3: BRQ : DTR

Option 4: GHM : KMO

Thus, Option 3 follows the correct logic.

Hence, the correct answer is "Option 3".

Q63. Answer: (c) West

The Correct answer is West.

Key Points

• The Malwa Plateau is located in the central-western region of India and is part of the larger Deccan Plateau.
• The Chotanagpur Plateau, on the other hand, lies in the eastern region of India, covering parts of Jharkhand, Odisha, and West Bengal.
• When comparing the relative locations of these two plateaus, the Malwa Plateau lies to the west of the Chotanagpur Plateau.
• The Malwa Plateau is primarily spread across the states of Madhya Pradesh and parts of Rajasthan.
• The Chotanagpur Plateau is rich in mineral resources such as coal, iron ore, and mica, while the Malwa Plateau is known for its black soil, which is suitable for growing crops like cotton and soybean.
• The location of these plateaus is significant for understanding the geography, resource distribution, and agricultural practices of India.
• To summarize, the Malwa Plateau lies westward when viewed relative to the position of the Chotanagpur Plateau on the map of India.

Q64. Answer: (c) 32,000

Shortcut Trick

Fractional rate of 25% = 1/4. Population increases from 4 to 5 each year.

Let population 3 years ago be P. Then 2 years ago, it was P × (5/4). Current population = P × $(5/4)^3$.

P × (125/64) = 2,50,000 => P = 1,28,000.

Difference = (Population 2 years ago) − (Population 3 years ago) = P × (5/4 − 1) = P × 1/4.

Difference = 1,28,000 ÷ 4 = 32,000.

Therefore The correct answer is 32,000.

Alternate Method

Given: Current Population = 2,50,000; Rate (R) = 25% per annum; Time (n) = 3 years.

Formula Used: Population n years ago = P / $(1 + R/100)^n$

=> Population 3 years ago = 2,50,000 / $(1 + 25/100)^3$

=> Population 3 years ago = 2,50,000 / $(5/4)^3$ = 2,50,000 × (64/125) = 1,28,000

=> Population 2 years ago = (Population 3 years ago) × (1 + 25/100)

=> Population 2 years ago = 1,28,000 × 1.25 = 1,60,000

=> Required Difference = 1,60,000 − 1,28,000 = 32,000

Therefore The correct answer is 32,000.

Additional Information

Population Growth Formula

Future Population = $P(1 + R/100)^n$, where P is initial population, R is growth rate, and n is time.

Population Decrease Formula

If population decreases, use $P(1 − R/100)^n$. This is similar to the Depreciation formula in accounting.

Successive Percentage Change

For two years with different rates R1 and R2, the final population is P(1 + R1/100)(1 + R2/100).

Q65. Answer: (a) Customising the top-level master ensures consistency of universal elements across all slide layouts

The Correct answer is Customising the top-level master ensures consistency of universal elements across all slide layouts.

Key Points

• In MS PowerPoint, the Slide Master View allows users to edit the slide master, which controls the overall design and layout of the presentation.

• Customising the top-level master slide ensures that universal design elements such as backgrounds, fonts, themes, colors, and logos are applied consistently across all individual slide layouts in the presentation.

• This approach enhances efficiency because the changes made at the top-level master are automatically inherited by all other layout slides, saving time compared to editing individual layouts.

• The top-level master is particularly helpful for maintaining brand consistency in corporate or professional presentations where uniformity is crucial.

• Universal elements added or modified at the top-level master slide create a cohesive look and feel, reducing the chances of discrepancies in formatting across slides.

• Elements like a company's logo, header, footer, and slide numbering can be centrally managed through the top-level master slide.

• Customisation at this level does not overwrite individual layout-specific customizations unless explicitly intended, offering both flexibility and control.

Q66. Answer: (d) 50,000

Shortcut Trick

Find the net percentage difference in interest for the given time period.

Rate difference per annum = 6% − 3.5% = 2.5%

Total interest difference for 4 years = 2.5% × 4 = 10%

Required difference = 10% of Rs. 5,00,000 = Rs. 50,000

Therefore The correct answer is Rs. 50,000.

Alternate Method

Given:

Principal (P) = Rs. 5,00,000 | Time (T) = 4 years

Rate Bank A (R1) = 3.5% | Rate Bank B (R2) = 6%

Formula Used: Simple Interest (SI) = (P × R × T) ÷ 100

Calculations:

=> Simple Interest from Bank A = (5,00,000 × 3.5 × 4) ÷ 100

=> SI_A = 5,000 × 14 = Rs. 70,000

=> Simple Interest from Bank B = (5,00,000 × 6 × 4) ÷ 100

=> SI_B = 5,000 × 24 = Rs. 1,20,000

=> Positive Difference = SI_B − SI_A

=> Difference = Rs. 1,20,000 − Rs. 70,000 = Rs. 50,000

Therefore The correct answer is Rs. 50,000.

Additional Information

Direct Difference Formula

When Principal and Time are constant, the difference in interest is given by: Diff = P × T × (R2 − R1) ÷ 100.

Effect of Simple Interest

Simple interest is calculated only on the Principal amount. It remains constant every year if the rate and principal do not change.

Annualized Rate Difference

The difference in the Total Amount (Principal + Interest) after any time T is the same as the difference in the Simple Interest paid.

Q67. Answer: (c) Deepak Agarwal

The correct answer is Deepak Agarwal.

