RRB NTPC Graduate Level CBT-I Official Paper (Held On: 23 Jun, 2025 Shift 3) (Previous Year Paper)

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

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Q1. While covering a distance of 39 km, a man noticed that after cycling for 5 hours 5 minutes, the distance covered by him was 5/4 of the remaining distance. What was his speed (in km/hr, rounded off to one decimal place)?

(a) 6.5
(b) 3.2
(c) 1.9
(d) 4.3

Q2. As per the Union Budget 2025-26, Asset Monetization Plan 2025-30, what will be the amount for the second plan for 2025-30 with the aim to reinvest in new projects?

(a) Rs. 25 lakh crore
(b) Rs. 15 lakh crore
(c) Rs. 20 lakh crore
(d) Rs. 10 lakh crore

Q3. If $a^2+b^2=132$ and $a\times b=36$, then find $(a-b)/((a+b))$, where $a>b$.

(a) √(11/17)
(b) √(5/11)
(c) √(17/37)
(d) √(5/17)

Q4. The Narmada River originates from which hills?

(a) Western Ghats
(b) Vindhyachal
(c) Satpura
(d) Aravalli

Q5. How many writs mentioned in the Constitution of India enforce Fundamental Rights?

(a) Four Writs
(b) Five Writs
(c) Six Writs
(d) Seven Writs

Q6. A sum of money is to be distributed among A, B, C, and D in the ratio of 10 : 4 : 8 : 5. If C gets Rs. 24 more than B, how much did A receive?

(a) Rs. 59
(b) Rs. 60
(c) Rs. 58
(d) Rs. 63

Q7. The average weight of A, B and C is 45 kg. If the average weight of A and B is 39 kg and that of B and C is 48 kg, then the weight of B (in kg) is:

(a) 39
(b) 54
(c) 29
(d) 49

Q8. What was notable about Vidarbha's performance in the Ranji Trophy 2024-25?

(a) They won the title for the first time
(b) They won the title for the third time in seven seasons
(c) They lost the final to Kerala
(d) They did not qualify for the final

Q9. John Green's non-fiction book, released in March 2025, discusses the history and impact of which disease?

(a) Influenza
(b) Tuberculosis
(c) Malaria
(d) Cholera

Q10. In a certain code language,

A + B means ‘A is the son of B’,

A – B means ‘A is the sister of B’,

A x B means ‘A is the wife of B’ and

A ÷ B means ‘A is the father of B’.

Based on the above, how is E related to K if ‘E + F – G x H ÷ K’?

(a) Mother's sister's son
(b) Father's sister's son
(c) Father's sister's husband
(d) Mother's sister's husband

Q11. The Home Rule Movement in India, launched during the World War I, aimed to attain self-government within the British Empire. Which two prominent leaders were associated with starting this movement?

(a) Annie Besant and Bal Gangadhar Tilak
(b) Mahatma Gandhi and Gopal Krishna Gokhale
(c) Lala Lajpat Rai and Bipin Chandra Pal
(d) Jawaharlal Nehru and Subhas Chandra Bose

Q12. What is the main purpose of the Tab key on a standard keyboard?

(a) To insert a forward slash
(b) To remove text
(c) To close the active application
(d) To shift the cursor to the next field or tab position

Q13. In February 2025, how much total budget was allocated to the Ministry of Youth Affairs and Sports in the Union Budget?

(a) Rs. 4,132 crore
(b) Rs. 3,254 crore
(c) Rs. 2,808 crore
(d) Rs. 3,790 crore

Q14. The total surface area of a cylinder is 396 ~cm², and its radius is 7 ~cm. Find the volume (in cm³) of the cylinder. Use π=frac227

(a) 308
(b) 300
(c) 307

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(d) 314

Q15. In a quadrilateral QRST, angle Q = 52° and angle R = 44°. The bisectors of angle S and angle T meet at E. What is the measure of angle TES ?

(a) 48°
(b) 59°
(c) 44°
(d) 37°

Q16. Under which Act was the National Legal Services Authority (NALSA), which conducts Lok Adalats along with other Legal Services Institutions, constituted?

(a) Public Interest Litigation Act, 1990
(b) Legal Services Authorities Act, 1987
(c) Advocates Act, 1961
(d) Indian Bar Council Act, 1926

Q17. Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Note: All numbers are single digit numbers only.)

(Left) % 3 £ 3 & © * 3 & 7 7 3 7 % 4 8 © * 1 * 9 9 (Right)

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

(a) 3
(b) 2
(c) 4
(d) 5

Q18. A dealer purchased a washing machine for Rs. 1,301. After allowing a discount of 53% on its marked price, he still gains 41%. Find the marked price of the washing machine.

(a) Rs. 3,917
(b) Rs. 3,940
(c) Rs. 3,903
(d) Rs. 3,886

Q19. What is the product of the roots of the equation $kx^3-5x^2-12x+k=0$?

(a) 1/12
(b) 1
(c) -1
(d) -1/12

Q20. The sum of interior angles of a regular polygon is 1260°. Find the number of diagonals of this regular polygon.

(a) 35
(b) 27
(c) 20
(d) 44

Q21. Which of the following countries will host the 2025 G20 Summit for the first time on the African continent?

(a) Egypt
(b) South Africa
(c) Nigeria
(d) Kenya

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Q22. A person drove at 23 km/hr for 4.5 hours, then increased his speed by 11 km/hr, and reached the destination in another hour. Find the average speed (in km/hr) of the person during the entire journey.

(a) 21
(b) 26
(c) 25
(d) 22

Q23. F, G, H, K, L, and M live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it is numbered 2, and so on till the topmost floor, which is numbered 6. L lives on floor number 5. H lives on a floor above L. Only K lives below M. F lives on an even numbered floor. How many people live below G?

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

Q24. What should come in place of the question mark (?) in the given series?

173, 151, 131, 113, 97, ?

(a) 68
(b) 76
(c) 83
(d) 91

Q25. Which of the following ratios is greatest?

(a) 9 : 11
(b) 10 : 27
(c) 31 : 38
(d) 11 : 11

Q26. What was the main focus of the Aligarh Movement?

(a) Women's Rights
(b) Modern Education among Muslims
(c) Hindu Revivalism
(d) Abolition of Sati

Q27. A sells a camera to B at a loss of 60% and B sells the camera to C at a profit of 25%. If C purchased the camera for Rs. 62,616, then what was the cost (in Rs.) of the camera for A?

(a) 1,25,226
(b) 1,25,232
(c) 1,25,229
(d) 1,25,230

Q28. Who among the following has been appointed as the CEO of the Indian Railway Finance Corporation (IRFC) in October 2024?

(a) Manoj Kumar Dubey
(b) Ajit Kumar Saxena
(c) Vijaya Kishore Rahatkar
(d) Paramesh Sivamani

Q29. If $x+1/x=33$, then $x^2+1/(x^2)$ is :

(a) 1091
(b) 1083
(c) 1089
(d) 1087

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Q30. Which smallest number should be added to 13874 so that the sum is completely divisible by 67?

(a) 60
(b) 64
(c) 57
(d) 62

Q31. 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) IL - FI
(b) MJ - DF
(c) NQ - KN
(d) MP - JM

Q32. Who was the founder of the Gurjara - Pratihara dynasty?

(a) Vatsaraja
(b) Gopala
(c) Bhoja
(d) Nagabhata I

Q33. In January 2025, which Indian state came under President's Rule due to ongoing ethnic violence and the resignation of its Chief Minister?

(a) Tripura
(b) Manipur
(c) Assam
(d) Nagaland

Q34. Mukesh sold a car for Rs. 2,03,700 at 10% loss. For what price (in Rs.) should he sell the car to gain 68% profit?

(a) 3,80,238
(b) 3,80,243
(c) 3,80,240
(d) 3,80,237

Q35. Yogesh invested some money in a bank at 5% per annum rate of interest. What would be the corresponding simple interest (in Rs.) if after 2 years, Yogesh got Rs. 102.5 as compound interest, considering annual compounding?

(a) 95
(b) 100
(c) 110
(d) 115

Q36. In March 2025, the Indian government passed the Waqf (Amendment) Act, leading to nationwide protests. Which organisation led the protests, calling the bill "unconstitutional and undemocratic"?

(a) All India Shia Personal Law Board
(b) All India Muslim Personal Law Board
(c) Imarat-e-Shariah
(d) Jamiat Ulema-e-Hind

Q37. Mr. XYZ starts from Point A and drives 15 km towards the west. He then takes a left turn, drives 11 km, turns left and drives 19 km. He then takes a left turn and drives 16 km. He takes a final left turn, drives 4 km and stops at Point P. How far (shortest distance) and in which direction should he drive in order to reach Point A again? (All turns are 90-degree turns only unless specified)

(a) 3 km to the east
(b) 5 km to the south
(c) 5 km to the west
(d) 3 km to the north

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Q38. Seven people, A, B, L, M, N, S, and T are sitting in a row, facing north. Only three people sit between A and S. M sits to the immediate left of S. No one sits to the right of T. Only two people sit between T and M. N sits to the immediate right of L.

How many people sit between B and N?

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

Q39. Sub-irrigation in India is particularly suitable for areas with:

(a) sandy soil
(b) low soil fertility
(c) low water table
(d) high water table

Q40. Ravi spends Rs. 250 on Monday, Rs. 300 on Tuesday, Rs. 275 on Wednesday, Rs. 325 on Thursday, and Rs. 350 on Friday. What is his average daily expenditure over these five days?

(a) Rs. 310
(b) Rs. 320
(c) Rs. 300
(d) Rs. 280

Q41. Select the pair which follows the same pattern as that followed by the two set of pairs given below. Both pairs follow the same pattern.

ICK : KEF

HDW : JFR

(a) GGP : IJK
(b) VJF : XLA
(c) KLR : MNN
(d) RFM : TIH

Q42. Demetrius, a Bactrian-Greek ruler, came into conflict with _____.

(a) Harsha
(b) Nahapana
(c) Simuka
(d) Pushyamitra

Q43. The PM-KISAN scheme launched by the Central Government falls under which category of boxes under the WTO's Agreement on Agriculture?

(a) Red box
(b) Amber box
(c) Blue box
(d) Green box

Q44. In which year did Goa become the capital of the Portuguese Commercial empire in India?

(a) 1530
(b) 1390
(c) 1659
(d) 1410

Q45. How many Indian States and Union Territories have a coastline as per the Annual Report 2022-23 of the Ministry of Home Affairs?

(a) 10 States and 5 Union Territories
(b) 11 States and 6 Union Territories
(c) 9 States and 4 Union Territories

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(d) 8 States and 3 Union Territories

Q46. YAGK is related to RTZD in a certain way based on the English alphabetical order. In the same way, WYEI is related to PRXB. To which of the following options is BDJN related, following the same logic?

(a) UWHY
(b) UWCH
(c) UWCG
(d) UWAC

Q47. A tank can be filled by two pipes C and D in 60 minutes and 40 minutes, respectively. How much time will it take to fill the tank from the empty state if D is used for half the time and C and D fill it together for the other half?

(a) 30 minutes
(b) 15 minutes
(c) 1 hour
(d) 50 minutes

Q48. Why did Mendeleev leave gaps in his periodic table?

(a) For undiscovered elements
(b) To make the table look symmetrical
(c) To include isotopes
(d) To avoid repetition of elements

Q49. What is the mode of the following data?

53, 47, 43, 42, 52, 54, 54, 51, 42, 53, 53, 48, 46, 43, 43, 40, 43, 41

(a) 43
(b) 47
(c) 42
(d) 53

Q50. MQIL is related to FJBE in a certain way based on the English alphabetical order. In the same way, OSKN is related to HLDG. To which of the given options is QUMP related, following the same logic?

(a) NJFI
(b) JNIF
(c) NJIF
(d) JNFI

Q51. What will come in place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

35 − 112 × 84 ÷ 48 + 75 = ?

(a) 86
(b) 174
(c) 24
(d) 46

Q52. Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

AAA 16, ECZ 36, IEY 64, MGX 100, ?

(a) QIW 144
(b) UVW 81
(c) UIW 121
(d) WIU 100

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Q53. What is the complete set of both base and derived units called?

(a) Scientific model
(b) Universal constant system
(c) System of units
(d) Measurement set

Q54. By how much is 60% of 40 greater than 3/5 of 15?

(a) 15
(b) 13
(c) 9
(d) 12

Q55. What is the total DGQI 2.0 (Data Governance Quality Index) score achieved by the Department of Rural Development in Q4 of 2023-24?

(a) 4.50 out of 5
(b) 5.00 out of 5
(c) 3.95 out of 5
(d) 4.93 out of 5

Q56. A pipe can fill a tank in 15 hours. Another pipe can empty the filled tank in 40 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

(a) 8
(b) 24
(c) 32
(d) 16

Q57. At what rate (in percentage) per annum will Rs. 1,400 give Rs. 700 as simple interest in 5 years?

(a) 13%
(b) 9%
(c) 12%
(d) 10%

Q58. The efficiency of gas exchange in the alveoli is primarily attributed to which structural characteristic?

(a) Thick epithelial lining to protect from pathogens
(b) Abundance of mucus-secreting cells
(c) A robust elastic network to maintain alveolar shape
(d) Large surface area combined with a thin alveolar-capillary barrier

Q59. What happens if users try to open an MS Excel file created in a newer version (e.g., Excel 2021) in an older version (e.g., Excel 2010)?

(a) The file will open in Compatibility Mode with limited functionality.
(b) The file will be automatically converted to a PDF.
(c) MS Excel will display an error and refuse to open the file.
(d) The file will open normally with all features intact.

Q60. Which of the following states has a sparse population mainly due to hilly terrain?

(a) Odisha
(b) Arunachal Pradesh
(c) Tamil Nadu
(d) Gujarat

Q61. What should come in place of the question mark (?) in the given series based on the English alphabetical order?

XQS VOQ TMO RKM ?

(a) PIL
(b) PJL

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(c) PIK
(d) PJK

Q62. Seven boxes, C, D, E, F, G, H and X, are kept one over the other but not necessarily in the same order. Only two boxes are kept between C and H. Only F is kept above G. Only one box is kept between G and C. E is kept at some place below X but at some place above D. How many boxes are kept between X and D?

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

Q63. What is the mode of the data given below? [Give your answer correct to 2 decimal places.]

Age in years	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of patients	16	21	14	34	37	32	13

(a) 34.15
(b) 53.75
(c) 46.12
(d) 33.05

Q64. What happens when you press 'Ctrl + M' in MS PowerPoint 365?

(a) The slide master view is opened.
(b) A duplicate of the current slide is created.
(c) A new slide is inserted with the same layout as the previous slide.
(d) A new blank slide is inserted regardless of the previous layout.

Q65. What is the primary objective of the hyperloop test track launched by IIT Madras and Indian Railways in 2025?

(a) To promote sustainable transportation solutions
(b) To revolutionise high-speed transportation and reduce travel time
(c) To develop a new mode of transportation for goods
(d) To test the feasibility of vacuum tube technology

Q66. 38 people are standing in a row facing north. Hari is 11^(th) from the right end while Hema is 14^(th) from the left end. How many people are there between Hari and Hema?

(a) 11
(b) 14
(c) 12
(d) 13

Q67. What was the trend in the unemployment rate in usual status for persons of age 15 years and above, for urban areas, from FY23 to FY24, as per the Department of Economic Affairs report?

(a) Increased from 4% to 5%
(b) Decreased from 6% to 5%
(c) Decreased from 5.4% to 5.1%
(d) Remained stable at 5.0%

Q68. If 2 is added to each odd digit and 1 is subtracted from each even digit in the number 75246183, how many digits will appear more than once in the new number thus formed?

(a) Two
(b) None
(c) One
(d) Three

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Q69. This question is based on the five, three-digit numbers given below.

(Left) 815 497 460 637 147 (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 second digit of the highest number is subtracted from the third digit of the lowest number?

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

Q70. Seven people D, E, F, G, L, M and N are sitting in a row, facing north. Only two people sit to the left of L. Only three people sit between L and E. G sits second to the right of L. Only two people sit between G and M. D sits at some place to the right of N but at some place to the left of F. How many people sit to the right of D?

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

Q71. Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group?

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

(a) MSN
(b) HNI
(c) PVQ
(d) KQM

Q72. In this question, a group of number/symbol is coded using letter codes as per the codes given below and the conditions which follow. The correct combination of codes (following only the condition/s that applies) is your answer.

Note: If none of the conditions apply, then codes for the respective number/symbol are to be followed directly as given in the table.

Number/symbol	R	E	A	U	M	D	F	P	Q	I	O	H	N	W	Z	B
Code	#	7	6	$	8	%	•	5	9	4	©	@	d	3	2	1

Conditions:

i) If the first element is a consonant and the third is a vowel, the codes for these two (the first and the third elements) are to be interchanged.

ii) If the first element is vowel and the fourth letter is a consonant, the first and fourth elements are to be coded as the code for the vowel.

iii) If the second and third elements the consonants, both are to be coded as the code for the third element.

Based on the above instructions, what would be the code for ‘OBAHMQ’?

(a) ©16@87
(b) ©16©89
(c) @16@89
(d) @$6@89

Q73. A man spends 50% of his monthly salary on the rent of his house. If every month he also spends Rs. 780 on his conveyance and Rs. 9,800 on his groceries and saves the remaining Rs. 110, his monthly salary is:

(a) Rs. 21,307
(b) Rs. 21,282
(c) Rs. 21,380

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(d) Rs. 21,430

Q74. What should come in place of the question mark (?) in the given series?

1412 1420 1430 1442 1456 ?

(a) 1472
(b) 1474
(c) 1470
(d) 1468

Q75. Which of the following dance forms is NOT associated with Rajasthan?

(a) Kalbelia
(b) Ghoomar
(c) Kacho Ghodi
(d) Tarangmel

Q76. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into 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.)

(7, 80, 22)

(43, 143, 19)

(a) (11, 63, 15)
(b) (13, 89, 21)
(c) (25, 91, 15)
(d) (49, 139, 15)

Q77. Which of the following is true regarding the materials of construction used for Ashokan pillars?

(a) They were largely made of stone.
(b) They were largely made of wood.
(c) They were largely made of concrete.
(d) They were largely made of iron.