Key Points

• Deepak Agarwal was appointed as the Managing Director of National Agriculture Cooperative Marketing Federation of India Ltd (NAFED) in October 2024.

• NAFED is an apex organization under the Ministry of Agriculture and Farmers Welfare, Government of India, and was established in 1958.

• The organization plays a crucial role in promoting agricultural marketing and providing support to farmers by ensuring the procurement of their produce at minimum support prices (MSP).

• As the Managing Director, Deepak Agarwal is expected to lead initiatives to strengthen the agricultural marketing systems and further the objectives of the cooperative sector in India.

• His leadership at NAFED is pivotal in ensuring the organization’s continued commitment to improving the efficiency of marketing mechanisms and benefitting farmers across the country.

• NAFED is also involved in the implementation of various government schemes related to agriculture, such as the Price Support Scheme (PSS) and the Price Stabilization Fund (PSF).

• The appointment of a skilled professional like Deepak Agarwal reflects the organization's focus on operational excellence and innovation in the agricultural sector.

Additional Information

• Praveena Rai

• Praveena Rai is the Chief Operating Officer (COO) of the National Payments Corporation of India (NPCI).

• She plays a key role in strengthening the digital payment ecosystem in India.

• Ashok Chandra

• Ashok Chandra is known for his contributions to the education sector in India.

• He has been associated with the implementation of various policy reforms in the field of education.

• Vipin Kumar

• Vipin Kumar is noted for his work in the scientific research domain.

• He has been associated with organizations such as the National Innovation Foundation, promoting grassroots innovations.

Q68. Answer: (b) JH - KL

The logic followed here is.

Option (1) 'HK - GJ':

Option (2) 'JH - KL':

Option (3) 'PS - OR':

Option (4) 'LO - KN':

Thus, option 2 is odd one.

Hence, the correct answer is "Option 2".

Q69. Answer: (c) 8 km to the East

Given,

Mr. Alex starts from Point A and drives 9 km towards the South.

He then takes a left turn, drives 3 km, turns left and drives 19 km.

He then takes a left turn and drives 7 km, turns left drives 5 km.

He then takes a right turn and drives 4 km.

He takes a final left turn, drives 5 km and stops at Point P.

Mr. Alex's final position, Point P, is 8 km West of Point A.

To return to Point A, he must drive 8 km in the East direction.

Hence, the correct answer is "Option 3".

Q70. Answer: (d) Silver

The correct answer is Silver.

Key Points

• During the Mauryan Empire, silver was extensively used for coinage.

• The Mauryans issued coins made of punch-marked silver, which are considered one of the earliest forms of currency in ancient India.

• These coins were called Punch-marked coins, as their designs were made by punching symbols onto the metal.

• Silver was preferred due to its high intrinsic value and widespread availability during that era.

• The Mauryan Empire had access to silver mines, which facilitated the extensive use of silver for monetary purposes.

• Coins made of silver played a significant role in the economic system of the Mauryan Empire, enabling trade and commerce to flourish.

• These silver coins were used not just in local transactions but also in long-distance trade, reflecting the empire's vast reach and commercial activities.

• The use of silver coins during the Mauryan period marked an important development in the history of Indian numismatics.

Additional Information

• Gold

• Gold coins were used in later periods of Indian history, especially during the Gupta Empire, which is known for its highly artistic gold coins.

• Gold was considered a symbol of wealth and prestige, but it was not extensively used for coinage in the Mauryan period.

• Iron

• Iron was primarily used for tools, weapons, and infrastructure during the Mauryan period.

• It was not a suitable material for coinage due to its lower intrinsic value compared to metals like silver and gold.

• Copper

• Copper coins were also issued during the Mauryan Empire, but they were less valuable and mostly used for smaller transactions.

• Copper coins were often used in conjunction with silver coins to facilitate trade and commerce.

Q71. Answer: (b) 16 cm

Shortcut Trick

For similar triangles, the ratio of their perimeters is equal to the ratio of their corresponding sides.

Ratio of sides (BC : QR) = 4 : 8 = 1 : 2

Perimeter of ΔABC = Perimeter of ΔPQR × (1 ÷ 2)

Perimeter of ΔABC = 32 × 0.5 = 16 cm

Therefore The correct answer is 16 cm.

Alternate Method

Given:

ΔABC ~ ΔPQR

QR = 8 cm, BC = 4 cm

Perimeter of ΔPQR = 32 cm

Formula Used:

If ΔABC ~ ΔPQR, then:

Perimeter(ΔABC) ÷ Perimeter(ΔPQR) = AB ÷ PQ = BC ÷ QR = AC ÷ PR

P

Q

R

A

B

C

8 cm

4 cm

Perimeter = 32 cm

Perimeter = ?

Q72. Answer: (c) Density

The correct answer is Density.

Key Points

• Density is defined as the mass per unit volume of a substance.

• It is mathematically expressed as Density = Mass/Volume.

• The dimensional formula for mass is [M], and for volume, it is [L^3].

• Thus, the dimensional formula for density is [M L^-³].

• This dimensional formula indicates that density has one unit of mass (M) and is inversely proportional to the cube of the length (L).

• Density is an important physical quantity used in various fields such as fluid mechanics, material science, and engineering applications.

• Examples of density include the density of water as 1000 kg/m^3 and the density of air as approximately 1.225 kg/m^3 at sea level.

Additional Information

• Pressure

• Pressure is defined as the force applied per unit area.

• Its dimensional formula is [M L^-¹ T^-²], which is different from density.

• Pressure is measured in units such as Pascals (Pa) in the SI system.

• Applications of pressure include hydraulics, pneumatics, and weather prediction.

• Work

• Work is defined as the product of force and displacement in the direction of the force.

• Its dimensional formula is [M L^2 T^-²].

• Work is measured in Joules (J) in the SI system.

• It is widely used in physics and engineering to analyze energy transfer.

• Energy

• Energy is the capacity to perform work.

• Its dimensional formula is the same as that of work, [M L^2 T^-²].

• Energy is measured in Joules (J) in the SI system.

• Examples include kinetic energy, potential energy, and thermal energy.

Q73. Answer: (a) 418

The logic followed here is:

Thus, the missing number in the series is 418.

Hence, the correct answer is "Option 1".

Q74. Answer: (c) 5.27%

The Correct answer is 5.27%.

Key Points

• The National Multidimensional Poverty Index (MPI) 2023 is based on data from the NFHS-5 (2019-21).

• The MPI measures poverty using three dimensions: health, education, and standard of living.

• In urban areas, the poverty headcount ratio for 2019-21 was calculated as 5.27%, indicating a significant reduction in multidimensional poverty in urban regions.

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• The headcount ratio reflects the proportion of individuals who are deprived in at least one-third of the weighted indicators.

• The data highlights India's progress in improving living conditions and reducing poverty in urban areas.

• This reduction is attributed to various government initiatives such as housing programs, employment schemes, and improved healthcare facilities.

• The report is aligned with Sustainable Development Goals (SDGs), particularly Goal 1, which aims to eradicate poverty in all its forms.

• The findings underscore the importance of targeted policies in addressing urban poverty and ensuring equitable development.

Additional Information

• National Multidimensional Poverty Index (MPI)

• The MPI is developed by the NITI Aayog in collaboration with Oxford Poverty and Human Development Initiative and the United Nations Development Programme (UNDP).

• It adopts a holistic approach to measuring poverty, moving beyond income-based assessments.

• The index uses 12 indicators grouped under three dimensions: health, education, and living standards.

• Indicators include access to nutrition, child mortality, school attendance, sanitation, and drinking water, among others.

• NFHS-5 (National Family Health Survey)

• The NFHS-5 was conducted during 2019-21 and provides comprehensive data on population health, nutrition, and demographics.

• It is a flagship program of the Ministry of Health and Family Welfare in India.

• The survey covers urban and rural areas, offering valuable insights into disparities and areas requiring intervention.

Q75. Answer: (a) 1

The given code language is:

Thus, 'T' is coded as '1'.

Hence, the correct answer is "Option 1".

Q76. Answer: (b) 6

Shortcut Trick

Let the present age of Sujatha be S and Vanita be V.

From the first condition: $6S = 3V + 6 \rightarrow 2S - V = 2 \rightarrow V = 2S - 2$.

From the second condition, after 7 years: $4(V + 7) = 6(S + 7) - 6 \rightarrow 4V + 28 = 6S + 36 \rightarrow 4V - 6S = 8$.

Substitute $V = 2S - 2$ into the second equation: $4(2S - 2) - 6S = 8 \rightarrow 2S = 16 \rightarrow S = 8$ years, and $V = 14$ years.

The difference $k = V - S = 14 - 8 = 6$ years.

Therefore The correct answer is 6 years.

Alternate Method

Let Sujatha's present age be S and Vanita's present age be V.

According to the first statement:

=> $6S = 3V + 6$

=> $2S = V + 2$

=> $V = 2S - 2$ —— (Equation 1)

According to the second statement, after 7 years:

=> Age of Sujatha after 7 years = $S + 7$

=> Age of Vanita after 7 years = $V + 7$

=> $4(V + 7) = 6(S + 7) - 6$

=> $4V + 28 = 6S + 42 - 6$

=> $4V + 28 = 6S + 36$

=> $4V - 6S = 8$

=> $2V - 3S = 4$ —— (Equation 2)

Substitute Equation 1 into Equation 2:

=> $2(2S - 2) - 3S = 4$

=> $4S - 4 - 3S = 4$

=> $S = 8$

Substitute $S = 8$ into Equation 1:

=> $V = 2(8) - 2 = 14$

We are given that Vanita is k years older than Sujatha:

=> V = S + k

=> 14 = 8 + k

=> k = 6

Therefore The correct answer is 6 years.

Additional Information

Linear Equations in Two Variables

Problems on ages are solved by formulating algebraic equations based on present conditions and past/future shifts, then using substitution or elimination methods.

Age Difference Invariance

The difference in age between two people remains constant throughout their lives. Thus, the value of k will always be the same regardless of the number of years passed.

Q77. Answer: (c) GY – OJ

The logic followed here is by observing the alphabetical position shifts from the letters of the first cluster to the corresponding letters of the second cluster.

Option (1) 'TL – BV':

Option (2) 'ZR – HB':

Option (3) 'GY – OJ':

Option (4) 'PH – XR':

In options 1, 2, and 4, the first letter of the cluster pair moves +8 positions forward and the second letter moves +10 positions forward.

In option 3, the first letter moves +8 positions forward, but the second letter moves +11 positions forward.

Hence, the correct answer is "Option 3".

Q78. Answer: (c) 5760

Shortcut Trick

A number is divisible by 64 if its last 6 digits are divisible by 64, or if it is a multiple of 8 and 16.

Check 5760: It ends in 0 and is an even number. 5760 ÷ 64 = 90.