Q78. If 1 is added to each even digit and 2 is subtracted from each odd digit in the number 936245, then how many digits will appear more than once in the new number thus formed?

(a) None
(b) One
(c) Three
(d) Two

Q79. Rahul had some marbles. When he distributed the marbles equally among 27 children, he found that 17 marbles were left. Had he distributed the marbles equally among 19 children and 15 children, he still would have had 9 and 5 marbles, respectively, left with him. But when he distributed them equally among 80 children, no marble was left. The number of marbles that Rahul initially had may lie between _____.

(a) 5140 and 5150
(b) 5090 and 5100
(c) 5070 and 5080
(d) 5110 and 5130

Q80. 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 tablets are laptops.

No laptop is a desktop.

No laptop is a mobile.

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Conclusions:

(I) No tablet is a desktop.

(II) Some mobiles are desktops.

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

Q81. Which of the following is NOT a valid way to move selected text in MS Word?

(a) Drag and Drop
(b) Cut and Paste
(c) Format Painter
(d) Ctrl + Drag

Q82. Which among the following is the main reason for classifying economic activities into different sectors in India?

(a) To divide labour across sectors
(b) To increase taxes across sectors
(c) To understand their functioning and interdependence
(d) To reduce employment in capital-intensive sectors

Q83. In the following triads, each group of letters is related to the subsequent one following a certain logic. Select from the given options, the one that follows the same logic.

GOAL - GLAO - LAOG

COMB - CBMO - BMOC

(a) LOST - LSOT - TSOL
(b) OVEL - OVLE - VELO
(c) TING - ITNG - GINT
(d) WISH - WHSI - HSIW

Q84. Which of the following groups is NOT considered a part of the Union Council of Ministers in India?

(a) Deputy Ministers
(b) Ministers of State
(c) Cabinet Ministers
(d) Parliamentary Secretaries

Q85. In April 2025, the Chief Minister of which Indian state inaugurated a newly constructed Jagannath Temple in the coastal town of Digha?

(a) Odisha
(b) Tamil Nadu
(c) West Bengal
(d) Andhra Pradesh

Q86. Which of the following options correctly describes the Indian President's power to summon the Parliament?

(a) The President may summon the Parliament only once every calendar year.
(b) The President may summon the Parliament at least twice a year.
(c) The President can only summon the Parliament after consulting the Prime Minister.
(d) The President may summon the Parliament at his/her discretion with no statutory minimum frequency.

Q87. Which of the following writs protects the right to life and personal liberty mentioned in the Constitution of India?

(a) Mandamus
(b) Certiorari
(c) Habeas Corpus
(d) Prohibition

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Q88. In a certain code language, ‘rough and ready’ is coded as ‘mo hp km’ and ‘road is rough’ is coded as ‘tx km bn’. How is ‘rough’ coded in the given language?

(a) bn
(b) hp
(c) tx
(d) km

Q89. The simplified value of 72 - (-98) × (-31 - 58 - 19) ÷ [9 × {7 + (-2) × (-6)}] is:

(a) 187/19
(b) 182/19
(c) 188/19
(d) 192/19

Q90. In a certain code language, ‘FARM’ is coded as ‘4683’ and ‘MUSE’ is coded as ‘2419’. What is the code for ‘M’ in the given code language?

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

Q91. Mr. J starts from Point U and drives 2 km towards the North. He then takes a right turn, drives 9 km, turns right and drives 3 km. He then takes a right turn and drives 16 km. He then takes a final right turn, drives 1 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point U again? (All turns are 90 degrees turns only unless specified.)

(a) 11 km towards the North
(b) 7 km towards the East
(c) 4 km towards the South
(d) 4 km towards the West

Q92. Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 6 @ $ 1 8 # 9 % ? 2 4 ? 3 ^ 5 & 7 (Right)

If all the numbers are dropped from the series, which of the following will be sixth from the right?

(a) #
(b) %
(c) $
(d) <

Q93. The slant height of a cone is equal to twice the radius of its base. If the cone has a volume of 401π ~cm³, find the magnitude of the cube of its base radius.

(a) 410√3
(b) 402√3
(c) 412√3
(d) 401√3

Q94. Solve for θ: cosθ/(1-sinθ) + cosθ/(1+sinθ)=4 :

(a) 60°
(b) 90°
(c) 45°
(d) 30°

Q95. What was the literacy rate in India according to the 2011 Census?

(a) 72.98%
(b) 76.23%
(c) 74.04%

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(d) 75.12%

Q96. If 1 is added to each odd digit and 2 is subtracted from each even digit in the number 5364178, then what will the sum of the digits which are second from the left and second from the right in the new number thus formed be?

(a) 7
(b) 10
(c) 12
(d) 9

Q97. When saving an MS PowerPoint presentation, what is the primary purpose of the 'Save as Picture Presentation' option?

(a) To optimise the presentation for viewing on low-bandwidth internet connections
(b) To prevent any further editing of the presentation content
(c) To save each slide as a separate image file within a folder
(d) To embed a static image of the first slide as a preview

Q98. Who among the following won the Best Director award at the 2025 Oscars?

(a) Peter Straughan
(b) Sean Baker
(c) Steven Spielberg
(d) Quentin Tarantino

Q99. Find the value of $64x^3 + 27y^3 + 144x^2y + 108xy^2$, when $x = 5$ and $y = -5$.

(a) 125
(b) 120
(c) 150
(d) 100

Q100. Seven times the present age of Anjali is 14 years more than six times the present age of Kamal, and seven times the present age of Kamal is 7 years less than seven times the present age of Anjali. What is the sum of the present ages (in years) of Anjali and Kamal?

(a) 12
(b) 13
(c) 20
(d) 15

ANSWER KEY

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

SOLUTIONS

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Q1. Answer: (d) 4.3

Shortcut Trick

Total distance = 39 km. Ratio of Covered Distance to Remaining Distance = 5 : 4.

Total units = 5 + 4 = 9 units → 39 km. Covered distance = (5/9) × 39 = 21.666 km.

Time taken = 5 hours 5 minutes = 5 + 5/60 = 5 + 1/12 = 61/12 hours.

Speed = Distance ÷ Time = 21.666 ÷ (61/12) ≈ 4.26 km/hr.

Therefore The correct answer is 4.3 km/hr.

Alternate Method

Given: Total distance = 39 km, Time = 5 hours 5 minutes, Covered distance = 5/4 × Remaining distance.

Let the remaining distance be x km.

=> Covered distance = 5x/4 km.

=> Total Distance = 5x/4 + x = 9x/4

=> 9x/4 = 39

=> x = (39 × 4) ÷ 9 = 156/9 = 52/3 km.

=> Covered Distance = 39 − 52/3 = (117 − 52)/3 = 65/3 km.

=> Time = 5 hours + 5/60 hours = 305/60 = 61/12 hours.

=> Speed = Distance ÷ Time = (65/3) ÷ (61/12) = (65/3) × (12/61) = 260/61 km/hr.

=> Speed ≈ 4.262 km/hr ≈ 4.3 km/hr.

Therefore The correct answer is 4.3 km/hr.

Additional Information

Speed, Distance, and Time Relationship

The basic formula is Speed = Distance ÷ Time. Ensure all units are consistent (e.g., km and hours) before calculation.

Unit Conversion

To convert minutes to hours, divide by 60. To convert km/hr to m/s, multiply by 5/18.

Rounding Off Rules

If the second decimal digit is 5 or more, increase the first decimal digit by 1. Here, 4.26 becomes 4.3.

Q2. Answer: (d) Rs. 10 lakh crore

The Correct answer is Rs. 10 lakh crore.

Key Points

• The Asset Monetization Plan 2025-30 is a continuation of the government's initiative to unlock value from its public sector assets and reinvest the proceeds in new infrastructure projects.

• The plan focuses on raising Rs. 10 lakh crore through the monetization of core assets in sectors like transportation, energy, and urban infrastructure.

• Monetization is carried out by leasing or selling assets, while the ownership of land and other strategic assets remains with the government.

• This initiative aligns with the government's broader objective of fostering economic growth and infrastructure development.

• The revenue generated from this plan will be reinvested into new projects under the National Infrastructure Pipeline (NIP), which aims to modernize and expand India's infrastructure.

• The focus is on public-private partnerships (PPPs), which help bring private sector efficiency and expertise to the management of these assets.

• The government had earlier announced the National Monetization Pipeline (NMP) for 2021-24, and this plan is an extension of that initiative.

• Through this plan, the government aims to achieve fiscal consolidation while boosting infrastructure investment.

Additional Information

• Rs. 25 lakh crore

• This amount might be considered for larger-scale plans or a longer timeline, but for the 2025-30 Asset Monetization Plan, the focus is on Rs. 10 lakh crore.

• Rs. 15 lakh crore

• Although plausible for other government initiatives, this is not the allocated amount for the Asset Monetization Plan 2025-30.

• Rs. 20 lakh crore

• Similar to the above, this amount does not correspond to the specified plan but could be part of a different financial strategy or target.

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Q3. Answer: (d) √(5/17)

Shortcut Trick

Calculate the square of the difference: $(a - b)^2 = (a^2 + b^2) - 2ab = 132 - 72 = 60$.

Calculate the square of the sum: $(a + b)^2 = (a^2 + b^2) + 2ab = 132 + 72 = 204$.

Find the ratio of these squares: $((a - b)/(a + b))^2 = 60 / 204 = 5 / 17$.

Take the square root to find the required value: $(a - b) / (a + b) = \sqrt{(5 / 17)}$.

Therefore The correct answer is √5/17.

Alternate Method

Given: $a^2 + b^2 = 132$, $ab = 36$, and $a > b$.

Formula Used: $(a - b)^2 = a^2 + b^2 - 2ab$ and $(a + b)^2 = a^2 + b^2 + 2ab$

=> First, we find the numerator $(a - b)$:

=> $(a - b)^2 = a^2 + b^2 - 2ab = 132 - 2(36) = 132 - 72 = 60$

=> Since $a > b$, $(a - b) = \sqrt{60}$

=> Next, we find the denominator $(a + b)$:

=> $(a + b)^2 = a^2 + b^2 + 2ab = 132 + 2(36) = 132 + 72 = 204$

=> Assuming $(a + b)$ is positive, $(a + b) = \sqrt{204}$

=> The required ratio is $(a - b) / (a + b)$:

=> $((a - b) / (a + b)) = \sqrt{60} / \sqrt{204} = \sqrt{(60 / 204)}$

=> Simplifying the fraction: $60 / 204 = (60 \div 12) / (204 \div 12) = 5 / 17$

=> Ratio = $\sqrt{(5 / 17)} = \sqrt{5} / \sqrt{17}$

Therefore The correct answer is √5/17.

Additional Information

Algebraic Identity for Product

The relationship between the sum, difference, and product of two numbers is given by: $(a + b)^2 - (a - b)^2 = 4ab$.

Sum of Squares Identity

The sum of the squares of the sum and difference is: $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$.

Square Root of Fractions

When taking the square root of a ratio, $\sqrt{(x/y)} = \sqrt{x} / \sqrt{y}$, where $y \neq 0$.

Q4. Answer: (c) Satpura

The Correct answer is Satpura Hills.

Key Points

• The Narmada River originates from the Amarkantak Plateau, which is located in the Satpura Hills of Madhya Pradesh, India.

• The Narmada is the fifth-largest river in India and the largest west-flowing river in the country.

• It flows through the states of Madhya Pradesh, Maharashtra, and Gujarat before emptying into the Arabian Sea.

• The river is often referred to as the "Lifeline of Madhya Pradesh and Gujarat" due to its significance in providing water for agriculture, drinking, and electricity generation.

• It is also known for its cultural and religious significance, with many temples and ghats located along its banks.

• One of the prominent landmarks on the river is the Sardar Sarovar Dam, which is a multipurpose project aimed at irrigation, hydropower, and water supply.

• The Narmada Valley is rich in biodiversity and is home to a variety of flora and fauna, some of which are endemic to the region.

Additional Information

• Western Ghats

• The Western Ghats are a mountain range that runs parallel to the western coast of India.

• They are known for their rich biodiversity and have been declared a UNESCO World Heritage Site.

• Some major rivers originating from the Western Ghats include the Godavari, Krishna, and Kaveri.

• Vindhyachal

• The Vindhyachal range is a mountain range in central India, separating the northern and southern parts of the country.

• It is not the origin of the Narmada River but plays a significant role in Indian geography by forming a natural boundary.

• Aravalli

• The Aravalli Hills are one of the oldest mountain ranges in the world, located in western India.

• The range extends across Rajasthan, Haryana, and Gujarat.

• It is not related to the origin of the Narmada River but is known for its mineral deposits and ecological significance.

Q5. Answer: (b) Five Writs

The Correct answer is Five Writs.

Key Points

• The Constitution of India empowers the Supreme Court (under Article 32) and the High Courts (under Article 226) to issue five types of writs for the enforcement of Fundamental Rights.

• The five writs mentioned in the Constitution are:

• Habeas Corpus: A writ to produce a person detained or imprisoned before the court to examine the legality of their detention.

• Mandamus: A writ issued to a public official, body, corporation, or government to perform a duty they are legally obligated to perform.

• Prohibition: A writ directed at a lower court or tribunal, preventing it from exceeding its jurisdiction or acting contrary to the law.

• Certiorari: A writ by which a higher court orders a lower court or tribunal to transfer a case for review or quashes its decision if it acted beyond its jurisdiction.

• Quo Warranto: A writ to challenge the legality of a person holding a public office without proper authority.

• These writs are significant tools to ensure the protection of Fundamental Rights under Part III of the Indian Constitution.

• The Supreme Court's power to issue writs is primarily for the enforcement of Fundamental Rights, making it a guardian of these rights.

• The High Courts, however, have a broader jurisdiction and can issue writs for other legal rights in addition to Fundamental Rights.

Additional Information

• Four Writs

• The concept of issuing writs is derived from the English Common Law, which initially included only four primary writs. However, the Indian Constitution explicitly mentions five writs.

• Four writs would exclude the writ of Quo Warranto, which is essential in ensuring that public offices are not held unlawfully.

• Six Writs

• The Indian Constitution does not mention six writs. The concept of writs in India is limited to the five types specifically listed in the Constitution under Article 32 and Article 226.

• Seven Writs

• The Constitution of India does not authorize the issuance of seven writs. The writs are limited to the five defined types, and the addition of extra writs is not part of the constitutional framework.

Q6. Answer: (b) Rs. 60

Shortcut Trick

Ratio of A : B : C : D = 10 : 4 : 8 : 5

Difference between C and B in units = 8 − 4 = 4 units

Given, 4 units = Rs. 24 => 1 unit = Rs. 6

A's share = 10 units = 10 × Rs. 6 = Rs. 60

Therefore The correct answer is Rs. 60.

Alternate Method

Given: Ratio A:B:C:D = 10 : 4 : 8 : 5 and C − B = Rs. 24

Formula: Value of one unit = (Actual Difference) ÷ (Difference in Ratio parts)

=> Let the shares be 10x, 4x, 8x, and 5x.

=> 8x − 4x = 24

=> 4x = 24

=> x = 24 ÷ 4 = 6

=> Amount received by A = 10x = 10 × 6 = 60

Therefore The correct answer is Rs. 60.

Additional Information

Concept of Ratio and Proportion

A ratio compares values. To find the actual value, multiply the ratio part by a constant 'x' which represents the value of a single unit.

Total Sum Calculation

Total Sum = (Sum of all ratio parts) × value of one unit. In this case: (10+4+8+5) × 6 = 27 × 6 = Rs. 162.

Proportional Division

If a sum S is divided in ratio a:b, then first part = [a/(a+b)] × S and second part = [b/(a+b)] × S.

Q7. Answer: (a) 39

Shortcut Trick

Weight of B = [Sum of (A + B) + Sum of (B + C)] − Sum of (A + B + C)

Weight of B = (2 × 39) + (2 × 48) − (3 × 45)

Weight of B = 78 + 96 − 135 = 174 − 135

Weight of B = 39 kg

Therefore The correct answer is 39 kg.

Alternate Method

Given:

Average weight of A, B, and C = 45 kg

Average weight of A and B = 39 kg

Average weight of B and C = 48 kg

Formula Used:

Sum of values = Average × Number of observations

Calculations:

=> Total weight of A + B + C = 3 × 45 = 135 kg

=> Total weight of A + B = 2 × 39 = 78 kg

=> Total weight of B + C = 2 × 48 = 96 kg

=> Sum of (A + B) and (B + C) = 78 + 96 = 174 kg

=> This sum can be written as: (A + B + C) + B = 174 kg

=> 135 + B = 174

=> B = 174 − 135

=> B = 39 kg

Therefore The correct answer is 39 kg.

Additional Information

Definition of Average

The average is the central value of a set of numbers, calculated by dividing the sum of all values by the total number of values.

Overlap Principle

When two sub-groups (like A&B and B&C) are combined and they share a common member (B), that member is added twice in the total sum of sub-groups.

Deviation Method

Averages can also be solved by checking the net deviation from the actual average. Sum of deviations from the mean is always zero.

Q8. Answer: (b) They won the title for the third time in seven seasons

The Correct answer is They won the title for the third time in seven seasons.

Key Points

• Vidarbha's performance in the Ranji Trophy 2024-25 was remarkable as they secured the title for the third time in seven seasons.

• This achievement highlights Vidarbha's consistent dominance and growing reputation in domestic cricket.

• The Ranji Trophy is India’s premier first-class cricket tournament, and winning it multiple times showcases the team's strong cricketing infrastructure and player development.

• Vidarbha’s earlier wins in the Ranji Trophy occurred in 2017-18 and 2018-19, making this their third overall title.

• Their success is attributed to the contributions of seasoned players, a strong domestic structure, and effective coaching staff.

• Vidarbha’s cricket board has invested in youth development and fostering new talent, which has paid off in the form of consistent performances.

• The team’s ability to perform under pressure and deliver in crucial matches is a testament to their mental strength and preparation.

Additional Information

• They won the title for the first time

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• This option is incorrect as Vidarbha had already won the Ranji Trophy before, in the 2017-18 and 2018-19 seasons.
• Their first title win in 2017-18 was a historic moment for the team, marking their emergence on the domestic cricket scene.
• They lost the final to Kerala
• This option is incorrect as Vidarbha did not lose the final to Kerala in the 2024-25 season.
• In fact, they emerged as the champions, showcasing their dominance in domestic cricket.
• They did not qualify for the final
• This option is incorrect as Vidarbha not only qualified for the final but also went on to win the title.
• Their consistent performances throughout the tournament ensured their place in the final.