Odd numbers like 5327, 5129, and 4797 can never be divisible by an even number like 64.

Therefore The correct answer is 5760.

Alternate Method

Given: Numbers 5327, 5129, 5760, 4797.

Property: For a number to be divisible by 64 (which is 2^6), the number must be even.

=> 5327 is Odd → Not divisible.

=> 5129 is Odd → Not divisible.

=> 4797 is Odd → Not divisible.

=> Checking 5760: 5760 ÷ 64

=> 5760 ÷ 8 = 720

=> 720 ÷ 8 = 90

=> Since 5760 is divisible by 8 × 8 (which is 64), it is the correct number.

Therefore The correct answer is 5760.

Additional Information

Divisibility by powers of 2

A number is divisible by 2^n if the last n digits of the number are divisible by 2^n. For 64 (2^6), the last 6 digits must be divisible by 64.

Even and Odd Rule

An even divisor can only divide even numbers. If the divisor is 64, any number ending in 1, 3, 5, 7, or 9 is automatically excluded.

Divisibility by 8

A number is divisible by 8 if its last three digits are divisible by 8. This is a prerequisite for divisibility by 64.

Q79. Answer: (a) 8

Given:

1 is added to each odd digit and 2 is subtracted from each even digit in the number 7125843.

Given	7	1	2	5	8	4	3
Operation	+1	+1	-2	+1	-2	-2	+1
New number	8	2	0	6	6	2	4

The new number formed is 8206624.

The highest digit in the new number is 8.

The lowest digit in the new number is 0.

Sum of the highest and lowest digits = 8 + 0 = 8.

Hence, the correct answer is "Option 1".

Q80. Answer: (a) 1.2

Shortcut Trick

Mean Proportional of a and b = √(a × b)

=> Mean Proportional = √(0.09 × 16)

=> Mean Proportional = 0.3 × 4 = 1.2

Therefore The correct answer is 1.2.

Alternate Method

Given: First number (a) = 0.09, Second number (b) = 16

Formula Used: If x is the mean proportional between a and b, then a : x :: x : b

=> $x^2 = 0.09 \times 16$

=> x = √(0.09 × 16)

=> x = √(1.44)

=> x = 1.2

Therefore The correct answer is 1.2.

Additional Information

Third Proportional

The third proportional of two numbers a and b is defined as c such that a : b = b : c, given by $c = b^2/a$.

Fourth Proportional

The fourth proportional of three numbers a, b, and c is d such that a : b = c : d, given by d = (b × c)/a.

Continued Proportion

Numbers a, b, c are in continued proportion if a/b = b/c, which implies $b^2 = ac$.

Q81. Answer: (b) To display and edit the contents of a cell

The Correct answer is To display and edit the contents of a cell.

Key Points

• The Formula Bar in MS Excel is a tool used to view, enter, or edit data and formulas in a selected cell.

• It is located above the worksheet area, just below the Ribbon, and is divided into two parts: the Name Box (on the left) and the Edit Box (on the right).

• This bar is essential for working with formulas and functions, as it allows users to manipulate cell contents directly without editing the cell in the worksheet.

• When a cell is selected, the Formula Bar displays the contents or the formula of that cell, making it easier to understand and modify complex formulas.

• The Formula Bar also supports copy-paste actions, enabling users to quickly transfer data or formulas between cells.

• It is particularly useful for dealing with long texts or formulas, as the bar provides more space to view and edit the content compared to the cell itself.

• Additionally, the Formula Bar provides a visual cue when working with functions, as it highlights the structure and arguments of the formula being used.

Additional Information

• To insert charts and images

• This functionality is handled by the Insert Tab in the Ribbon, not the Formula Bar.

• The Insert Tab allows users to add charts, pictures, shapes, and other graphical elements to enhance their data presentation.

• To change the background color of cells

• Cell formatting, including background color, is managed through the Home Tab, specifically under the Font group or the Format

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Cells dialog box.

• This feature is used for visual organization and highlighting important data.

• To navigate between worksheets

• Navigation between worksheets is done using the sheet tabs located at the bottom of the Excel window.

• Users can click on these tabs to switch between sheets or use keyboard shortcuts like Ctrl + Page Up/Page Down.

Q82. Answer: (c) Chaman Arora

The correct answer is Chaman Arora.

Key Points

• Chaman Arora is a renowned author in the Dogri language, which is widely spoken in the Jammu region of India.

• He has been awarded the Sahitya Akademi Award 2024 for his exceptional literary contribution through his book titled 'Ik Hor Ashwthama.'

• The Sahitya Akademi Award is one of the most prestigious literary honors in India, presented annually to authors for their outstanding works in 24 recognized Indian languages.

• The book 'Ik Hor Ashwthama' is a remarkable work of fiction that explores deep philosophical themes and the human condition, earning critical acclaim from literary experts and readers.

• The award not only acknowledges the literary excellence of Chaman Arora but also highlights the richness and cultural significance of the Dogri language.

• Through his writings, Chaman Arora has significantly contributed to the growth and preservation of Dogri literature, making him a deserving recipient of this honor.

Additional Information

• Madhav Kaushik

• Madhav Kaushik is a celebrated Hindi and Punjabi poet but has no contribution to Dogri literature or the book 'Ik Hor Ashwthama'.

• He is known for his contributions to modern Hindi poetry and literature.

• Vilas Dangre

• Vilas Dangre is a Marathi writer known for his works in Marathi literature.

• He has no association with the Dogri language or the book 'Ik Hor Ashwthama'.

• Velu Aasaan

• Velu Aasaan is a Tamil writer known for his contributions to Tamil literature.

• He has not worked in the Dogri language or authored the book 'Ik Hor Ashwthama'.

Q83. Answer: (a) Indian Journal of Physics

The correct answer is Indian Journal of Physics.

Key Points

• The Indian Journal of Physics was founded by CV Raman in the year 1926.

• This journal holds a significant place in the history of Indian science and research as it provided a platform for scientists to publish their work during the early 20th century.

• CV Raman, a Nobel Laureate in Physics (1930), established this journal to encourage and promote scientific research in India.

• It is one of the oldest scientific journals in India and continues to be published to this day.

• The focus of the journal is on publishing high-quality research in the field of physics, covering a wide range of topics such as optics, quantum mechanics, condensed matter physics, and more.

• The journal played a pivotal role in advancing the scientific community in India and fostering collaborations with international researchers.

Additional Information

• Current Science

• The Current Science journal is a multidisciplinary science journal published in India.

• It was first published in 1932, and its primary focus is to disseminate important research in various scientific disciplines.

• Although it is another key Indian scientific publication, it was not founded by CV Raman but is associated with the Indian Academy of Sciences.

• Nature India

• Nature India is a localized version of the internationally renowned Nature journal.

• It focuses on highlighting high-quality research and scientific advancements emerging from India.

• This publication is a part of the Springer Nature group and was not founded by CV Raman.

• Science India Monthly
• The Science India Monthly is a popular science magazine aimed at spreading awareness about scientific developments in India.
• This publication focuses on making science accessible to a broader audience, including students and enthusiasts.
• It is not associated with CV Raman.

Q84. Answer: (b) Both conclusions (I) and (II) follow

Given Statements:
• All bears are cats.
• All cats are pandas.
• Some bears are tigers.
The least Venn diagram is,
Conclusions:
Conclusion (I): Some tigers are cats - True (Some bears are tigers, and all bears are cats.)
Conclusion (II): Some pandas are bears - True (All bears are cats, and all cats are pandas, so all bears are pandas.)
Therefore, both conclusion I and II follow from the given statements.
Hence, the correct answer is "Option 2".

Q85. Answer: (b) Father's mother's brother

A is				
Symbol	•	–	x	•
Meaning	Mother	Brother	Wife	Father*
of B				

Given Expression: P x Q - R + S + T
P x Q: P is the wife of Q.
Q – R: Q is the brother of R.
R + S: R is the mother of S.
S ÷ T: S is the father of T.
According to the given information Family Tree Representation:
Therefore, Q is the Father's mother's brother of T.
Hence, the correct answer is "Option 2"

Q86. Answer: (d) Only 1 and 3

The Correct answer is Only 1 and 3.
Key Points
• The Indian Ocean Ship (IOS) Sagar initiative is a significant undertaking by the Indian Navy, focusing on enhancing cooperation and maritime domain awareness in the Southwest Indian Ocean Region (IOR).
• The initiative involves the deployment of the naval ship INS Sunayna with a combined crew of India and nine Friendly Foreign Countries (FFCs).
• The deployment of INS Sunayna is planned for over a month in April 2025, with port calls scheduled at Dar-es-Salaam, Nacala, Port Louis, Port Victoria, and Male.
• This initiative highlights India's commitment to strengthening maritime security and regional partnerships in the Indian Ocean Region.
• The correct answer excludes statement 2 because there is no concrete mention of FFC personnel undergoing training at naval professional schools in Visakhapatnam in the given context.
Additional Information
• INS Sunayna
• INS Sunayna is an offshore patrol vessel (OPV) in the Indian Navy.
• It plays a crucial role in maritime surveillance, anti-piracy missions, and disaster relief operations.
• The ship is equipped with modern navigation and communication systems to enhance operational efficiency.
• Friendly Foreign Countries (FFCs)
• Friendly Foreign Countries represent nations with which India shares strategic, defense, and diplomatic partnerships.
• This collaboration aims to build interoperability and mutual trust among partner nations in maritime operations.

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• Indian Ocean Region (IOR)

• The Indian Ocean Region is strategically important due to its critical sea lanes of communication (SLOCs), which are vital for global trade.

• India's role in the IOR is pivotal for maintaining peace, security, and stability in the region.

Q87. Answer: (c) GSLV-F15

The Correct answer is GSLV-F15.

Key Points

• GSLV-F15 is a launch vehicle developed by the Indian Space Research Organisation (ISRO).

• It is a part of the Geosynchronous Satellite Launch Vehicle (GSLV) series, which is designed to launch heavier satellites into geostationary orbits.

• The NVS-02 navigation satellite was launched onboard the GSLV-F15 in January 2025.

• NVS-02 is a satellite in the Navigation with Indian Constellation (NavIC) system, which aims to provide precise positioning services over India and its surroundings.

• The GSLV series employs a combination of solid, liquid, and cryogenic stages, making it capable of launching satellites weighing up to 2–2.5 tons.

• It is equipped with advanced technologies to ensure successful satellite deployment in the desired orbit.

• The mission signifies India's growing technological capabilities in the area of space navigation and satellite deployment.

Additional Information

• PSLV-C55

• PSLV (Polar Satellite Launch Vehicle) is primarily used for launching satellites into polar orbits.

• It is one of ISRO's most reliable launch vehicles, often used for smaller payloads and low Earth orbit missions.