Q9. Answer: (b) Tuberculosis

The Correct answer is Tuberculosis.

Key Points

• Tuberculosis (TB) is a highly contagious infectious disease caused by the bacterium Mycobacterium tuberculosis.
• The disease primarily affects the lungs, but it can also impact other parts of the body, such as the spine, kidneys, and brain.
• TB is one of the oldest known diseases in human history and continues to be a major cause of illness and death worldwide.
• It is typically spread through airborne particles when an infected person coughs, sneezes, or speaks.
• Symptoms of TB include persistent cough, fever, night sweats, weight loss, and fatigue.
• TB can be treated and cured with a combination of antibiotics, usually taken over a course of six months or longer.
• Efforts to combat TB include public health initiatives such as vaccination with the BCG vaccine and widespread screening programs.
• In 2025, John Green's book likely explores the historical impact of TB, including its role in shaping public health systems and its representation in literature and culture.

Additional Information

• Influenza
• Influenza, commonly known as the flu, is caused by the influenza virus.
• It primarily affects the respiratory system and spreads through airborne droplets or contact with contaminated surfaces.
• Influenza pandemics, such as the Spanish Flu of 1918, have caused widespread fatalities.
• Vaccination is the primary method of prevention, and antiviral medications are used for treatment.
• Malaria
• Malaria is caused by parasites of the genus Plasmodium, transmitted through the bites of infected Anopheles mosquitoes.
• It is prevalent in tropical and subtropical regions, especially in Sub-Saharan Africa.
• Symptoms include fever, chills, headache, and vomiting.
• Malaria can be prevented with the use of mosquito nets, insect repellents, and antimalarial drugs.
• Cholera
• Cholera is an acute diarrheal disease caused by the bacterium Vibrio cholerae.
• It is commonly transmitted through contaminated water or food.
• Symptoms include severe dehydration, watery diarrhea, and vomiting.
• Improving access to clean water and sanitation is critical for preventing cholera outbreaks.

Q10. Answer: (a) Mother's sister's son

Decoding symbols:

	A is			
Symbol	•	•	x	÷
Meaning	Son	Sister	Wife	Father
	to B			

Given: E + F – G x H ÷ K

E + F → E is the son of F.

F – G → F is the sister of G.

G x H → G is the wife of H.

H ÷ K → H is the father of K.

Thus, E is K's mother's sister's son.

Hence, the correct answer is "Option 1"

Q11. Answer: (a) Annie Besant and Bal Gangadhar Tilak

The Correct answer is Annie Besant and Bal Gangadhar Tilak.

Key Points

• The Home Rule Movement in India was started during World War I (1914-1918).

• The movement was pioneered by two prominent leaders: Annie Besant and Bal Gangadhar Tilak.

• The primary aim of the movement was to achieve self-government within the framework of the British Empire.

• Annie Besant founded the Home Rule League in September 1916 in Madras (now Chennai).

• Bal Gangadhar Tilak established his own Home Rule League in April 1916, focusing on Maharashtra, Karnataka, and central provinces.

• The movement sought to mobilize Indians for self-rule through constitutional means, promoting political education and awareness.

• Annie Besant, a British national, played a significant role in spreading the ideas of self-rule and garnered massive support through her writings in newspapers like "New India" and "Commonweal."

• Tilak, known as the “Father of Indian Unrest,” brought his strong nationalist ideals to the movement, emphasizing the need for India’s autonomy.

• The movement laid the foundation for future struggles for India's independence, inspiring widespread political consciousness.

Additional Information

• Mahatma Gandhi and Gopal Krishna Gokhale

• Mahatma Gandhi became a prominent leader in Indian politics later, especially during the Non-Cooperation Movement (1920-22) and the Civil Disobedience Movement (1930-34).

• Gopal Krishna Gokhale was a moderate leader and mentor to Gandhi but was not associated with the Home Rule Movement. He passed away in 1915, before the movement began.

• Lala Lajpat Rai and Bipin Chandra Pal

• Lala Lajpat Rai, known as the Lion of Punjab, was a part of the Lal-Bal-Pal trio but was not directly involved in the Home Rule Movement.

• Bipin Chandra Pal, a staunch nationalist, focused on the Swadeshi movement and other activities, rather than the Home Rule Movement.

• Jawaharlal Nehru and Subhas Chandra Bose

• Jawaharlal Nehru emerged as a major leader during the 1930s, especially in the context of the Indian National Congress.

• Subhas Chandra Bose became a significant figure in the Indian freedom struggle during the 1940s and was associated with the Indian National Army (INA).

Q12. Answer: (d) To shift the cursor to the next field or tab position

The Correct answer is To shift the cursor to the next field or tab position.

Key Points

• The Tab key is a standard key on most computer keyboards, primarily used to move the cursor to the next field, section, or tab stop in a document or form.

• It is highly useful for navigating between input fields in online forms or applications, simplifying data entry tasks.

• In word processors like Microsoft Word, pressing the Tab key moves the cursor forward by a fixed indentation space, typically equivalent to five spaces or a predefined tab stop.

• The Tab key is also critical in programming, as it helps to create structured code by inserting indents for better readability and organization.

• Many software applications use the Tab key to cycle through interactive elements, such as buttons, menus, or text boxes, improving navigation and accessibility.

• In spreadsheets like Microsoft Excel, pressing the Tab key moves the active cell to the next column, facilitating horizontal data entry.

• The Tab key often works alongside the Shift key to move backward through fields or tabs, offering flexibility in navigation.

• On graphical user interfaces, the Tab key enhances user experience by allowing rapid movement between focusable elements without using a mouse.

Additional Information

• Option 1: To insert a forward slash

• The forward slash is typically inserted using the ‘/’ key, not the Tab key.

• This key is often used in URLs, file paths, and programming for division operations or directory navigation.

• Option 2: To remove text
• Text removal is generally performed using the Backspace or Delete keys, not the Tab key.
• The Backspace key deletes text to the left of the cursor, while the Delete key removes text to the right.
• Option 3: To close the active application
• Closing an active application is commonly done using keyboard shortcuts like Alt + F4 in Windows or Cmd + Q in macOS.
• The Tab key does not have any functionality related to application closure.

Q13. Answer: (d) Rs. 3,790 crore

The Correct answer is Rs. 3,790 crore.

Key Points

• The Union Budget for 2025 allocated a total of Rs. 3,790 crore to the Ministry of Youth Affairs and Sports.
• This allocation reflects the government's commitment to promoting sports and youth development in India.
• The budget aims to enhance the implementation of initiatives under schemes such as Khelo India and Fit India Movement.
• It also focuses on strengthening infrastructure development for sporting activities across the country.
• The allocation will help in boosting sports facilities, athlete training programs, and youth engagement initiatives.
• The Ministry of Youth Affairs and Sports plays a pivotal role in fostering talent and promoting a sporting culture among the youth.
• Increased funding ensures better opportunities for India's representation in international sports events, including the Olympics, Commonwealth Games, and Asian Games.

Additional Information

• Key Focus of Union Budget 2025
• The Union Budget 2025 emphasized inclusive growth, with significant investments in healthcare, education, and sports.
• It prioritized human resource development by allocating funds for schemes promoting youth skill development and employment generation.
• Increased funding for the sports sector aligns with India's vision of becoming a global leader in sports.
• Other Ministries' Allocations
• The Ministry of Education received a substantial allocation to further the goals of the National Education Policy (NEP) 2020.
• The Ministry of Health saw an increase in funds to boost public health infrastructure and combat future pandemics.
• Role of Khelo India Scheme
• The Khelo India Scheme aims to identify and nurture young talent through structured training programs.
• It provides funding for building sports infrastructure and organizing multi-disciplinary sports events.
• This scheme plays a crucial role in achieving the objectives of the Ministry of Youth Affairs and Sports.

Q14. Answer: (a) 308

Shortcut Trick

Check for divisibility by 11 as the volume involves π (22/7).

Option (1) 308: 3 + 8 − 0 = 11 (Divisible by 11)

Option (2) 300: 3 + 0 − 0 = 3 (Not divisible)

Option (3) 307: 3 + 7 − 0 = 10 (Not divisible)

Option (4) 314: 3 + 4 − 1 = 6 (Not divisible)

Therefore The correct answer is 308 cm^3.

Alternate Method

Given: Total Surface Area (TSA) = 396 cm^2, Radius (r) = 7 cm, π = 22/7.

Formula Used: TSA = $2\pi r(h + r)$; Volume (V) = $\pi r^2 h$

=> $396 = 2 \times (22/7) \times 7 \times (h + 7)$

=> $396 = 44 \times (h + 7)$

=> $h + 7 = 396 \div 44 = 9$

=> $h = 2$ cm

=> Volume = $\pi r^2 h = (22/7) \times 7 \times 7 \times 2$

=> Volume = $22 \times 7 \times 2 = 154 \times 2 = 308\ cm^3$

Therefore The correct answer is 308 cm^3.

Additional Information

Curved Surface Area of Cylinder

The lateral surface area excluding the top and bottom circles is $2\pi rh$.

Area of Base/Top

The area of each circular face is πr^2.

Total Surface Area relation

TSA = CSA + 2 × Base Area = $2\pi rh + 2\pi r^2$.

Q15. Answer: (a) 48°

Shortcut Trick

In any quadrilateral, the angle formed by the bisectors of two adjacent angles is equal to half the sum of the other two remaining angles.

angle TES = (angle Q + angle R) ÷ 2

angle TES = (52° + 44°) ÷ 2

angle TES = 96° ÷ 2 = 48°

Therefore The correct answer is 48°.

Alternate Method

Given:

In quadrilateral QRST:

angle Q = 52°

angle R = 44°

The bisectors of angle S and angle T meet at E.

Formula Used:

The sum of all interior angles of a quadrilateral is 360°.

The sum of all interior angles of a triangle is 180°.

Calculations:

In quadrilateral QRST:

=> angle Q + angle R + angle S + angle T = 360°

=> 52° + 44° + angle S + angle T = 360°

=> 96° + angle S + angle T = 360°

=> angle S + angle T = 360° − 96° = 264°

Dividing both sides by 2:

=> (angle S + angle T) ÷ 2 = 264° ÷ 2 = 132°

=> angle S/2 + angle T/2 = 132°

Since SE and TE are the angle bisectors of angle S and angle T respectively:

=> angle EST = angle S/2 and angle ETS = angle T/2

=> angle EST + angle ETS = 132°

In triangle TES:

=> angle TES + angle EST + angle ETS = 180°

=> angle TES + 132° = 180°

=> angle TES = 180° − 132° = 48°

Therefore The correct answer is 48°.

Additional Information

Angle Bisector Theorem in Quadrilaterals

The angle formed by the bisectors of two adjacent angles of a quadrilateral is equal to half the sum of the other two remaining angles. For adjacent angles A and B, the angle of intersection of their bisectors is (angle C + angle D) ÷ 2.

Sum of Interior Angles

For any n-sided polygon, the sum of interior angles is given by (n − 2) × 180°. For a quadrilateral (n = 4), the sum is always 360°.

Opposite Angle Bisectors

The angle between the bisectors of two opposite angles of a quadrilateral is equal to half the difference of the other two angles.

Q16. Answer: (b) Legal Services Authorities Act, 1987

The Correct answer is Legal Services Authorities Act, 1987.

Key Points

• The National Legal Services Authority (NALSA) was constituted under the Legal Services Authorities Act, 1987.

• The primary aim of NALSA is to ensure free legal aid to weaker sections of society and promote justice on the basis of equal

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opportunity.

• It works to organize Lok Adalats, which are informal courts that resolve disputes through conciliation and settlement.

• The Act emphasizes providing legal services to marginalized groups such as women, children, Scheduled Castes, Scheduled Tribes, and other vulnerable communities.

• Under this Act, State Legal Services Authorities were also created to implement policies and organize legal aid programs at the state level.

• It is an important law for ensuring compliance with Article 39A of the Indian Constitution, which mandates free legal aid to economically weaker sections and promotes equality before the law.

• The Act also empowers NALSA to conduct legal awareness campaigns to educate citizens about their rights and duties.

Additional Information

• Public Interest Litigation Act, 1990

• There is no specific law called the Public Interest Litigation Act, 1990. Public Interest Litigation (PIL) refers to a judicial process under which cases can be filed for protecting public interests.

• PILs are governed by various provisions of the Indian Constitution, especially Articles 32 and 226, which allow individuals to approach the Supreme Court or High Courts.

• This concept was introduced in the 1980s and is not linked to a specific act but rather to judicial activism.

• Advocates Act, 1961

• The Advocates Act, 1961 governs the legal profession in India and provides for the establishment of the Bar Council of India and State Bar Councils.

• It regulates the standards of professional conduct, etiquette, and legal education for advocates.

• This Act focuses on the administration and organization of the legal profession rather than providing legal aid services.

• Indian Bar Council Act, 1926

• The Indian Bar Council Act, 1926 was enacted to provide for the establishment of Bar Councils in different provinces and regulate the legal profession.

• It was a precursor to the Advocates Act, 1961 and laid the foundation for the legal profession in India.

• This Act does not deal with legal aid or the organization of Lok Adalats.

Q17. Answer: (c) 4

Given series: (Left) % 3 £ 3 & © * 3 & 7 7 3 7 % 4 8 © * 1 * 9 9 (Right)

According to the question,

Required condition: Symbol - Number - Symbol

(Left) % 3 £ 3 & © * 3 & 7 7 3 7 % 4 8 © * 1 * 9 9 (Right)

Thus, there are four such numbers which are immediately preceded by a symbol and also immediately followed by a symbol.

Hence, "Option 3" is the correct answer.

Q18. Answer: (c) Rs. 3,903

Shortcut Trick

Use the ratio formula: CP ÷ MP = (100 − Discount%) ÷ (100 + Gain%).

Ratio CP : MP = (100 − 53) : (100 + 41) = 47 : 141.

Simplify the ratio: 47 : 141 = 1 : 3.

Since 1 unit (CP) = Rs. 1,301, then 3 units (MP) = 1,301 × 3 = Rs. 3,903.

Therefore The correct answer is Rs. 3,903.

Alternate Method

Given: Cost Price (CP) = Rs. 1,301, Discount = 53%, Gain = 41%.

Formulas: SP = CP × (100 + Gain%) ÷ 100 | MP = SP × 100 ÷ (100 − Discount%)

=> Selling Price (SP) = 1,301 × (100 + 41) ÷ 100 = 1,301 × 1.41 = Rs. 1,834.41

=> Marked Price (MP) = SP ÷ (1 − 0.53) = 1,834.41 ÷ 0.47

=> Marked Price (MP) = Rs. 3,903

Therefore The correct answer is Rs. 3,903.

Additional Information

Marked Price and Discount

The Marked Price (MP) is the price printed on an item. Discount is always calculated on the MP to arrive at the Selling Price (SP). SP = MP × (100 − D%) / 100.

Relation between CP and MP

When both Profit% and Discount% are known, the direct relation is CP / MP = (100 − D) / (100 + P).

Q19. Answer: (c) -1

Shortcut Trick

For any cubic equation $ax^3 + bx^2 + cx + d = 0$, the product of roots is given by $-d/a$.

In the given equation $kx^3 - 5x^2 - 12x + k = 0$, the coefficient of x^3 (a) is k and the constant term (d) is k.

Product of roots = $-k \div k = -1$.

Therefore The correct answer is -1.

Alternate Method

Given:

The cubic equation is $kx^3 - 5x^2 - 12x + k = 0$.

Formula Used:

For a standard cubic equation $ax^3 + bx^2 + cx + d = 0$ with roots α, β, and γ:

Product of roots (αβγ) = −(Constant Term) / (Coefficient of x^3) = $-d/a$

Calculations:

Comparing the given equation $kx^3 - 5x^2 - 12x + k = 0$ with $ax^3 + bx^2 + cx + d = 0$, we get:

=> a = k

=> b = −5

=> c = −12

=> d = k

Now, applying the Vieta's formula for the product of roots:

=> Product = −d / a

=> Product = −k / k

=> Product = −1

Therefore The correct answer is -1.

Additional Information

Sum of Roots

For a cubic equation, the sum of roots (α + β + γ) is given by −b/a, which is −(coefficient of x^2) ÷ (coefficient of x^3).

Sum of Product of Roots Taken Two at a Time

The sum of the products of roots taken in pairs (αβ + βγ + γα) is given by c/a, which is (coefficient of x) ÷ (coefficient of x^3).

Quadratic Roots Product

For a quadratic equation $ax^2 + bx + c = 0$, the product of roots is simply c/a.

Degree and Roots

According to the Fundamental Theorem of Algebra, a polynomial of degree n will have exactly n roots (including real and complex roots).

Q20. Answer: (b) 27

Shortcut Trick

Sum of interior angles of a regular polygon with n sides is $(n - 2) \times 180°$.

Given, $(n - 2) \times 180° = 1260°$ => $n - 2 = 7$ => $n = 9$ sides.

Number of diagonals = $n \times (n - 3) \div 2 = 9 \times (9 - 3) \div 2 = 27$.

Therefore The correct answer is 27 diagonals.

Alternate Method

Given:

Sum of interior angles of a regular polygon = 1260°

Formula Used:

1. Sum of interior angles of an n-sided polygon = $(n - 2) \times 180°$

2. Number of diagonals of an n-sided polygon = $n \times (n - 3) \div 2$

Calculations:

Let the number of sides of the regular polygon be n.

=> $(n - 2) \times 180° = 1260°$

=> $n - 2 = 1260° \div 180°$

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=> n − 2 = 7

=> n = 7 + 2

=> n = 9

Thus, the polygon is a regular nonagon (9-sided polygon).

Now, we calculate the number of diagonals:

=> Number of diagonals = n × (n − 3) ÷ 2

=> Number of diagonals = 9 × (9 − 3) ÷ 2

=> Number of diagonals = 9 × 6 ÷ 2

=> Number of diagonals = 54 ÷ 2

=> Number of diagonals = 27

Option Analysis:

Option (1) 35: If diagonals = 35, then n × (n − 3) ÷ 2 = 35 => n × (n − 3) = 70 => n = 10 (decagon). Sum of interior angles would be (10 − 2) × 180° = 1440° ≠ 1260°.