• PSLV has successfully launched various Indian and international satellites but is not typically used for navigation satellites like NVS-02.

• LVM3-M5

• LVM3 (Launch Vehicle Mark-3), also known as GSLV Mk III, is India's heavy-lift launch vehicle.

• It was famously used for missions like Chandrayaan-2 and Gaganyaan.

• LVM3 is capable of carrying payloads up to 4 tons to geostationary orbits but was not used for the NVS-02 mission.

• GSLV-F16

• GSLV-F16 is another launch vehicle in the GSLV series, similar to GSLV-F15.

• While it belongs to the same family, this specific mission designation was not used for the NVS-02 navigation satellite.

Q88. Answer: (a) File → New → Blank Presentation

The Correct answer is File → New → Blank Presentation.

Key Points

• In MS PowerPoint 2016 or later, creating a blank presentation is a straightforward process and begins with the File menu.

• The correct sequence of steps is: File → New → Blank Presentation.

• The File menu provides access to the "New" option where users can select templates, including the option for a blank presentation.

• Choosing "Blank Presentation" starts a fresh slide deck with a default layout, containing a title slide ready for customization.

• This method ensures that users begin with a clean slate, free of preloaded content or designs, allowing maximum flexibility for creating presentations.

• MS PowerPoint is widely used for creating professional presentations and is part of the Microsoft Office Suite.

• Starting with a blank presentation is beneficial when users want to design slides from scratch without using templates or themes.

• It is a commonly used approach in corporate, educational, and personal settings to build tailored and specific content.

Additional Information

• View → New Window → Blank

• This sequence is not valid for starting a blank presentation. The "View" tab is primarily used for adjusting the display of slides, such as switching between slide views or creating a new window for the same presentation.

• The "New Window" option duplicates the current presentation in a new window, rather than initiating a blank presentation.

• File → Save As → Blank Template

• This option is related to saving a presentation, not creating one. The "Save As" feature allows users to save an existing presentation as a template for future use.

• It does not start a new blank presentation.

• Home → Layout → Clear All

• This sequence deals with changing or clearing the layout of slides, not initiating a blank presentation.

• The "Home" tab's "Layout" option provides different slide designs but does not create a new presentation.

Q89. Answer: (d) Compulsion on sepoys to wear their caste marks and follow their own caste

The Correct answer is Compulsion on sepoys to wear their caste marks and follow their own caste.

Key Points

• The statement about compulsion on sepoys to wear their caste marks and follow their own caste is incorrect because during British rule, the colonial administration was known for disregarding the caste and religious sentiments of Indian soldiers (sepoys).

• The British policies often caused resentment among the sepoys due to their perceived disrespect for Indian religious practices and social norms.

• Instead of enforcing caste-based practices, the British policies included actions that undermined caste and religious beliefs, like the introduction of the controversial Enfield rifle cartridges greased with cow and pig fat, which offended both Hindus and Muslims.

• These actions were among the prominent causes that inflamed the feelings of sepoys and contributed to the outbreak of the Revolt of 1857.

• The British Army often made no attempt to maintain the caste hierarchies or religious practices of Indian soldiers, leading to widespread dissatisfaction.

Q90. Answer: (a) New Delhi

The Correct answer is New Delhi.

Key Points

• The International Cooperative Alliance (ICA) is a global organization that promotes and strengthens cooperative enterprises worldwide.

• The Global Cooperative Conference is one of ICA's flagship events, where leaders from cooperative organizations across the globe gather to discuss issues, share knowledge, and collaborate on strategies to enhance the cooperative movement.

• In November 2024, the conference and general assembly are set to take place in New Delhi, India, highlighting the country's significant role in the global cooperative movement.

• New Delhi, the capital city of India, is known for hosting numerous international events and conferences due to its world-class infrastructure and strategic location.

• The choice of New Delhi emphasizes India's rich history of cooperatives, particularly in the agricultural, dairy, and banking sectors, which have contributed significantly to its economy.

• India is home to some of the world's largest cooperative organizations, such as Amul and IFFCO, making it a fitting venue for this prestigious event.

• This conference will provide a platform to showcase India's cooperative success stories and foster international collaborations.

Additional Information

• Mumbai

• Mumbai is India's financial capital and home to numerous multinational corporations and financial institutions.

• It hosts several national and international trade events but is not the venue for the ICA Global Cooperative Conference 2024.

• Bengaluru

• Bengaluru, often referred to as the Silicon Valley of India, is known for its IT and tech industry.

• Although it frequently hosts global tech conferences, it is not chosen for the ICA event in 2024.

• Hyderabad

• Hyderabad is a major hub for the pharmaceutical and technology industries in India.

• It is known for hosting global summits like the Global Entrepreneurship Summit, but it is not the location for the ICA Global Conference 2024.

Q91. Answer: (b) = WYC, % = GIM

Given:

: ACG :: CEI : %

Analysis of Options:

Option 1) # = WYC, % = KIM

For # (WYC) to ACG

For CEI to % (KIM)

Option 2) # = WYC, % = GIM

For # (WYC) to ACG

For CEI to % (GIM)
Since the pattern for WYC to ACG (+4, +4, +4) is the same as the pattern for CEI to GIM (+4, +4, +4),
Option 2 is correct.
Option 3) # = WYC, % = GIK
For # (WYC) to ACG
For CEI to % (GIK)
Option 4) # = XYC, % = GIM
For # (XYC) to ACG
For CEI to % (GIM)
Hence, the correct answer is "Option 2".