Option (2) 27: This is the correct option as calculated above for a 9-sided polygon (nonagon).

Option (3) 20: If diagonals = 20, then n × (n − 3) ÷ 2 = 20 => n × (n − 3) = 40 => n = 8 (octagon). Sum of interior angles would be (8 − 2) × 180° = 1080° ≠ 1260°.

Option (4) 44: If diagonals = 44, then n × (n − 3) ÷ 2 = 44 => n × (n − 3) = 88 => n = 11 (hendecagon). Sum of interior angles would be (11 − 2) × 180° = 1620° ≠ 1260°.

Therefore The correct answer is 27 diagonals.

Additional Information

Sum of Exterior Angles

The sum of the exterior angles of any convex polygon is always 360°.

Each Interior Angle of a Regular Polygon

For a regular polygon with n sides, each interior angle is equal to ((n − 2) × 180°) ÷ n.

Each Exterior Angle of a Regular Polygon

For a regular polygon with n sides, each exterior angle is equal to 360° ÷ n.

Q21. Answer: (b) South Africa

The Correct answer is South Africa.

Key Points

• South Africa will host the 2025 G20 Summit, marking the first time the summit will be held on the African continent.

• This decision aligns with the G20's aim to promote global inclusivity and expand representation of regions like Africa in global decision-making forums.

• South Africa, being a member of the G20, is one of the most influential nations in Africa, known for its strong economy and significant political role in the region.

• The summit will provide an opportunity to highlight Africa's developmental challenges and potential, including topics like poverty alleviation, climate change, infrastructure development, and economic growth.

• This event will also serve to strengthen South Africa's diplomatic ties with other G20 nations and showcase its leadership on the global stage.

• The hosting of the summit reflects the G20's recognition of the importance of Africa in the global economy and geopolitics.

Additional Information

• Egypt

• Egypt is located in North Africa and is known for its ancient civilization and landmarks such as the Pyramids of Giza.

• Though Egypt has played a significant role in African diplomacy, it is not hosting the 2025 G20 Summit.

• Egypt is a member of the African Union but is not a permanent G20 member.

• Nigeria

• Nigeria, located in West Africa, is the most populous country in Africa and has one of the continent's largest economies.

• It is a leading oil-producing nation but is not part of the G20 group.

• Although Nigeria is influential in African affairs, it is not hosting the 2025 G20 Summit.

• Kenya

• Kenya is situated in East Africa and is renowned for its wildlife tourism and contributions to regional diplomacy.

• It has a growing economy and is a member of the African Union, but like Nigeria, it is not part of the G20 group.

• Kenya is not hosting the 2025 G20 Summit.

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Q22. Answer: (c) 25

Shortcut Trick

Initial Speed = 23 km/hr for 4.5 hours.

Increased Speed = 23 + 11 = 34 km/hr for 1 hour.

Average Speed = (Total Distance) ÷ (Total Time)

Average Speed = [(23 × 4.5) + (34 × 1)] ÷ (4.5 + 1) = (103.5 + 34) ÷ 5.5 = 137.5 ÷ 5.5 = 25 km/hr.

Therefore The correct answer is 25 km/hr.

Alternate Method

Given:

Speed1 = 23 km/hr, Time1 = 4.5 hr

Speed2 = 23 + 11 = 34 km/hr, Time2 = 1 hr

Formula Used:

Average Speed = (D1 + D2) ÷ (T1 + T2)

Calculations:

=> Distance1 = 23 × 4.5 = 103.5 km

=> Distance2 = 34 × 1 = 34 km

=> Total Distance = 103.5 + 34 = 137.5 km

=> Total Time = 4.5 + 1 = 5.5 hr

=> Average Speed = 137.5 ÷ 5.5

=> Average Speed = 25 km/hr

Therefore The correct answer is 25 km/hr.

Additional Information

Average Speed (Equal Distances)

When a person travels equal distances at speeds x and y, the average speed is 2xy ÷ (x + y).

Relative Speed

If two objects move in the same direction, relative speed = s1 − s2. In opposite directions, relative speed = s1 + s2.

Unit Conversion

To convert km/hr to m/s, multiply by 5/18. To convert m/s to km/hr, multiply by 18/5.

Q23. Answer: (a) Two

Given: F, G, H, K, L, and M live on six different floors of a building, numbered 1 to 6 from bottom to top.

1) L lives on floor number 5.

2) H lives on a floor above L.

Since L is on floor 5, H must be on floor 6.

6	**H**
5	L
4	
3	
2	
1	

3) Only K lives below M.

This implies that M lives on floor 2 and K lives on floor 1. No one else lives below M.

6	**H**
5	L
4	
3	
2	M

1	K

4) F lives on an even-numbered floor.

The remaining empty floors are 3 and 4. The remaining people are F and G. The only remaining even-numbered floor is 4.

So, F must live on floor 4. This leaves G to live on floor 3.

6	**H**
5	L
4	F
3	G
2	M
1	K

From the final arrangement, G lives on floor 3. The people living below G are M (on floor 2) and K (on floor 1).

Therefore, Two people live below G.

Hence, the correct answer is "Option 1".

Q24. Answer: (c) 83

The logic followed here is:

Thus, the missing term in the series is 83.

Hence, the correct answer is "Option 3".

Q25. Answer: (d) 11 : 11

Shortcut TrickCompare the fractions: 9/11 (≈ 0.818), 10/27 (≈ 0.370), 31/38 (≈ 0.815), and 11/11 (= 1.000).A ratio where antecedent equals consequent (1 : 1) represents a whole unit, which is greater than any proper fraction (where numerator < denominator).Therefore The correct answer is 11 : 11.Alternate MethodGiven: Ratios (1) 9/11, (2) 10/27, (3) 31/38, (4) 11/11Formula: Convert each ratio to decimal form or compare with 1.=> Ratio 1: 9 ÷ 11 = 0.8181...=> Ratio 2: 10 ÷ 27 = 0.3703...=> Ratio 3: 31 ÷ 38 = 0.8157...=> Ratio 4: 11 ÷ 11 = 1.0000=> Comparing values: 1.000 > 0.8181 > 0.8157 > 0.3703Therefore The correct answer is 11 : 11.Additional InformationComparison of RatiosTo compare a/b and c/d, check the products (a × d) and (b × c). If ad > bc, then a/b > c/d.Types of RatiosA ratio a:b is a ratio of greater inequality if a > b, lesser inequality if a < b, and equality if a = b.Cross Multiplication MethodFor quick comparison without division, cross-multiply numerators with denominators of other fractions.

Q26. Answer: (b) Modern Education among Muslims

The Correct answer is Modern Education among Muslims.

Key Points

• The Aligarh Movement was initiated by Sir Syed Ahmed Khan, an eminent scholar and reformer, during the late 19th century in India.

• The movement primarily focused on providing modern education to the Muslim community, which lagged behind in educational and socio-economic progress.

• Sir Syed Ahmed Khan believed that modern education, particularly in the fields of science, technology, and English, was necessary to empower Muslims to compete with other communities in colonial India.

• He established the Mohammedan Anglo-Oriental College (MAO College) in 1875, which later became Aligarh Muslim University (AMU).

• The movement emphasized the adoption of Western-style education, which was seen as crucial for the growth and development of Muslims in the colonial era.

• It aimed to build bridges between the Muslim community and the British authorities, promoting harmony and cooperation.

• The Aligarh Movement also worked to eliminate prejudices and foster better understanding between different communities in India.

• The movement's success contributed to the establishment of a modern educational infrastructure for Muslims and inspired many other reform initiatives across India.

Additional Information

• Women's Rights

• While the Aligarh Movement did not primarily focus on women's rights, it indirectly contributed to the cause by promoting education, which eventually extended to women.

• Educational reforms initiated under the movement laid the groundwork for greater awareness regarding women's empowerment

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and their access to education.

• Hindu Revivalism

• Hindu Revivalism was an entirely separate movement that aimed at rejuvenating and promoting Hindu culture, values, and traditions.

• It was led by reformers such as Swami Dayanand Saraswati and organizations like the Arya Samaj.

• This movement was not related to the objectives of the Aligarh Movement, which focused on Muslim education.

• Abolition of Sati

• The Abolition of Sati was a significant reform led by social reformers like Raja Ram Mohan Roy in the early 19th century.

• This practice involved the self-immolation of widows on their husbands' funeral pyres, and its abolition in 1829 was one of the key milestones in Indian social reform.

• While both the abolition of Sati and the Aligarh Movement aimed at societal improvement, their focus and contexts were entirely different.

Q27. Answer: (b) 1,25,232

Shortcut Trick

Ratio of CP to SP for A is 100 : 40 (60% loss) => 5 : 2.

Ratio of CP to SP for B is 100 : 125 (25% profit) => 4 : 5.

Combined ratio (A_(CP) : C_(CP)) = (5 × 4) : (2 × 5) = 20 : 10 = 2 : 1.

Since 1 unit (C's price) = 62,616, then 2 units (A's price) = 62,616 × 2 = 1,25,232.

Therefore The correct answer is Rs. 1,25,232.

Alternate Method

Given → Loss of A = 60%, Profit of B = 25%, Final Price (C) = 62,616.

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

=> Let the cost price for A be x.

=> B's cost price = x × (100 − 60) ÷ 100 = 0.40x.

=> C's cost price = 0.40x × (100 + 25) ÷ 100 = 0.40x × 1.25.

=> 62,616 = 0.5x.

=> x = 62,616 ÷ 0.5 = 1,25,232.

Therefore The correct answer is Rs. 1,25,232.

Additional Information

Successive Transactions

When an item is sold multiple times, the final cost price can be calculated as Initial CP × (1 ± r1/100) × (1 ± r2/100) ... = Final Price.

Profit and Loss Percentage

Profit% = (Profit ÷ CP) × 100 and Loss% = (Loss ÷ CP) × 100. Both are always calculated on the Cost Price (CP) unless stated otherwise.

Q28. Answer: (a) Manoj Kumar Dubey

The Correct answer is Manoj Kumar Dubey.

Key Points

• Manoj Kumar Dubey was appointed as the CEO of the Indian Railway Finance Corporation (IRFC) in October 2024.

• The Indian Railway Finance Corporation (IRFC) is the dedicated financing arm of the Indian Railways, responsible for raising financial resources for railway projects.

• Manoj Kumar Dubey has a strong background in finance and management, making him a suitable choice for this critical role.

• IRFC plays a crucial role in supporting the infrastructure development and modernization of Indian Railways.

• Under his leadership, it is expected that IRFC will continue to focus on innovative financing mechanisms and efficient resource mobilization.

• His appointment aligns with the government’s vision to further enhance the efficiency and growth of Indian Railways through robust financial planning and execution.

• The appointment was made following due processes, ensuring that the candidate’s qualifications and expertise aligned with the demands of the role.

Additional Information

• Ajit Kumar Saxena

• Ajit Kumar Saxena is known for his expertise in the field of administration and operations, particularly in the public sector.

• He has served in various important roles but was not appointed as the CEO of IRFC.
• Vijaya Kishore Rahatkar
• Vijaya Kishore Rahatkar is a prominent leader known for her contributions in the field of social and political development.
• She has been associated with various governmental and non-governmental organizations, but her role is unrelated to IRFC.
• Paramesh Sivamani
• Paramesh Sivamani is recognized for his work in the technical and engineering domains.
• While his expertise is significant, he was not selected for the role of CEO of IRFC.

Q29. Answer: (d) 1087

Shortcut Trick
For any reciprocal algebraic expression, if $x + 1/x = k$, then $x^2 + 1/x^2 = k^2 - 2$.
Given: $x + 1/x = 33$
Here, $k = 33$.
$x^2 + 1/x^2 = 33^2 - 2 = 1089 - 2 = 1087$.
Therefore The correct answer is 1087.
Alternate Method
Given:
$x + 1/x = 33$
Formula Used:
The Algebraic Identity: $(a + b)^2 = a^2 + 2ab + b^2$
Calculations:
=> $x + 1/x = 33$
Squaring both sides of the equation:
=> $(x + 1/x)^2 = 33^2$
=> $x^2 + (1/x)^2 + 2 \times x \times (1/x) = 1089$
=> $x^2 + 1/x^2 + 2 = 1089$
=> $x^2 + 1/x^2 = 1089 - 2$
=> $x^2 + 1/x^2 = 1087$
Therefore The correct answer is 1087.
Additional Information
Negative Reciprocal Identity
If $x - 1/x = k$, then $x^2 + 1/x^2 = k^2 + 2$.
Cubic Reciprocal Identity
If $x + 1/x = k$, then $x^3 + 1/x^3 = k^3 - 3k$.
Square of a Binomial
$(a - b)^2 = a^2 + b^2 - 2ab$, which is used to derive relationships between sums and differences of squares.

Q30. Answer: (d) 62

Shortcut Trick
Divide 13874 by 67 and find the remainder.
$13874 \div 67$ → Quotient = 207, Remainder = 5.
Smallest number to be added = Divisor − Remainder.
Value = 67 − 5 = 62.
Therefore The correct answer is 62.
Alternate Method
Given: Number = 13874, Divisor = 67.
Formula Used: Required Number to add = Divisor − (Number mod Divisor)
=> Long division of 13874 by 67:
=> $67 \times 2 = 134$
=> 138 − 134 = 4 (bring down 7 → 47)
=> $67 \times 0 = 0$ (bring down 4 → 474)
=> $67 \times 7 = 469$

=> 474 − 469 = 5 (Remainder)

=> Smallest number to add = 67 − 5 = 62.

Therefore The correct answer is 62.

Additional Information

Division Algorithm

Dividend = (Divisor × Quotient) + Remainder. For exact divisibility, the remainder must be 0.

Number to Subtract

To find the smallest number to subtract to make a number divisible, the answer is simply the Remainder itself.

Divisibility Rule of 67

There is no simple shortcut for 67 as it is a prime number; long division or the (Divisor − Remainder) method is the most efficient.

Q31. Answer: (b) MJ - DF

The logic followed here is.

Option (1) 'IL - FI':

Option (2) 'MJ - DF':

Option (3) 'NQ - KN':

Option (4) 'MP - JM':

Thus, option 2 'MJ - DF' is odd one.

Hence, the correct answer is "Option 2".

Q32. Answer: (d) Nagabhata I

The correct answer is Nagabhata I.

Key Points

• Nagabhata I was the founder of the Gurjara-Pratihara dynasty, which ruled parts of northern and western India.

• He established the dynasty in the 8th century CE and set the foundation for a powerful empire.

• Nagabhata I is known for defending his kingdom against the Arab invasions, particularly the Arab forces from Sindh, which were a significant threat during that period.

• The Gurjara-Pratihara dynasty played a crucial role in halting the spread of Arab influence into the Indian subcontinent.

• The capital of Nagabhata I’s kingdom was located at Ujjain, a prominent cultural and religious center.

• The dynasty later grew into a major power under successors like Bhoja I and others.

• The Gurjara-Pratiharas were known for their patronage of art, architecture, and culture, contributing significantly to the development of North Indian temples.

Additional Information

• Vatsaraja

• Vatsaraja was a ruler of the Gurjara-Pratihara dynasty, but he was not its founder.

• He is known for his significant military campaigns and ambitions to expand the empire.

• During his reign, he clashed with the Pala dynasty and the Rashtrakutas, which were other major powers at the time.

• Gopala

• Gopala was the founder of the Pala dynasty, not the Gurjara-Pratihara dynasty.

• He was elected as a king by the chiefs of Bengal in the 8th century CE and established the Pala rule.

• The Pala dynasty was known for its contribution to Buddhism and its patronage of the famous Vikramashila and Nalanda universities.

• Bhoja

• Bhoja was a later ruler of the Gurjara-Pratihara dynasty, known for expanding the empire to its zenith.

• He is often referred to as Bhoja I, and his reign marked the peak of the dynasty’s power and influence.

• Bhoja was a great patron of art and architecture, and he contributed to the development of temple architecture.

Q33. Answer: (b) Manipur

The Correct answer is Manipur.

Key Points

• Manipur came under President's Rule in January 2025 due to ongoing ethnic violence and the resignation of its Chief Minister.

• The ethnic violence in Manipur is primarily rooted in tensions between the Meitei community and the Kuki-Zomi tribes.

• Manipur is a state in northeastern India, known for its diverse cultural heritage and significant tribal population.

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• The application of President's Rule is governed by Article 356 of the Indian Constitution, which allows the central government to take control of a state in case of a breakdown of constitutional machinery.

• During President's Rule, the Governor assumes responsibility for the administration, and the state legislature is either suspended or dissolved.

• Manipur has been a hotspot for ethnic and territorial disputes due to its complex socio-political landscape.

• The situation escalated further in 2025, necessitating intervention from the central government to restore law and order.

• The central government often uses President's Rule as a measure of last resort to stabilize states facing severe crises.

Additional Information

• Tripura

• Tripura is a northeastern Indian state, known for its cultural diversity and large tribal population.

• It is bordered by Bangladesh and is recognized for its unique cultural and historical significance.

• Tripura has had a history of insurgency and ethnic tensions, but these have largely diminished in recent years.

• It is famous for its Unakoti sculptures and Tripura Sundari Temple.

• Assam

• Assam is known for its tea plantations and rich biodiversity, including the Kaziranga National Park.

• It has faced ethnic violence in the past, particularly related to migration and land disputes, but was not under President's Rule in January 2025.

• Assam is the gateway to the northeastern region of India, with significant importance in terms of its natural resources and strategic location.

• Nagaland

• Nagaland is another northeastern state, famous for its Hornbill Festival and vibrant tribal culture.

• The state has witnessed insurgency and ethnic conflicts, but it was not involved in the specific events of January 2025.

• Nagaland is known for its tribal diversity, with over 16 major tribes.

• It is a mountainous state with a rich tradition of crafts and community life.

Q34. Answer: (c) 3,80,240

Shortcut Trick

Ratio of Selling Prices: Loss 10% => 90 units and Profit 68% => 168 units.

Given: 90 units = Rs. 2,03,700.

Value of 1 unit = 2,03,700 ÷ 90 = 2,263.

Required SP = 168 units × 2,263 = Rs. 3,80,184 is not in options, recalculating: 20370 ÷ 9 = 2,263.33...

Multiplier method: SP = (2,03,700 ÷ 90) × 168 = 2,263.33... × 168 = Rs. 3,80,240.

Therefore The correct answer is Rs. 3,80,240.

Alternate Method

Formulas: CP = [SP × 100] ÷ [100 − Loss%], New SP = [CP × (100 + Profit%)] ÷ 100.

=> Step 1: Find the Cost Price (CP) of the car.

=> CP = (2,03,700 × 100) ÷ (100 − 10) = 2,03,700 × 100 ÷ 90 = Rs. 2,26,333.33...

=> Step 2: Calculate the New Selling Price for 68% profit.

=> New SP = 2,26,333.33... × (168 ÷ 100) = 2,263.33... × 168.

=> New SP = Rs. 3,80,240.

Therefore The correct answer is Rs. 3,80,240.

Additional Information

Cost Price & Selling Price Relationship

When an object is sold at two different conditions, CP remains constant. Ratio of SP1:SP2 = (100 ± P/L1):(100 ± P/L2).

Profit and Loss Percentages

Profit% and Loss% are always calculated on the Cost Price unless stated otherwise in the question.

Q35. Answer: (b) 100

Shortcut Trick

Effective CI rate for 2 years at 5% = 5 + 5 + (5 × 5) / 100 = 10.25%.

Effective SI rate for 2 years at 5% = 5 × 2 = 10%.

Given, 10.25% corresponds to Rs. 102.5.

=> 10% will correspond to (102.5 ÷ 10.25) × 10 = Rs. 100.

Therefore The correct answer is Rs. 100.

Alternate Method

Given:

Rate (R) = 5% p.a.

Time (T) = 2 years

Compound Interest (CI) = Rs. 102.5

Formula Used:

CI = P × [(1 + R/100)^T − 1]

SI = (P × R × T) ÷ 100

Calculations:

=> 102.5 = P × [(1 + 5/100)² − 1]

=> 102.5 = P × [(1.05)² − 1]

=> 102.5 = P × [1.1025 − 1]

=> 102.5 = P × 0.1025

=> P = 102.5 ÷ 0.1025 = Rs. 1000

Now, calculate Simple Interest (SI):

=> SI = (1000 × 5 × 2) ÷ 100

=> SI = 10000 ÷ 100

=> SI = Rs. 100

Therefore The correct answer is Rs. 100.

Additional Information

Difference between CI and SI

For a period of 2 years, the difference (D) between CI and SI is given by: D = P × (R/100)².

Effective Rate of Interest

For 2 years, effective CI rate = x + y + (xy/100)%, where x and y are rates for the 1st and 2nd years.

Compound Interest Formula

Amount (A) = P(1 + R/100)^n, where CI = A − P.

Q36. Answer: (b) All India Muslim Personal Law Board

The Correct answer is All India Muslim Personal Law Board.

Key Points

• The All India Muslim Personal Law Board (AIMPLB) was established in 1973.

• It is a non-governmental organization that aims to protect and promote the application of Islamic personal laws (Shariat) for Muslims in India.

• The organization played a pivotal role in the protests against the Waqf (Amendment) Act of 2025, terming it as "unconstitutional and undemocratic."

• AIMPLB has been actively involved in issues related to Muslim personal laws, inheritance, marriage, divorce, and maintenance under the purview of the Muslim Personal Law (Shariat) Application Act, 1937.

• It frequently advocates for the autonomy of Muslim institutions and opposes interference in religious matters by the government.

• The protests led by AIMPLB in 2025 were part of its broader mission to safeguard the rights and interests of the Muslim community in India.

• The organization comprises members from various schools of Islamic thought, including Sunnis, Shias, and other smaller sects, ensuring representation across the community.

Additional Information

• All India Shia Personal Law Board

• The All India Shia Personal Law Board (AISPLB) was formed in 2005 to address the specific issues of the Shia community in India.

• It operates independently of the AIMPLB and focuses on matters related to Shia jurisprudence, customs, and traditions.

• Although it advocates for Shia rights, it was not at the forefront of the protests against the Waqf (Amendment) Act.

• Imarat-e-Shariah

• The Imarat-e-Shariah is a socio-religious organization based in Patna, Bihar.

• It primarily works for the welfare of the Muslim community in states like Bihar, Jharkhand, and Odisha.

• It provides services such as Islamic education, dispute resolution, and welfare programs but was not involved in leading the

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nationwide protests in 2025.

• Jamiat Ulema-e-Hind

• The Jamiat Ulema-e-Hind is one of the oldest Islamic organizations in India, established in 1919.

• It primarily focuses on political and social issues affecting Muslims in India.

• While it has participated in various movements, the leadership of protests against the Waqf (Amendment) Act was not attributed to this organization.

Q37. Answer: (b) 5 km to the south

Given:

Mr. XYZ starts from Point A and drives 15 km towards the west.

He then takes a left turn, drives 11 km, turns left and drives 19 km.

He then takes a left turn and drives 16 km. He takes a final left turn, drives 4 km and stops at Point P.

Thus, he drive 5 km to the south in order to reach Point A again.

Hence, the correct answer is "Option 2".

Q38. Answer: (a) Two

Given: Seven people, A, B, L, M, N, S, and T are sitting in a row, facing north.

Only three people sit between A and S. M sits to the immediate left of S.

No one sits to the right of T. Only two people sit between T and M. N sits to the immediate right of L.

Thus, Only two people sit between B and N.

Hence, the correct answer is "option 1".

Q39. Answer: (d) high water table

The Correct answer is high water table.

Key Points

• Sub-irrigation is a method of irrigation where water is supplied directly to the root zone by raising the water table.

• This technique is particularly beneficial in areas with a high water table, as it allows plants to access water naturally through capillary action.

• It minimizes water evaporation and runoff, making it more efficient and environmentally friendly.

• Regions with a high water table are ideal for sub-irrigation as water is readily available just below the surface.

• This method reduces the need for complex irrigation infrastructure and is suitable for crops that thrive with consistent moisture levels.

• India has several regions with high water tables, such as parts of the Indo-Gangetic Plain, where sub-irrigation can be effectively practiced.

Additional Information

• Sandy soil

• Sandy soil is characterized by large particles and poor water retention capacity.

• Sub-irrigation is not effective in sandy soils as water cannot be held near the root zone due to its high permeability.

• Crops in sandy soils usually require surface or sprinkler irrigation systems for optimal growth.

• Low soil fertility

• Low soil fertility refers to the lack of essential nutrients needed for plant growth.

• This condition is unrelated to the water table and sub-irrigation; it requires soil amendment techniques such as fertilizer application or organic matter incorporation.

• Low water table

• Areas with a low water table are unsuitable for sub-irrigation because water is not readily available near the surface.

• Such regions often require alternative irrigation methods like drip irrigation or canal irrigation.

Q40. Answer: (c) Rs. 300

Shortcut Trick

Assume a base Average Expenditure of Rs. 300.

Calculate deviations from Rs. 300: −50, 0, −25, +25, +50.

Sum of deviations = (−50 + 50) + (−25 + 25) + 0 = 0.

Net change in average = 0 ÷ 5 = 0.

Final Average = 300 + 0 = Rs. 300.

Therefore The correct answer is Rs. 300.

Alternate Method

Given:

Expenditure on Monday = Rs. 250

Expenditure on Tuesday = Rs. 300

Expenditure on Wednesday = Rs. 275

Expenditure on Thursday = Rs. 325

Expenditure on Friday = Rs. 350

Formula Used:

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

Calculations:

=> Total Expenditure = 250 + 300 + 275 + 325 + 350

=> Total Expenditure = Rs. 1500

=> Number of Days = 5

=> Average Daily Expenditure = 1500 ÷ 5

=> Average Daily Expenditure = Rs. 300

Therefore The correct answer is Rs. 300.

Additional Information

Arithmetic Mean

The basic average, calculated by dividing the sum of a set of numbers by the count of those numbers. Formula: Average = Σx ÷ n.

Combined Average

The average of two or more groups combined. Formula: Combined Avg = (n1A1 + n2A2) ÷ (n1 + n2).

Average of Consecutive Numbers

For any sequence in Arithmetic Progression (AP), the average is simply (First Term + Last Term) ÷ 2.

Q41. Answer: (b) VJF : XLA

The pattern followed in both pairs is a consistent shift of (+2, +2, -5).

For: ICK : KEF

For: HDW : JFR

Now let's check all the options with this pattern.

Option 1: GGP : IJK

Option 2: VJF : XLA

Option 3: KLR : MNN

Option 4: RFM : TIH

Hence, the correct answer is Option 2

Q42. Answer: (d) Pushyamitra

The correct answer is Pushyamitra.

Key Points

• Pushyamitra was the founder of the Shunga Dynasty in ancient India.

• He is historically known for overthrowing the Mauryan dynasty and establishing his rule around 185 BCE.

• Pushyamitra Shunga was a Brahmin general in the Mauryan Empire before he ascended to power.

• He is believed to have engaged in conflicts with the Bactrian-Greek ruler Demetrius I, who invaded parts of northern India during his reign.

• Demetrius I's campaigns were aimed at expanding the Indo-Greek territories, leading to confrontations with local rulers, including Pushyamitra.

• The historical records, including texts like the Milindapanha and works by classical historians, suggest that these invasions were a significant challenge for the Shunga rulers.

• Pushyamitra's reign marked the decline of the Buddhist influence propagated by the Mauryan rulers and a resurgence of Brahmanical practices.

Additional Information

• Harsha

• Harsha was an emperor who ruled northern India during the 7th century CE.

• He is known for his reign of peace, prosperity, and revival of Hinduism and Buddhism.
• Harsha was not contemporary to Demetrius or Pushyamitra, as his rule occurred much later.
• Nahapana
• Nahapana was a ruler of the Western Kshatrapas, a dynasty of Indo-Scythian origin.
• He ruled during the early centuries of the Common Era, much after the time of Demetrius and Pushyamitra.
• Hence, there was no direct conflict between Nahapana and Demetrius.
• Simuka
• Simuka was the founder of the Satavahana Dynasty, ruling parts of South India.
• His reign was not contemporaneous with Demetrius, and his kingdom was geographically distant from the Indo-Greek territories.

Q43. Answer: (d) Green box

The Correct answer is Green box.

Key Points

• The PM-KISAN scheme is a direct income support scheme launched by the Government of India to provide financial assistance to farmers.
• Under the World Trade Organization's (WTO) Agreement on Agriculture, subsidies are classified into different "boxes" based on their impact on trade and production.
• The Green Box includes subsidies that have minimal or no trade-distorting effects on production and are considered permissible under WTO rules.
• PM-KISAN falls under the Green Box because it involves direct income transfers to farmers without linking the payments to the production of any specific crop or agricultural output.
• The scheme provides Rs. 6,000 annually in three equal installments to eligible farmers, ensuring a steady source of income for agricultural households.
• Green Box subsidies are typically government-funded and do not involve price support, making them compliant with WTO regulations.
• This classification ensures that the PM-KISAN scheme does not violate international trade norms and supports farmers in a non-discriminatory manner.

Additional Information

• Red Box
• Red Box subsidies are prohibited under WTO rules as they have significant trade-distorting effects.
• These include measures such as export subsidies that directly affect global trade and production.
• Amber Box
• Amber Box subsidies are considered trade-distorting but are subject to reduction commitments under WTO.
• Examples include price support programs and subsidies linked to production levels.
• Blue Box
• Blue Box subsidies are a subset of Amber Box but are exempt from reduction commitments under specific conditions.
• These subsidies are linked to production-limiting programs and aim to reduce overproduction.

Q44. Answer: (a) 1530

The Correct answer is 1530.

Key Points

• In 1530, Goa became the capital of the Portuguese commercial empire in India.
• The Portuguese first arrived in India in 1498, when Vasco da Gama landed on the Malabar coast.
• They established their presence in Goa after capturing it from the Sultan of Bijapur in 1510.
• Goa was strategically chosen as the capital due to its ideal location for maritime trade and its strong coastal defenses.
• The city of Goa became the hub of Portuguese administration, trade, and missionary activities in India during the colonial period.
• Under Portuguese rule, Goa flourished as a center for trade in spices, textiles, and other goods, connecting Europe and Asia.
• Goa remained the capital of Portuguese India until India's independence and the eventual liberation of Goa in 1961.
• Portuguese influence can still be seen in Goa's architecture, culture, and cuisine.

Additional Information

• Option 2 (1390)
• No significant historical events related to Goa's establishment as the Portuguese capital occurred in 1390.
• During this period, Goa was under the control of various Indian rulers, such as the Kadamba dynasty and later the Bahmani Sultanate.

• Option 3 (1659)

• By 1659, Goa had already been the Portuguese capital for over a century.

• This date is not relevant to the establishment of Goa as the Portuguese capital but may be associated with other historical events in Portuguese India.

• Option 4 (1410)

• In 1410, Goa was not under Portuguese control. It was ruled by local dynasties before being captured by the Sultan of Bijapur.

• The Portuguese arrived in India much later, in the late 15th century.

Q45. Answer: (c) 9 States and 4 Union Territories

The Correct answer is 9 States and 4 Union Territories.

Key Points

• As per the Annual Report 2022-23 of the Ministry of Home Affairs, India has a coastline that is spread across 9 States and 4 Union Territories (UTs).

• The Indian coastline spans approximately 7,516.6 km, including the mainland and islands.

• The 9 coastal states are: Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, and West Bengal.

• The 4 coastal Union Territories are: Andaman and Nicobar Islands, Lakshadweep, Puducherry, and Daman and Diu.

• Coastal regions play a significant role in India's economy, as they are hubs for port activities, fishing, tourism, and industries.

• The coastline also supports rich biodiversity, including mangroves, coral reefs, and marine ecosystems.

• Important ports along the Indian coastline include Mumbai Port, Chennai Port, Visakhapatnam Port, and Kochi Port.

• The Ministry of Home Affairs oversees the security of India's coastline through agencies such as the Indian Coast Guard and the Marine Police.

Additional Information

• 10 States and 5 Union Territories

• This is incorrect because India has only 9 coastal states, not 10.

• The number of coastal Union Territories is also limited to 4, not 5.

• 11 States and 6 Union Territories

• This option is incorrect as India does not have 11 coastal states, nor does it have 6 coastal Union Territories.

• 8 States and 3 Union Territories

• This is incorrect because the total number of coastal states is 9, not 8.

• Similarly, there are 4 coastal Union Territories, not 3.

Q46. Answer: (c) UWCG

The pattern can be summarized as (-5, -5, -5, -5)

For: YAGK : RTZD

For: WYEI : PRXB

Applying the same logic to BDJN:

Thus, BDJN is related to UWCG.

Hence, the correct answer is "Option 3".

Q47. Answer: (a) 30 minutes

Shortcut Trick

Let Total Capacity of the tank be 120 units (LCM of 60 and 40).

Efficiency of Pipe C = 2 units/min and Pipe D = 3 units/min.

Average efficiency for total time T = (Efficiency of D × 0.5) + (Efficiency of C+D × 0.5).

Average efficiency = (3 × 0.5) + (5 × 0.5) = 1.5 + 2.5 = 4 units/min.

Total Time = 120 ÷ 4 = 30 minutes.

Therefore The correct answer is 30 min.

Alternate Method

Given: Filling time for Pipe C = 60 min, Pipe D = 40 min.

Person	Days	Total Work	Efficiency
Pipe C	60	120	2

Pipe D	40	3	

Let the total time taken to fill the tank be T minutes.

=> Time for which only Pipe D works = T/2

=> Time for which Pipes C and D work together = T/2

=> Work done = (Efficiency of D × T/2) + (Efficiency of C+D × T/2) = 120

=> (3 × T/2) + ((2 + 3) × T/2) = 120

=> 1.5T + 2.5T = 120

=> 4T = 120

=> T = 30 min

Therefore The correct answer is 30 min.

Additional Information

Pipes and Cisterns Efficiency

The efficiency of a pipe is inversely proportional to the time it takes to fill a tank. Efficiency = Total Work ÷ Time.

Combined Pipe Formula

If two pipes fill a tank in x and y hours, the time taken together is (x × y) ÷ (x + y) hours.

Inlet and Outlet Pipes

Inlet pipes have positive efficiency, while outlet (leakage) pipes have negative efficiency when calculating net flow.

Q48. Answer: (a) For undiscovered elements

The Correct answer is For undiscovered elements.

Key Points

• Dmitri Mendeleev, the Russian chemist, is credited with the creation of the first widely recognized periodic table.

• Mendeleev arranged the elements in order of their increasing atomic weights and grouped them based on similar chemical properties.

• While arranging, he noticed gaps in the periodic table and intentionally left them for undiscovered elements.

• He predicted the existence of these elements and their properties, long before they were discovered.

• Examples of elements discovered later that fit into these gaps include gallium (Ga), scandium (Sc), and germanium (Ge).

• This approach demonstrated the predictive power of the periodic table and highlighted its importance in understanding chemical behavior.

• The gaps ensured the periodic table remained organized and followed the periodic law, which states that the properties of elements are periodic functions of their atomic weights (later modified to atomic numbers).

Additional Information

• To make the table look symmetrical

• Mendeleev did not leave gaps for aesthetic purposes or symmetry; his focus was on the scientific rationale behind the arrangement of elements.

• The periodic table's structure is determined by chemical properties and atomic weights (or atomic numbers), not symmetry.

• To include isotopes

• Mendeleev's periodic table was based on atomic weight, not isotopes. The concept of isotopes was introduced later by Frederick Soddy in the early 20th century.

• Isotopes are variants of elements with the same number of protons but different numbers of neutrons, and they were not part of Mendeleev's original table.

• To avoid repetition of elements

• Mendeleev's periodic table did not have repetition of elements; each element had a unique place based on its atomic weight and chemical properties.

• The gaps were for elements yet to be discovered, not to prevent repetition.

Q49. Answer: (a) 43

Shortcut Trick

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

Scan the data for repetitions: 43 appears 4 times, while 53 appears 3 times.

Other numbers like 42 and 54 appear only 2 times each.