Q92. Answer: (d) 2

The given code language is:
Thus, 'H' is coded as '2'.
Hence, the correct answer is "Option 4".

Q93. Answer: (c) √2

Shortcut Trick
Mean proportional between a and b is √(a × b).
Product = (9 + 4√5) × 2 × (9 − 4√5)
Product = 2 × (9² − (4√5)²) = 2 × (81 − 80) = 2 × 1 = 2.
Mean Proportional = √2.
Therefore The correct answer is √2.
Alternate Method
Given:
First number (a) = 9 + 4√5
Second number (b) = 18 − 8√5 = 2(9 − 4√5)
Formula Used:
Mean proportional x between a and b is given by x = √(a × b)
Algebraic Identity: (a + b)(a − b) = a² − b²
Calculations:
=> x = √[(9 + 4√5) × (18 − 8√5)]
=> x = √[(9 + 4√5) × 2 × (9 − 4√5)]
=> x = √[2 × (9 + 4√5)(9 − 4√5)]
=> x = √[2 × (9² − (4√5)²)]
=> x = √[2 × (81 − 16 × 5)]
=> x = √[2 × (81 − 80)]
=> x = √[2 × 1]
=> x = √2
Therefore The correct answer is √2.
Additional Information
Mean Proportional
If three quantities a, b, c are in continued proportion such that a:b = b:c, then b is the mean proportional and b² = ac.
Third Proportional
In the continued proportion a:b = b:c, the value c is called the third proportional, calculated as c = b²/a.
Fourth Proportional
If a:b = c:d, then d is the fourth proportional to a, b, c, calculated as d = (b × c)/a.

Q94. Answer: (a) They are closest to the people and understand local problems

The Correct answer is They are closest to the people and understand local problems.
Key Points
• Local self-government institutions like Panchayats play a vital role in grassroots democracy.
• These institutions are closest to the people and have a better understanding of local issues, needs, and priorities.

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• Panchayats enable people to participate directly in the decision-making process, fostering a sense of ownership and responsibility.

• They ensure the efficient utilization of resources by addressing specific regional problems and implementing solutions tailored to the local context.

• These institutions act as a bridge between the citizens and higher administrative bodies, facilitating bottom-up governance.

• The 73rd Constitutional Amendment Act (1992) institutionalized Panchayati Raj in India, empowering local bodies to perform functions related to education, health, sanitation, and rural development.

• Panchayats also help in fostering social inclusivity by providing marginalized sections of society a platform to voice their concerns.

Q95. Answer: (c) Odissi

The Correct answer is Odissi.

Key Points

• Odissi is a classical Indian dance form that originated in Odisha.

• It is one of the oldest dance forms in India, with its roots tracing back to 200 BCE.

• The dance was historically performed by Maharis, who were female temple dancers, as part of their service to Lord Jagannath in Odisha.

• Maharis dedicated their performances to spiritual devotion, portraying mythological stories and religious themes.

• Odissi is characterized by intricate movements, graceful postures, and expressions known as Bhaav.

• The dance style also incorporates elements of Natya (drama), Nritta (pure dance), and Nritya (expressive dance).

• Today, Odissi is performed globally and remains a significant part of India's cultural heritage.

Additional Information

• Kathak

• Kathak originated in northern India and is based on storytelling, derived from the Sanskrit word Katha, meaning "story."

• This dance form incorporates intricate footwork, spins, and emotive expressions known as Abhinaya.

• Kathak has three main gharanas: Lucknow, Jaipur, and Banaras.

• Kathakali

• Kathakali originated in Kerala and is a highly stylized classical dance-drama.

• It is known for its elaborate costumes, facial makeup, and intricate hand gestures or Mudras.

• Kathakali is typically performed during night-long events depicting stories from Indian epics like the Mahabharata and Ramayana.

• Kuchipudi

• Kuchipudi originated in Andhra Pradesh and is characterized by its fluid movements and dramatic storytelling.

• This dance form combines elements of speech, music, and acting with dance.

• Kuchipudi performances often include a blend of solo and group dances.

Q96. Answer: (b) = ZTP, % = QKG

Given:

: WQM :: TNJ : %

Analysis of Options:

Option 1) # = KUY, % = QKJ

For # (KUY) to WQM

For TNJ to % (QKJ)

Option 2) # = ZTP, % = QKG

For # (ZTP) to WQM

For TNJ to % (QKG)

Since the pattern for ZTP to WQM (-3, -3, -3) is the same as the pattern for TNJ to QKG (-3, -3, -3),

Option 2 is correct.

Option 3) # = JTP, % = MWR

For # (JTP) to WQM

For TNJ to % (MWR)

Option 4) # = MKP, % = QPI

For # (MKP) to WQM

For TNJ to % (QPI)

Hence, the correct answer is "Option 2".

Q97. Answer: (a) 17.4%

The Correct answer is 17.4%.

Key Points

• As per the Census 2011, 17.4% of the urban population in India lives in slum conditions.

• A slum is characterized by poor housing conditions, lack of sanitation, and overcrowding.

• The Census 2011 provides comprehensive data about the demographic, social, and economic conditions in India, including urban living conditions.

• Slum areas in India are mainly concentrated in cities like Mumbai, Delhi, Kolkata, and Chennai.

• The data reflects challenges in urban areas such as poverty, inadequate infrastructure, and lack of access to basic services.