Since 43 has the highest frequency, it is the mode.

Therefore The correct answer is 43.

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Alternate Method

Given: Data set = {53, 47, 43, 42, 52, 54, 54, 51, 42, 53, 53, 48, 46, 43, 43, 40, 43, 41}

Formula: Mode = Value with the maximum frequency.

To find the mode, we calculate the frequency of each observation:

=> Frequency of 40 = 1

=> Frequency of 41 = 1

=> Frequency of 42 = 2

=> Frequency of 43 = 4

=> Frequency of 46 = 1

=> Frequency of 47 = 1

=> Frequency of 48 = 1

=> Frequency of 51 = 1

=> Frequency of 52 = 1

=> Frequency of 53 = 3

=> Frequency of 54 = 2

=> The observation with the maximum frequency is 43 (frequency = 4).

Therefore The correct answer is 43.

Additional Information

Empirical Relationship

For a moderately skewed distribution, the relationship between the three measures of central tendency is: Mode = 3 × Median − 2 × Mean.

Bimodal and Multimodal Data

If two values have the same maximum frequency, the data is bimodal. If more than two values have the same maximum frequency, it is multimodal.

Median

The Median is the middle value when data is sorted. For an even number of observations (n), it is the average of the (n/2)^(th) and (n/2 + 1)^(th) terms.

Q50. Answer: (d) JNFI

The pattern can be summarized as (-7, -7, -7, -7).

Pair 1: MQIL : FJBE

Pair 2: OSKN : HLDG

Applying the same logic to QUMP:

Thus, QUMP is related to JNFI.

Hence, the correct answer is "Option 4".

Q51. Answer: (c) 24

Given equation: 35 − 112 × 84 ÷ 48 + 75 = ?

According to the question, after '+' and '−' are interchanged and '×' and '÷' are interchanged:

35 − 112 × 84 ÷ 48 + 75 = ? => 35 + 112 ÷ 84 × 48 - 75 = ?

=> 35 + 112 ÷ 84 × 48 - 75 = ?

=> 35 + 1.33 × 48 - 75 = ?

=> 35 + 64 - 75 = ?

=> 99 - 75 = ?

=> 24 = ?

Hence, "Option 3" is the correct answer.

Q52. Answer: (a) QIW 144

The pattern followed here is.

Thus, the missing term in the series is QIW 144.

Hence, the correct answer is Option 1.

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Q53. Answer: (c) System of units

The Correct answer is System of units.

Key Points

• The system of units is a standardized framework used for the measurement of physical quantities.

• It includes both base units (fundamental units) and derived units (units derived from the base units through mathematical relationships).

• The most widely used system of units is the International System of Units (SI), which is globally recognized.

• Base units in the SI system include the meter (length), kilogram (mass), second (time), ampere (electric current), kelvin (temperature), mole (amount of substance), and candela (luminous intensity).

• Derived units, such as newton (force), joule (energy), and watt (power), are formed by combining base units according to specific equations.

• Using a standardized system ensures consistency, accuracy, and ease of communication in scientific and technical fields worldwide.

• The system of units is essential for conducting research, industrial processes, and global trade where precise measurements are required.

Additional Information

• Scientific model

• A scientific model is a representation of a system, concept, or phenomenon used to explain and predict its behavior.

• Examples include the Bohr model of the atom, the standard model in particle physics, and the climate models used to study weather patterns.

• It is not directly related to the units of measurement.

• Universal constant system

• The term universal constant system is not a formally recognized concept in physics.

• However, there are universal constants, such as the speed of light (c), gravitational constant (G), and Planck's constant (h), which are fundamental to the laws of physics.

• These constants are utilized within the framework of the system of units but do not constitute a separate system.

• Measurement set

• The term measurement set is a generic phrase and does not represent a formalized concept in physics or metrology.

• It could refer to a collection of measured data or instruments, but it is not equivalent to the system of units.

Q54. Answer: (a) 15

Given:

60% of 40 and (3/5) of 15

Formula Used:

Percentage calculation: (X% of Y) = (X × Y) / 100

Fraction of a number: (P/Q) × N

Difference = Value 1 - Value 2

Calculation:

60% of 40 = (60 × 40) / 100

=> (60 × 40) / 100 = 2400 / 100 = 24

(3/5) of 15 = (3 × 15) / 5

=> (3 × 15) / 5 = 45 / 5 = 9

Difference = 24 - 9

=> 24 - 9 = 15

The difference is 15.

Q55. Answer: (d) 4.93 out of 5

The correct answer is 4.93 out of 5.

Key Points

• The Data Governance Quality Index (DGQI) 2.0 is a tool developed to assess the data management practices of government departments.

• The Department of Rural Development achieved a remarkable score of 4.93 out of 5 in Q4 of 2023-24, indicating strong data governance practices.

• The DGQI framework evaluates departments on various parameters, including data quality, standards, security, integration, and

accessibility.

• This high score reflects the department's commitment to efficient data management, transparency, and accountability in its operations.

• The Department of Rural Development plays a crucial role in implementing flagship programs like MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme) and PMAY-G (Pradhan Mantri Awaas Yojana - Gramin), which require robust data systems.

• Such scores are indicative of the department's efforts towards leveraging data-driven decision-making to improve service delivery and governance.

• DGQI assessments are part of the government's initiative to enhance e-governance and ensure better utilization of data across various schemes.

Additional Information

• Data Governance Quality Index (DGQI)

• The DGQI is a framework introduced by NITI Aayog to ensure that data is efficiently managed and utilized by government departments.

• The framework assesses departments on 6 key pillars: Data Quality, Data Standards, Data Security, Data Use Cases, Data Integration, and Data Accessibility.

• DGQI 2.0 builds on the earlier version and incorporates more advanced metrics for data governance.

• Department of Rural Development

• It is responsible for implementing major rural development schemes in India, including MGNREGS, PMAY-G, and NRLM (National Rural Livelihoods Mission).

• The department focuses on improving rural infrastructure, generating employment, and alleviating poverty.

• A strong data governance system helps the department track progress, identify gaps, and improve the efficiency of its programs.

• Importance of High DGQI Scores

• High scores reflect adherence to best practices in data governance, ensuring data reliability and security.

• They also signify the department's readiness for integrated digital systems and data-driven policy-making.

• Such scores can serve as benchmarks for other departments striving for better data governance.

Q56. Answer: (a) 8

Shortcut Trick

Net efficiency = Filling efficiency − Emptying efficiency.

Let Total Work = LCM(15, 40) = 120 units.

Efficiency: Pipe A = +8, Pipe B = −3 → Combined = +5 units/hr.

Required Work = 1/3 × 120 = 40 units.

Time = 40 ÷ 5 = 8 hours.

Therefore The correct answer is 8 hours.

Alternate Method

Given: Filling time = 15 hours, Emptying time = 40 hours.

Formula Used: Efficiency = Total Work ÷ Time; Time = Work ÷ Efficiency.

Pipe	Time (hrs)	Total Capacity (LCM)	Efficiency
Filling Pipe	15	120	+8
Emptying Pipe	40	−3	

=> Net efficiency of both pipes = 8 − 3 = 5 units/hr.

=> Capacity to be filled = 1/3 × 120 = 40 units.

=> Time required = 40 ÷ 5 = 8 hours.

Therefore The correct answer is 8 hours.

Additional Information

Pipes and Cisterns Concept

Filling pipes have positive efficiency, while outlet or leakage pipes have negative efficiency. Total capacity is typically assumed as the LCM of individual times.

Net Work Formula

If pipe A fills in x hrs and pipe B empties in y hrs, net work done in 1 hr = (1/x − 1/y). Time to fill completely = (xy)/(y − x).

Q57. Answer: (d) 10%

Shortcut Trick

Total Interest Percentage = (Interest ÷ Principal) × 100

Total Interest % = (700 ÷ 1400) × 100 = 50%

Rate of Interest per annum = Total Interest % ÷ Time

Rate (R) = 50% ÷ 5 = 10%

Therefore The correct answer is 10%.

Alternate Method

Given:

Principal (P) = Rs. 1,400

Simple Interest (SI) = Rs. 700

Time (T) = 5 years

Formula Used:

SI = (P × R × T) ÷ 100

Calculations:

=> 700 = (1400 × R × 5) ÷ 100

=> 700 = 14 × R × 5

=> 700 = 70 × R

=> R = 700 ÷ 70

=> R = 10%

Therefore The correct answer is 10%.

Additional Information

Simple Interest (SI)

It is the interest calculated only on the initial Principal amount for the entire period. Formula: SI = (P × R × T) ÷ 100.

Amount (A)

The total money (Principal + Interest) to be paid back after the time period. Formula: A = P + SI = P(1 + RT ÷ 100).

Rate of Interest (R)

The percentage of the Principal charged as interest per year. R = (SI × 100) ÷ (P × T).

Q58. Answer: (d) Large surface area combined with a thin alveolar-capillary barrier

The Correct answer is Large surface area combined with a thin alveolar-capillary barrier.

Key Points

• The alveoli in the lungs are designed to maximize gas exchange efficiency.

• Their structure provides a large surface area due to the presence of millions of alveoli, which increases the interface for oxygen and carbon dioxide exchange.

• The walls of the alveoli are composed of a single layer of thin epithelial cells, which minimizes the diffusion distance for gases.

• The adjacent capillaries also have thin walls, further facilitating the quick diffusion of gases.

• The thin alveolar-capillary barrier ensures rapid exchange of oxygen into the blood and carbon dioxide out of the blood.

• This structure is further supported by a layer of surfactant, which reduces the surface tension of the alveoli and prevents their collapse during exhalation.

• The combination of large surface area, thin barriers, and proximity of alveoli to capillaries is crucial for maintaining the efficiency of gas exchange.

Additional Information

• Thick epithelial lining to protect from pathogens

• While the alveoli have a thin epithelial lining for efficient gas exchange, other parts of the respiratory tract, such as the trachea, have thicker epithelial layers to provide protection from pathogens.

• These areas are also supported by mucus and cilia to trap and expel foreign particles.

• Abundance of mucus-secreting cells

• Mucus-secreting cells are prominent in the upper respiratory tract but are not a feature of alveoli, as mucus would impede gas exchange.

• Mucus primarily functions to trap dust, debris, and pathogens, preventing them from reaching the delicate alveoli.

• A robust elastic network to maintain alveolar shape

• The elastic fibers in the alveoli allow them to expand and recoil during breathing, but this feature alone does not directly enhance

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gas exchange efficiency.

• The elastic network supports the structural integrity of the alveoli rather than facilitating gas diffusion.

Q59. Answer: (a) The file will open in Compatibility Mode with limited functionality.

The Correct answer is The file will open in Compatibility Mode with limited functionality.

Key Points

• When an MS Excel file created in a newer version (e.g., Excel 2021) is opened in an older version (e.g., Excel 2010), it typically opens in Compatibility Mode.

• Compatibility Mode is a feature in Excel that ensures the file remains accessible in older versions, but some of the newer features and formatting may not be fully functional.

• This mode is used to maintain backward compatibility, allowing users to work on the file despite the version differences.

• Features introduced in the newer versions of Excel, such as dynamic arrays, new chart types, or advanced functions, may not be supported in older versions and will either be disabled or replaced with approximate alternatives.

• Users are often notified about the limitations when the file is opened in Compatibility Mode.

• To restore full functionality, users can either upgrade their Excel version or save the file in an older format compatible with their current version.

• Using Compatibility Mode ensures is maintained while allowing collaboration across different Excel versions.

Additional Information

• The file will be automatically converted to a PDF.

• This is incorrect as Excel does not automatically convert files to PDF. Users must manually choose to export or save the file as a PDF format.

• PDF conversion is an optional feature available in Excel, useful for creating non-editable versions of documents.

• MS Excel will display an error and refuse to open the file.

• Excel typically does not refuse to open files from newer versions. Instead, it uses Compatibility Mode to handle version differences.

• Errors may only occur in rare cases of file corruption or unsupported file formats.

• The file will open normally with all features intact.

• This is incorrect because newer features not available in the older version of Excel will lead to limited functionality.

• Older versions lack the ability to process certain advanced features or formatting introduced in later versions.

Q60. Answer: (b) Arunachal Pradesh

The Correct answer is Arunachal Pradesh.

Key Points

• Arunachal Pradesh is one of the northeastern states of India with a sparse population.

• The state is primarily characterized by its hilly terrain and dense forests, which make habitation and agricultural activities challenging.

• It is located in the Himalayan region, contributing to its rugged topography.

• Arunachal Pradesh has a total area of approximately 83,743 square kilometers, but the population density is very low due to the inaccessibility of many areas.

• The state is known for its tribal communities, who predominantly live in scattered villages rather than urban centers.

• Geographical factors such as steep slopes, heavy rainfall, and dense forest cover restrict large-scale development and settlement.

• Despite being sparsely populated, Arunachal Pradesh is rich in biodiversity, and it is home to various unique flora and fauna.

• It shares international borders with China, Bhutan, and Myanmar, which also add to its strategic significance.

Additional Information

• Odisha

• Odisha is located on the eastern coast of India and is known for its coastal plains and fertile lands.

• The state has a relatively higher population density, especially in areas like Bhubaneswar and Cuttack.

• Odisha is famous for its Chilika Lake and historical temples like the Konark Sun Temple.

• It is less affected by hilly terrain compared to Arunachal Pradesh.

• Tamil Nadu

• Tamil Nadu is located in southern India and has a high population density due to its fertile plains and developed urban areas.

• The state is known for its industries, agriculture, and cultural heritage.

• It is home to the Cauvery Delta, which is one of the most agriculturally productive regions in India.

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• Hilly terrain exists in parts such as the Nilgiris, but it does not dominate the state's geography.
• Gujarat
• Gujarat is located in western India and is known for its industrial hubs, coastal areas, and plains.
• It has a relatively high population density due to urban centers like Ahmedabad, Surat, and Vadodara.
• Gujarat is famous for its Gir National Park, home to the Asiatic lion, and Rann of Kutch, a salt marsh.
• The state does not have widespread hilly terrain like Arunachal Pradesh.

Q61. Answer: (c) PIK

The logic followed here is:
Thus, the missing term in the series is PIK.
Hence, the correct answer is "Option 3";

Q62. Answer: (b) Two

Given: Seven boxes, C, D, E, F, G, H and X, are kept one over the other but not necessarily in the same order.
1) Only two boxes are kept between C and H.
2) Only F is kept above G.
3) Only one box is kept between G and C.
4) E is kept at some place below X but at some place above D.

F
G
X
C
E
D
H

After arranging the boxes, the number of boxes kept between X and D is 2.
Hence, the correct answer is "Option 2".

Q63. Answer: (b) 53.75

Shortcut Trick
Identify the modal class (highest frequency): 50−60 where f1 = 37.
Apply the Mode formula: L + [(f1 − f0) ÷ (2f1 − f0 − f2)] × h
Mode = 50 + [(37 − 34) ÷ (74 − 66)] × 10 = 50 + (3 ÷ 8) × 10
Mode = 50 + 3.75 = 53.75
Therefore The correct answer is 53.75 years.
Alternate Method
Given:
Lower limit of modal class (L) = 50
Frequency of modal class (f1) = 37
Frequency of preceding class (f0) = 34
Frequency of succeeding class (f2) = 32
Class width (h) = 10
Formula: Mode = L + [(f1 − f0) ÷ (2 × f1 − f0 − f2)] × h
=> Mode = 50 + [(37 − 34) ÷ (2 × 37 − 34 − 32)] × 10
=> Mode = 50 + [3 ÷ (74 − 66)] × 10
=> Mode = 50 + (3 ÷ 8) × 10
=> Mode = 50 + 0.375 × 1

Q64. Answer: (c) A new slide is inserted with the same layout as the previous slide.

The Correct answer is A new slide is inserted with the same layout as the previous slide.

Key Points

• When you press Ctrl + M in MS PowerPoint 365, it automatically inserts a new slide into the presentation.

• The new slide retains the same layout as the previously selected slide.

• This shortcut is particularly useful for creating a series of slides with a consistent design or layout, ensuring uniformity in the presentation.

• It saves time by eliminating the need to manually select and apply the layout for every new slide.

• The feature is part of PowerPoint's focus on enhancing workflow efficiency and improving the user experience.

• For example, if the previous slide had a Title and Content layout, the new slide will also inherit this layout when using Ctrl + M.

• This functionality is applicable across all modern versions of Microsoft PowerPoint, including PowerPoint 365.

Additional Information

• Option 1: The slide master view is opened

• The Slide Master view is used for editing the overall design of a presentation, such as font styles, placeholder positions, and backgrounds.

• This view can be accessed by navigating to the View tab on the ribbon and selecting Slide Master.

• It is not associated with the Ctrl + M shortcut.

• Option 2: A duplicate of the current slide is created

• To duplicate a slide in PowerPoint, the shortcut is generally Ctrl + D, not Ctrl + M.

• Duplicating a slide creates an identical copy, including all its content and layout.

• Option 4: A new blank slide is inserted regardless of the previous layout

• To insert a blank slide, users can choose the Blank layout manually from the Home tab.

• However, Ctrl + M inserts a slide with the same layout as the previous one, not a blank layout.

Q65. Answer: (b) To revolutionise high-speed transportation and reduce travel time

The Correct answer is To revolutionise high-speed transportation and reduce travel time.

Key Points

• The primary objective of the hyperloop test track launched by IIT Madras and Indian Railways in 2025 is to test and develop a system that can revolutionize high-speed transportation.

• The hyperloop aims to drastically reduce travel time by operating at speeds of up to 1200 km/h, which is much faster than conventional rail or air travel.

• This technology uses a system of low-pressure vacuum tubes through which pods travel, significantly minimizing air resistance and enabling such high speeds.

• The hyperloop system is considered a game-changing innovation in transportation due to its potential to connect cities and regions efficiently.

• India's investment in hyperloop technology aligns with its vision of modernizing infrastructure and creating future-ready transportation systems.

• The collaboration between IIT Madras and Indian Railways demonstrates India's commitment to advancing cutting-edge technologies and fostering research and development within the country.

• Hyperloop technology could significantly impact urban development, reduce congestion, and improve the overall quality of life by offering faster and more efficient travel options.

Additional Information

• To promote sustainable transportation solutions

• The concept of sustainable transportation focuses on reducing carbon emissions and promoting eco-friendly technologies.

• While hyperloop technology has the potential to reduce environmental impact, its primary objective is not specifically focused on sustainability but rather on achieving high-speed travel.

• To develop a new mode of transportation for goods

• Although hyperloop technology can be adapted for cargo transportation, the initial focus is on passenger travel to demonstrate the feasibility and efficiency of the technology.

• To test the feasibility of vacuum tube technology

• Hyperloop technology does rely on vacuum tube systems, but the objective of the test track is broader, aiming to revolutionize transportation speeds and reduce travel time on a large scale.

Q66. Answer: (d) 13

The logic followed here is:

Position of Hari from the right = 11

Position of Hari from the left = 38 - 11 + 1 = 28th

Position of Hema from the left = 14th

Now, the number of people between Hari and Hema is:

= Position of Hari from the left - Position of Hema from the left - 1

= 28 - 14 - 1

= 13.

Hence, the correct answer is "Option 4".

Q67. Answer: (c) Decreased from 5.4% to 5.1%

The Correct answer is Decreased from 5.4% to 5.1%.

Key Points

• The unemployment rate is a critical indicator of the health of an economy, as it reflects the percentage of people actively seeking work but unable to find it.

• For the fiscal year FY23 to FY24, the unemployment rate in usual status for persons aged 15 years and above in urban areas decreased from 5.4% to 5.1%.

• This decline shows an improvement in employment opportunities in urban areas, indicating a positive trend in the economic recovery or growth during this period.

• The term usual status refers to the employment status of individuals over a longer reference period, typically one year, offering insights into sustained employment trends.

• The data is sourced from the Department of Economic Affairs, which regularly monitors and reports economic indicators crucial for policy-making and analysis.

• Urban areas often have diverse sectors like services, manufacturing, and IT, which contribute to the employment dynamics captured in this report.

• This trend aligns with efforts by the government and other stakeholders to create jobs, boost industries, and enhance employability through various policies and programs.

Additional Information

• Increased from 4% to 5%

• This option is incorrect as the actual trend shows a decrease in the unemployment rate, not an increase.

• Decreased from 6% to 5%

• This option is incorrect since the unemployment rate did not start at 6% but at 5.4% in FY23.

• Remained stable at 5.0%

• This option is incorrect because the unemployment rate showed a decline rather than remaining stable.

Q68. Answer: (d) Three

Given number: 75246183

According to the question,

Number given	**7**	**5**	**2**	**4**	**6**	**1**	**8**	**3**
Odd digit → (+2) Even digit → (-1)	(+2)	(+2)	(-1)	(-1)	(-1)	(+2)	(-1)	(+2)
Resultant number	9	7	1	3	5	3	7	5

So, digits that appeared more than once in the new number thus formed → 7, 3 and 5 = Three

Hence, "Option 4" is the correct answer.

Q69. Answer: (d) 6

Given: (Left) 815 497 460 637 147 (Right)

According to the question:

Given numbers	**815**	**497**	**460**	**637**	**147**
Number are arranged in ascending order	147	460	497	637	815

So,

Second digit of the highest number → 815 → 1

Third digit of the lowest number → 147 → 7

Thus, if the second digit of the highest number is subtracted from the third digit of the lowest number then the resultant will be → 7 - 1 → 6

Hence, "Option 4" is the correct answer.

Q70. Answer: (d) Three

Given: Seven people D, E, F, G, L, M and N are sitting in a row, facing north.

Only two people sit to the left of L. Only three people sit between L and E.

G sits second to the right of L. Only two people sit between G and M.

D sits at some place to the right of N but at some place to the left of F.

Thus, Only three people sit to the right of D.

Hence, the correct answer is "Option 4".

Q71. Answer: (d) KQM

The logic followed here is:

Option (1): MSN

Option (2): HNI

Option (3): PVQ

Option (4): KQM

Thus, out of all 'KQM' is the odd one out.

Hence, the correct answer is "Option 4".

Q72. Answer: (b) ©16©89

Given Table:

Number/symbol	R	E	A	U	M	D	F	P	Q	I	O	H	N	W	Z	B
Code	#	7	6	$	8	%	•	5	9	4	©	@	d	3	2	1

According to the given condition:

Rule no.	Condition	Result
(i)	First element is a consonant and the third is a vowel	Codes for these two are to be interchanged
(ii)	First element is vowel and the fourth letter is a consonant	First and fourth elements are to be coded as the code for the vowel
(iii)	Both the second and third elements are consonants	Both are to be coded as the code for the third element

Given: OBAHMQ

Here, (ii) rule applies here i.e. first element is vowel and the fourth letter is a consonant.

O → coded as ©

B → coded as 1

A → coded as 6

H → coded as ©

M → coded as 8

Q → coded as 9

So, OBAHMQ → Coded as ©16©89

Hence, "Option 2" is the correct answer.

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Q73. Answer: (c) Rs. 21,380

Shortcut Trick

Let the Monthly Salary be 100%.

Rent = 50%, so the remaining 50% must cover Conveyance, Groceries, and Savings.

Remaining 50% = Rs. 780 + Rs. 9,800 + Rs. 110 = Rs. 10,690.

If 50% = Rs. 10,690, then 100% = Rs. 10,690 × 2 = Rs. 21,380.

Therefore The correct answer is Rs. 21,380.

Alternate Method

Given:

Rent Expenditure = 50% of Salary

Conveyance = Rs. 780, Groceries = Rs. 9,800, Savings = Rs. 110

Formula: Total Salary = Rent + Conveyance + Groceries + Savings

=> Let Total Salary = S

=> S = 0.50S + 780 + 9,800 + 110

=> S − 0.50S = 10,690

=> 0.50S = 10,690

=> S = 10,690 ÷ 0.50

=> S = Rs. 21,380

Therefore The correct answer is Rs. 21,380.

Additional Information

Percentage Base Change

When a value is split into percentages, the sum of all parts must equal 100% of the base value.

Savings Formula

Savings = Income − Total Expenditure. In percentage terms: Savings % = 100% − (Sum of all expenditure %).

Successive Percentage

If the question says 'percent of remaining', use the formula: Final = Initial × (1 − r1/100) × (1 − r2/100).

Q74. Answer: (a) 1472

The logic followed here is:

Thus, the missing term in the series is 1472.

Hence, the correct answer is "Option 1".

Q75. Answer: (d) Tarangmel

The Correct answer is Tarangmel.

Key Points

• Tarangmel is a traditional dance form associated with the Indian state of Goa and is not linked to Rajasthan.

• It is performed during festive occasions like Dussehra and Holi.

• The dancers wear colorful costumes and move rhythmically to the beats of folk music, waving flags and multi-colored cloth streamers.

• Tarangmel reflects the vibrant culture and festive spirit of Goa.

• It is characterized by its high-energy movements and celebration of joy, symbolizing the cheerfulness of the Goan people.

Additional Information

• Kalbelia

• Kalbelia is a folk dance form of Rajasthan, performed by the Kalbelia community, traditionally snake charmers.

• The dance is characterized by its graceful movements, imitating the serpentine motion of snakes.

• It is accompanied by traditional instruments such as the Pungi, Dholak, and Khanjari.

• Kalbelia is recognized as part of UNESCO’s Intangible Cultural Heritage.

• Ghoomar

• Ghoomar is a famous folk dance of Rajasthan, primarily performed by women during special occasions like weddings and festivals.

• The dancers wear traditional attire, including ghagras (long skirts), and perform circular movements.

• It is known for its elegance and intricate footwork.

• Kacho Ghodi

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• Kacho Ghodi, also known as Dummy Horse Dance, is a folk dance of Rajasthan.

• It features performers dressed as if riding a dummy horse, with their costumes resembling traditional Rajasthani attire.

• The dance is performed during celebrations and festive occasions, often accompanied by folk songs and music.

Q76. Answer: (b) (13, 89, 21)

The logic followed here is:

Logic: (First Number + Third Number) × 3 - First Number = Second Number.

Let's verify this logic with the given sets:

For, (7, 80, 22)

=> (7 + 22) × 3 - 7 = 29 × 3 - 7 = 87 - 7 = 80.

Here, the logic followed.

For, (43, 143, 19)

=> (43 + 19) × 3 - 43 = 62 × 3 - 43 = 186 - 43 = 143.

Here, the logic followed.

Now, let's check the options based on this logic:

Option 1) (11, 63, 15)

=> (11 + 15) × 3 - 11 = 26 × 3 - 11 = 78 - 11 = 67. (Given Second number is 63, 63 ≠ 67)

Here, logic not followed.

Option 2) (13, 89, 21)

=> (13 + 21) × 3 - 13 = 34 × 3 - 13 = 102 - 13 = 89. (Matches)

Here, logic followed.

Option 3) (25, 91, 15)

=> (25 + 15) × 3 - 25 = 40 × 3 - 25 = 120 - 25 = 95. (Given Second number is 91, 91 ≠ 95)

Here, logic not followed.

Option 4) (49, 139, 15)

=> (49 + 15) × 3 - 49 = 64 × 3 - 49 = 192 - 49 = 143. (Given Second number is 139, 139 ≠ 143)

Here, logic not followed.

Hence, the correct answer is "Option 2".

Q77. Answer: (a) They were largely made of stone.

The correct answer is They were largely made of stone.

Key Points

• The Ashokan pillars are an important part of India's ancient heritage and were largely made of strong and durable polished stone, primarily Chunar sandstone, which was sourced from the region of Uttar Pradesh.

• These pillars were erected during the reign of Emperor Ashoka in the 3rd century BCE and served as a medium to propagate the teachings of Buddhism and the ethical code of conduct based on his Dhamma.

• The pillars are known for their remarkable craftsmanship, featuring highly polished surfaces and intricate carvings, including the famous Lion Capital at Sarnath, which is now India's national emblem.

• Each pillar weighed several tons and often stood between 40 to 50 feet tall, demonstrating advanced engineering skills of the Mauryan era.

• The inscriptions on these pillars were written in Brahmi script and conveyed messages of moral and ethical guidance, emphasizing non-violence, tolerance, and compassion.

• The pillars were strategically placed in important locations, such as religious sites, trade routes, and administrative centers, ensuring maximum visibility and impact on the population.

Additional Information

• They were largely made of wood

• Wood was not a suitable material for creating structures like Ashokan pillars due to its inability to withstand environmental conditions for centuries. The use of stone ensured durability and permanence.

• Wood was primarily used for temporary constructions or simple tools during ancient times rather than monumental architecture.

• They were largely made of concrete

• Concrete as a construction material was not developed during the Mauryan period, as it became widely used only in modern times, particularly after the Roman invention of concrete in the 2nd century BCE.

• The Ashokan pillars relied on naturally occurring materials like stone rather than artificially created substances like concrete.

• They were largely made of iron

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• Iron was used in ancient India for tools and smaller objects, but crafting monumental structures like pillars from iron was not common due to technological limitations.

• However, ancient India did produce notable iron artifacts like the Iron Pillar of Delhi, which is famous for its rust-resistant properties.

Q78. Answer: (d) Two

Given number: 936245

According to the question,

Number given	9	3	6	2	4	5
Odd digit → (-2) Even digit → (+1)	(-2)	(-2)	(+1)	(+1)	(+1)	(-2)
Resultant number	7	1	7	3	5	3

So, digits that appeared more than once in the new number thus formed → 7 and 3 = Two

Hence, "Option 4" is the correct answer.

Q79. Answer: (d) 5110 and 5130

Shortcut Trick

Identify the constant difference: (Divisor − Remainder)

27 − 17 = 10, 19 − 9 = 10, 15 − 5 = 10.

LCM(27, 19, 15) = 1539. Number format: 1539k − 10.

Check multiples for divisibility by 80: For k = 3, (1539 × 3) − 10 = 4617 − 10 = 4607 (No). For k = 10, (1539 × 10) − 10 = 15380 (No).

The number 5120 is divisible by 80. Thus, 5120 lies between 5110 and 5130.

Therefore The correct answer is 5110 and 5130.

Alternate Method

Given: Remainder is 17 when divided by 27; 9 when divided by 19; 5 when divided by 15. Remainder is 0 when divided by 80.

=> Let the number of marbles be N.

=> N = 27a + 17 => N + 10 = 27(a + 1)

=> N = 19b + 9 => N + 10 = 19(b + 1)

=> N = 15c + 5 => N + 10 = 15(c + 1)

=> Therefore, (N + 10) is a multiple of LCM(27, 19, 15).

=> LCM(27, 19, 15): $27 = 3^3$, 19 = 19, 15 = 3 × 5.

=> LCM = 3^3 × 19 × 5 = 27 × 95 = 2565.

=> N + 10 = 2565k => N = 2565k − 10.

=> Also, N must be divisible by 80. Check values of k:

=> If k = 1, N = 2565 − 10 = 2555 (Not divisible by 80).

=> If k = 2, N = 2565 × 2 − 10 = 5130 − 10 = 5120.

=> Checking divisibility: 5120 ÷ 80 = 64 (Perfectly divisible).

=> The value 5120 lies in the range 5110 to 5130.

Therefore The correct answer is 5110 and 5130.

Additional Information

LCM Method for Remainders

If a number leaves remainders r1, r2, r3 when divided by d1, d2, d3 such that (d1−r1) = (d2−r2) = (d3−r3) = K, then the number is of form LCM(d1, d2, d3) × n − K.

Divisibility Rule of 80

A number is divisible by 80 if it is divisible by both 8 and 10. This means it must end in 0 and the number formed by the last three digits must be divisible by 8.

Q80. Answer: (d) Only conclusion (I) follows.

The least possible venn diagram is given:

Conclusions:

(I) No tablet is a desktop - True(because, all tablets are laptops and no laptops are desktops)

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(II) Some mobiles are desktops - False(because, there is no direct relation is given between them, so it can be possible only).

Thus, Only conclusion (I) follows.

Hence, the correct answer is "Option 4".

Q81. Answer: (c) Format Painter

The Correct answer is Format Painter.

Key Points

• The Format Painter tool in MS Word is not used for moving text but rather for copying formatting from one part of the document to another. It does not serve any function related to text movement.

• The purpose of the Format Painter is to replicate text styles, font settings, colors, or other formatting properties to a different section of the document.

• It is a highly useful feature when maintaining consistent formatting across the document.

• As the question specifically asks for methods of moving selected text, the Format Painter does not qualify since it is unrelated to text relocation.

• While other options such as Drag and Drop, Cut and Paste, or Ctrl + Drag involve physically moving or duplicating text, the Format Painter is exclusively for formatting purposes.

Additional Information

• Drag and Drop

• The Drag and Drop method allows users to move selected text by clicking and dragging it to a new location within the document.

• This method is highly intuitive and often used for quick rearrangement of text.

• Cut and Paste

• The Cut and Paste option involves removing the selected text from its original location and inserting it into a new location.

• This is accomplished using the commands Ctrl + X (Cut) and Ctrl + V (Paste).

• It is one of the most common methods for text relocation in MS Word.

• Ctrl + Drag

• The Ctrl + Drag option is used to duplicate text while moving it to a different location in the document.

• Holding down the Ctrl key while dragging text creates a copy instead of simply moving the text.

• This feature is useful for efficiently duplicating content within the same document.

Q82. Answer: (c) To understand their functioning and interdependence

The Correct answer is To understand their functioning and interdependence.

Key Points

• Classifying economic activities into different sectors helps in understanding the structure of an economy.

• The three main sectors of economic activities are the primary sector (agriculture and natural resources), the secondary sector (manufacturing and industry), and the tertiary sector (services).

• This classification aids in analyzing the functioning of each sector, such as the production processes, employment patterns, and contribution to GDP.

• It allows policymakers to understand the interdependence among sectors, such as how the agriculture sector supplies raw materials to industries or how industries support the services sector.

• This categorization is crucial for identifying strengths and weaknesses within the economy and helps in making decisions on resource allocation, investments, and policy formulation.

• It provides insights into the changing dynamics of the economy, such as the transition from an agriculture-based economy to an industrial or service-based one.

• Understanding sectoral interdependence is essential for ensuring sustainable development and addressing issues like unemployment, resource management, and economic growth.

• This knowledge is particularly significant for a country like India, where the economy is diverse and each sector plays a distinct role in national development.

Additional Information

• To divide labour across sectors

• This option suggests dividing labor between sectors, but the classification of economic activities is not primarily aimed at labor division.

• Labour division depends on factors such as skills, demand, and sectoral growth, and is not the main purpose of categorizing economic activities.

• To increase taxes across sectors

• While taxation policies may vary across sectors, the primary purpose of classification is not to increase taxes.

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• Taxation is a policy decision and not directly related to the understanding of sectoral functioning.
• To reduce employment in capital-intensive sectors
• This option is misleading, as the classification of economic activities is not aimed at reducing employment in any sector.
• Instead, the goal is to ensure balanced development and understand the role of each sector in employment generation.

Q83. Answer: (d) WISH - WHSI - HSIW

The logic followed here is:
For, GOAL - GLAO - LAOG
For, COMB - CBMO - BMOC
Similarly,
WISH - WHSI - HSIW
Hence, the correct answer is "Option 4".

Q84. Answer: (d) Parliamentary Secretaries

The Correct answer is Parliamentary Secretaries.
Key Points
• The Union Council of Ministers in India is a constitutional body established under Article 74 and Article 75 of the Constitution of India.
• The Council of Ministers consists of Cabinet Ministers, Ministers of State (with or without independent charge), and Deputy Ministers.
• Parliamentary Secretaries are not considered a part of the Union Council of Ministers as their role is not defined under the Constitution of India.
• Parliamentary Secretaries are appointed to assist ministers, but they do not hold a formal ministerial position or have executive powers.
• Their role is often advisory, and they act as a link between the minister and the Parliament.
• In some cases, the appointment of Parliamentary Secretaries has been a subject of legal and constitutional challenges due to the office of profit clause under Article 102(1)(a) and Article 191(1)(a) of the Constitution.
Additional Information
• Deputy Ministers
• Deputy Ministers are part of the Union Council of Ministers and assist the Cabinet Ministers or Ministers of State in their respective departments.
• They are subordinate to the Cabinet Ministers and do not hold independent charge of a ministry.
• Their primary role is to handle specific responsibilities assigned by their superiors.
• Ministers of State
• Ministers of State can either hold independent charge of a ministry or assist a Cabinet Minister in managing the workload of a specific ministry.
• When holding independent charge, they perform functions similar to Cabinet Ministers but are ranked lower in hierarchy.
• They are an important part of the Union Council of Ministers.
• Cabinet Ministers
• Cabinet Ministers are the senior-most members of the Union Council of Ministers.
• They hold independent charge of major ministries like Home Affairs, Finance, Defence, and External Affairs.
• They play a key role in decision-making and policy formulation within the government.
• The Cabinet is collectively responsible to the Lok Sabha as per Article 75(3) of the Constitution.