• Efforts to address slum conditions include government initiatives like the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and the Pradhan Mantri Awas Yojana (PMAY).

• The government aims to provide affordable housing and improve living conditions for the urban poor through these programs.

• Slum population data is critical for planning and implementing urban development policies.

Additional Information

• Census 2011

• Census 2011 was conducted under the supervision of the Registrar General and Census Commissioner of India.

• It was the 15th National Census conducted in India and covered aspects like population, literacy rates, sex ratio, and urbanization.

• The census is conducted every 10 years, with the previous one held in 2001.

• The data collected in Census 2011 is used for policy-making, resource allocation, and urban planning.

• Urbanization in India

• India has witnessed rapid urbanization in the last few decades due to factors like industrialization, migration, and economic development.

• Urbanization presents opportunities for economic growth but also creates challenges such as housing shortages, traffic congestion, and environmental degradation.

• The government is actively working to address urban challenges through programs like the Smart Cities Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT).

Q98. Answer: (d) Rs. 2 profit

Shortcut Trick

Total pens = 20 + 30 = 50 pens.

Weighted Average CP = (20 × 15 + 30 × 10) ÷ 50.

Average CP = (300 + 300) ÷ 50 = 600 ÷ 50 = Rs. 12 per pen.

Selling Price (SP) = Rs. 14 per pen.

Profit per pen = SP − CP = 14 − 12 = Rs. 2.

Therefore The correct answer is Rs. 2 profit.

Alternate Method

Given → Quantity 1 = 20, Rate 1 = Rs. 15; Quantity 2 = 30, Rate 2 = Rs. 10; SP = Rs. 14.

Formulas: Total CP = (Q1 × C1) + (Q2 × C2) | Average CP = Total CP ÷ Total Quantity | Profit = SP − CP

=> Total CP = (20 × 15) + (30 × 10) = 300 + 300 = Rs. 600.

=> Total Quantity = 20 + 30 = 50 pens.

=> Average CP per pen = 600 ÷ 50 = Rs. 12.

=> Selling Price per pen = Rs. 14.

=> Profit per pen = 14 − 12 = Rs. 2.

Therefore The correct answer is Rs. 2 profit.

Additional Information

Weighted Average Cost

When items of different prices are mixed, the average cost price is calculated by dividing the total cost of all items by the total quantity.

Profit and Loss

If Selling Price (SP) > Cost Price (CP), it is a Profit. Profit Percentage = (Profit ÷ CP) × 100.

Q99. Answer: (b) 42

Shortcut Trick

Time taken by B = (Product of days) ÷ (Difference of days)

=> Time = (7 × 6) ÷ (7 − 6)

=> Time = 42 ÷ 1 = 42 days.

Therefore The correct answer is 42 days.

Alternate Method

Given:

Time taken by (A + B) = 6 days

Time taken by A alone = 7 days

Method: LCM Method (Total Work ÷ Efficiency)

Person	Days	Total Work	Efficiency
A + B	6	42	7
A	7	6	

=> Efficiency of (A + B) = 7 units/day

=> Efficiency of A = 6 units/day

=> Efficiency of B = Efficiency of (A + B) − Efficiency of A

=> Efficiency of B = 7 − 6 = 1 unit/day

=> Time taken by B = Total Work ÷ Efficiency of B

=> Time = 42 ÷ 1 = 42 days

Therefore The correct answer is 42 days.

Additional Information

Work and Efficiency Relation

Efficiency is inversely proportional to the time taken to complete a work. Formula: Work = Efficiency × Time.

Combined Work Formula

If two individuals complete a work in x and y days respectively, their combined time is (x × y) ÷ (x + y).

Pipes and Cisterns

This logic is similar to inlet and outlet pipes, where efficiency is added or subtracted based on the nature of the work.

Q100. Answer: (b) Ganderbal, Jammu & Kashmir National Conference (JKNC)

The Correct answer is Ganderbal, Jammu & Kashmir National Conference (JKNC).

Key Points

• The current Chief Minister of Jammu & Kashmir contested the 2024 Assembly Elections from the Ganderbal constituency.

• The Ganderbal constituency is located in the Kashmir Valley region of Jammu & Kashmir.

• The Chief Minister represents the Jammu & Kashmir National Conference (JKNC), a prominent political party in the region.

• The Jammu & Kashmir National Conference (JKNC) is one of the oldest political parties in Jammu & Kashmir, known for its strong influence in the region.

• Historically, the Ganderbal constituency has been a significant political hub, often associated with key leaders of the National Conference.

• The National Conference has played a pivotal role in shaping the political landscape of Jammu & Kashmir, particularly in advocating for regional autonomy and development.

Additional Information

• Baramulla, Jammu & Kashmir National Conference (JKNC)

• Baramulla is another important constituency in the Kashmir Valley. It is known for its strategic importance and diverse population.

• Although the National Conference has a presence in Baramulla, in the 2024 elections, the Chief Minister did not contest from this constituency.

• Srinagar, Indian National Congress (INC)

• Srinagar is the summer capital of Jammu & Kashmir and a key political center.

• The Indian National Congress (INC) is a national political party with representation in Jammu & Kashmir, but the Chief Minister

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represents the National Conference.

• Jammu & Kashmir People's Democratic Party (JKPDP)

• The Jammu & Kashmir People's Democratic Party (JKPDP) is another major political party in the region, often known for its focus on reconciliation and peace-building.

• While JKPDP has influence in many areas, the Chief Minister is affiliated with the National Conference, not JKPDP.

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