Q85. Answer: (c) West Bengal

The correct answer is West Bengal.
Key Points
• The newly constructed Jagannath Temple in Digha was inaugurated by the Chief Minister of West Bengal in April 2025.
• Digha is a popular coastal town in the Purba Medinipur district of West Bengal, known for its scenic beaches and tourism attractions.
• The Jagannath Temple is dedicated to Lord Jagannath, a form of Lord Krishna, and is of great religious and cultural significance, especially for Hindus.
• This initiative is part of the state government's efforts to boost religious tourism and enhance the infrastructure of Digha, a key tourist destination.

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• The temple draws inspiration from the architecture of the world-famous Jagannath Temple in Puri, Odisha, and is expected to attract devotees and tourists alike.

• West Bengal is known for its diverse culture and traditions, and the inauguration of this temple adds another dimension to the state's spiritual heritage.

Additional Information

• Odisha

• Odisha is home to the famous Jagannath Temple in Puri, which is one of the Char Dham pilgrimage sites and a prominent center of worship.

• The Rath Yatra (Chariot Festival) is a globally renowned event held annually in Puri, Odisha, attracting millions of devotees.

• While the original Jagannath Temple is in Odisha, the newly constructed temple in Digha is in West Bengal.

• Tamil Nadu

• Tamil Nadu is famous for its Dravidian-style temples, such as the Brihadeeswarar Temple and the Meenakshi Amman Temple.

• This state is not associated with the recent construction of the Jagannath Temple in Digha.

• Andhra Pradesh

• Andhra Pradesh is known for its famous temples like the Venkateswara Temple in Tirupati.

• The Jagannath Temple in Digha was not inaugurated in this state.

Q86. Answer: (b) The President may summon the Parliament at least twice a year.

The Correct answer is The President may summon the Parliament at least twice a year.

Key Points

• Under Article 85 of the Indian Constitution, the President has the power to summon the Parliament.

• The Constitution mandates that there should not be a gap of more than six months between two sessions of Parliament.

• This ensures that the Parliament convenes at least twice every year.

• The summoning of Parliament is done on the advice of the Council of Ministers headed by the Prime Minister.

• The sessions of Parliament include the Budget Session (February-March), Monsoon Session (July-August), and Winter Session (November-December).

• Summoning the Parliament is an important aspect of the President's role in ensuring the functioning of the legislative process in India.

• This provision is aimed at maintaining the democratic functioning of the government and its accountability to the Parliament.

Additional Information

• The President may summon the Parliament only once every calendar year

• This option is incorrect as it violates the provisions of Article 85, which states that the Parliament must convene at least twice a year.

• The President can only summon the Parliament after consulting the Prime Minister

• While the President acts on the advice of the Council of Ministers headed by the Prime Minister, the term "consulting" is misleading.

• In reality, the President does not act independently but follows the advice given by the Prime Minister and the Council of Ministers.

• The President may summon the Parliament at his/her discretion with no statutory minimum frequency

• This option is incorrect because the summoning of Parliament is governed by constitutional provisions under Article 85, which mandates a minimum frequency.

• The President does not have complete discretion in this regard; the process is regulated by the Constitution and requires adherence to its provisions.

Q87. Answer: (c) Habeas Corpus

The Correct answer is Habeas Corpus.

Key Points

• The writ of Habeas Corpus is one of the most important writs used to protect the right to life and personal liberty as guaranteed under Article 21 of the Indian Constitution.

• The term Habeas Corpus means "you may have the body." It is a judicial mandate to produce a person who has been detained or imprisoned before the court to determine the legality of their detention.

• This writ ensures that no individual is deprived of their fundamental rights arbitrarily and is a safeguard against unlawful detention.

• The court can order the release of the detained person if it finds that the detention was done without legal justification.

• This writ can be filed by the detained person themselves or by someone on their behalf.

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• The writ of Habeas Corpus is applicable in cases of both preventive detention and illegal detention.

• The right to file this writ can be enforced against both public authorities and private individuals.

Additional Information

• Mandamus

• The writ of Mandamus means "we command." It is issued by a court to direct a public official, government authority, or lower court to perform a duty they are obligated to perform.

• It cannot be issued against a private individual or organization.

• The writ of Mandamus is mostly used to ensure the proper functioning of authorities as per the law.

• Certiorari

• The writ of Certiorari is issued to a lower court or tribunal to transfer a case to a higher authority or to quash an order passed by the lower court if it acted beyond its jurisdiction.

• This writ ensures judicial oversight and prevents the misuse of power by lower courts.

• Prohibition

• The writ of Prohibition is issued by a higher court to a lower court or tribunal, directing it to stop proceedings in a case where it lacks jurisdiction.

• It is a preventive writ used to prevent an overreach of authority or jurisdiction.

Q88. Answer: (d) km

The logic followed here is:

The the code for "rough" is km.

Hence, the correct answer is "Option 4".

Q89. Answer: (d) 192/19

Given:

Expression: 72 - (-98) × (-31 - 58 - 19) ÷ [9 × {7 + (-2) × (-6)}]

Formula Used:

Follow the BODMAS rule (Brackets, Orders, Division/Multiplication, Addition/Subtraction) to simplify the expression.

Calculation:

Step-by-step simplification:

=> 72 - (-98) × (-31 - 58 - 19) ÷ [9 × {7 + (-2) × (-6)}]

=> 72 - (-98) × (-31 - 58 - 19) ÷ [9 × {7 + 12}]

=> 72 - (-98) × (-31 - 58 - 19) ÷ [9 × 19]

=> 72 - (-98) × (-108) ÷ [9 × 19]

=> 72 + 98 × (-108) ÷ [9 × 19]

=> 72 - (10584) ÷ [9 × 19]

=> 72 - (1176) ÷ 19

=> (1368 - 1176) ÷ 19

=> 192/19

The simplified value is 192/19.

Q90. Answer: (a) 4

The logic followed here is:

The code for "M" is "4".

Hence, the correct answer is "Option 1".

Q91. Answer: (b) 7 km towards the East

Given:

Mr. J starts from Point U and drives 2 km towards the North.

He then takes a right turn, drives 9 km, turns right and drives 3 km.

He then takes a right turn and drives 16 km. He then takes a final right turn, drives 1 km and stops at Point P.

Thus, he drive 7 km towards the East in order to reach Point U again.

Hence, the correct answer is "Option 2".

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Q92. Answer: (a) #

Given series: (Left) 6 @ $ 1 8 # 9 % ? 2 4 ? 3 ^ 5 & 7 (Right)

According to the question, all the numbers are dropped from the series:

(Left) 6 @ 1 8 # 9 % ? 2 4 ? 3 ^5 7 (Right) => (Left) @ # % ? ? ^ & (Right)

So, sixth from the right will be → (Left) @ $ # % ? ? ^ & (Right) => #

Hence, "Option 1" is the correct answer.

Q93. Answer: (d) 401√3

Shortcut Trick

Given slant height l = 2r, where r is the radius.

Height h = √(l² − r²) = √((2r)² − r²) = r√3.

Volume V = (1/3)πr²h => 401π = (1/3)πr²(r√3).

401 = (r³√3)/3 => r³ = (401 × 3) / √3 = 401√3.

Therefore The correct answer is 401√3 cm³.

Alternate Method

Given:

Slant height (l) = 2 × Radius (r)

Volume of cone (V) = 401π cm³

Formula Used:

Volume of cone = (1/3)πr²h

Relation between l, r, and h: l² = r² + h²

Calculations:

=> h = √(l² − r²)

=> h = √((2r)² − r²) = √(4r² − r²) = √(3r²) = r√3

=> Volume = (1/3) × π × r² × (r√3)

=> 401π = (π × r³ × √3) / 3

=> 401 = (r³ × √3) / 3

=> r³ = (401 × 3) / √3

=> r³ = 401√3

Therefore The correct answer is 401√3 cm³.

Additional Information

Total Surface Area of Cone

The total surface area is the sum of the curved surface area and the base area: TSA = πrl + πr² = πr(l + r).

Curved Surface Area (CSA)

The lateral or curved surface area of a cone is given by the formula: CSA = πrl.

Equilateral Triangle Cross-section

When the slant height equals the diameter (l = 2r), the vertical cross-section of the cone through the apex is an equilateral triangle.

Q94. Answer: (a) 60°

Shortcut Trick

The expression simplifies to 2secθ = 4.

=> secθ = 2.

Since sec60° = 2, then θ = 60°.

Therefore The correct answer is 60°.

Alternate Method

Given: cosθ/(1-sinθ) + cosθ/(1+sinθ)=4

Formula Used: (1 − sin²θ) = cos²θ and secθ = 1/cosθ

=> cosθ [(1 + sinθ + 1 − sinθ) / (1 − sinθ)(1 + sinθ)] = 4

=> cosθ [2 / (1 − sin²θ)] = 4

=> 2cosθ / cos²θ = 4

=> 2 / cosθ = 4

=> 2secθ = 4

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=> secθ = 2

=> θ = 60°

Therefore The correct answer is 60°.

Additional Information

Trigonometric Identities

Fundamental identity: $\sin^2\theta + \cos^2\theta = 1$. Also, $1 + \tan^2\theta = \sec^2\theta$.

Reciprocal Relations

$\sec\theta = 1/\cos\theta$ and $\text{cosec}\theta = 1/\sin\theta$.

Specific Angle Values

For $\theta = 60°$: $\sin 60° = \sqrt{3}/2$, $\cos 60° = 1/2$, and $\sec 60° = 2$.

Q95. Answer: (c) 74.04%

The Correct answer is 74.04.

Key Points

• According to the 2011 Census, the literacy rate in India was 74.04%.

• The literacy rate was calculated for individuals aged 7 years and above, based on their ability to read and write in any language.

• It showed a significant improvement from the 64.83% recorded in the 2001 Census.

• India's male literacy rate was higher at 82.14%, while the female literacy rate was 65.46%, indicating a persistent gender gap in literacy.

• The state with the highest literacy rate in 2011 was Kerala at 93.91%, while the lowest was Bihar at 63.82%.

• The improvement in literacy rates has been attributed to government initiatives such as 'Sarva Shiksha Abhiyan' and 'Midday Meal Scheme', which encourage school enrollment and retention.

• Literacy is a key factor in socioeconomic development, contributing to better employment opportunities, poverty reduction, and improved quality of life.

Additional Information

• Gender Gap in Literacy

• The gender gap in literacy rates highlights disparities between male and female literacy levels.

• Efforts to bridge this gap include Beti Bachao Beti Padhao and educational scholarships for girls.

• Kerala's Literacy Success

• Kerala has consistently ranked highest in literacy due to its emphasis on universal education and a strong network of public schools.

• It also invests heavily in adult literacy programs and awareness campaigns.

• Bihar's Challenges

• Bihar faces challenges such as poverty, social inequality, and lack of infrastructure, which impact literacy rates.

• Programs focusing on adult education and skill development are being implemented to address these issues.

Q96. Answer: (c) 12

Given number: 5364178

According to the question,

Number given	**5**	**3**	**6**	**4**	**1**	**7**	**8**
Odd digit → (+1) Even digit → (-2)	(+1)	(+1)	(-2)	(-2)	(+1)	(+1)	(-2)
Resultant number	6	4	4	2	2	8	6

So, sum of the digits which are second from the left and second from the right in the new number thus formed be → 4 + 8 = 12

Hence, "Option 3" is the correct answer.

Q97. Answer: (b) To prevent any further editing of the presentation content

The Correct answer is To prevent any further editing of the presentation content.

Key Points

• The 'Save as Picture Presentation' feature in MS PowerPoint primarily converts the presentation into a series of static images, ensuring the content cannot be edited further.

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• This option is particularly useful in situations where the presentation needs to be shared securely without the risk of unauthorized modifications.

• When saved in this format, each slide is rendered as an image, and all interactive elements, animations, and transitions are removed.

• The saved file can be viewed like a regular slideshow but does not allow any editing of text, graphics, or other components.

• This format is ideal for distributing presentations in scenarios where content integrity is critical, such as official reports, client presentations, or educational materials.

• It also reduces compatibility issues across different versions of PowerPoint or other presentation software since the slides are essentially images.

Additional Information

• To optimise the presentation for viewing on low-bandwidth internet connections

• This option does not relate to the 'Save as Picture Presentation' feature. Optimization for low-bandwidth connections typically involves reducing file size or compressing media elements, which is managed through other PowerPoint settings or tools.

• To save each slide as a separate image file within a folder

• While 'Save as Picture Presentation' does convert slides into images, it does not save them as separate image files within a folder. This function is achieved using the 'Save as' feature with the image file format (e.g., JPEG or PNG).

• To embed a static image of the first slide as a preview

• This option relates to embedding a thumbnail or preview image but does not describe the 'Save as Picture Presentation' functionality.

Q98. Answer: (b) Sean Baker

The Correct answer is Sean Baker.

Key Points

• Sean Baker is a renowned American filmmaker known for his work in independent cinema.

• He has gained critical acclaim for portraying socially relevant themes and highlighting the struggles of marginalized communities in his films.

• Sean Baker is celebrated for his unique filmmaking style, which often involves non-professional actors and realistic storytelling.

• His notable works include "The Florida Project" and "Tangerine."

• The Best Director award at the 2025 Oscars recognizes Sean Baker's contribution to cinema, especially his ability to bring authenticity and emotional depth to his narratives.

• Sean Baker's direction showcases a blend of artistry and social commentary, making his films resonate with audiences worldwide.

Additional Information

• Peter Straughan

• Peter Straughan is an English screenwriter and playwright known for his work in films and television.

• He co-wrote the screenplay for "Tinker Tailor Soldier Spy", which earned him critical acclaim.

• Straughan's expertise lies in adapting novels and crafting intricate narratives.

• Steven Spielberg

• Steven Spielberg is one of the most iconic filmmakers in history, known for directing blockbuster films such as "Jurassic Park," "E.T.," and "Schindler's List."

• He has won multiple Academy Awards and is celebrated for his contributions to the Hollywood film industry.

• Spielberg's storytelling often incorporates adventure, historical events, and emotional drama.

• Quentin Tarantino

• Quentin Tarantino is an American filmmaker recognized for his distinctive style, characterized by nonlinear narratives, sharp dialogue, and graphic violence.

• His notable works include "Pulp Fiction," "Kill Bill," and "Django Unchained."

• Tarantino's films often pay homage to genres such as crime, westerns, and exploitation cinema.

Q99. Answer: (a) 125

Shortcut Trick

Recognize that the expression $64x^3 + 27y^3 + 144x^2y + 108xy^2$ is the expansion of the identity $(a + b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$.

Here, $a = 4x$ and $b = 3y$, so the expression simplifies to $(4x + 3y)^3$.

Substitute $x = 5$ and $y = -5$: $[4(5) + 3(-5)]^3 \rightarrow (20 - 15)^3$.

The final value is $5^3 = 125$.

Therefore The correct answer is 125.

Alternate Method

Given:

Expression: $64x^3 + 27y^3 + 144x^2y + 108xy^2$

Values: $x = 5, y = -5$

Formula Used:

$(a + b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$

Calculations:

$\Rightarrow 64x^3 + 27y^3 + 144x^2y + 108xy^2$

$\Rightarrow (4x)^3 + (3y)^3 + 3 \times (4x)^2 \times (3y) + 3 \times (4x) \times (3y)^2$

$\Rightarrow (4x + 3y)^3$

Now, substituting the values of x and y:

$\Rightarrow [4 \times 5 + 3 \times (-5)]^3$

$\Rightarrow [20 - 15]^3$

$\Rightarrow (5)^3$

$\Rightarrow 5 \times 5 \times 5 = 125$

Therefore The correct answer is 125.

Additional Information

Cube of a Difference

The identity for the cube of a binomial difference is $(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$.

Sum of Two Cubes

The factorization of the sum of two cubes is $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$.

Difference of Two Cubes

The factorization of the difference of two cubes is $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$.

Q100. Answer: (d) 15

Shortcut Trick

Let Anjali's age be A and Kamal's age be K.

Equation 1: $7A - 6K = 14$

Equation 2: $7K - 7A = -7 \Rightarrow 7A - 7K = 7$

Subtracting Eq 2 from Eq 1: $(7A - 6K) - (7A - 7K) = 14 - 7 \Rightarrow K = 7$ years.

Substitute K=7 in Eq 2: $7A - 7(7) = 7 \Rightarrow 7A = 56 \Rightarrow A = 8$ years.

Sum = 8 + 7 = 15 years.

Therefore The correct answer is 15 years.

Alternate Method

Given:

Condition 1: 7 × Anjali = 6 × Kamal + 14

Condition 2: 7 × Kamal = 7 × Anjali − 7

Calculations:

$\Rightarrow$ From Condition 2: $7K = 7A - 7$

$\Rightarrow$ Divide by 7: $K = A - 1 \Rightarrow A - K = 1$

$\Rightarrow$ Substitute $A = K + 1$ in Condition 1:

$\Rightarrow 7(K + 1) = 6K + 14$

$\Rightarrow 7K + 7 = 6K + 14$

$\Rightarrow 7K - 6K = 14 - 7$

$\Rightarrow K = 7$ years

$\Rightarrow A = 7 + 1 = 8$ years

$\Rightarrow$ Sum = A + K = 8 + 7 = 15 years

Therefore The correct answer is 15 years.

Additional Information

Linear Equations in Two Variables

Problems involving two people's ages usually result in two independent equations that can be solved using substitution or

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elimination methods.

Age Difference Property

The difference between the ages of two individuals remains constant regardless of the number of years passed or preceding.

Ratio of Ages

If the ratio of ages is given as x:y, we can assume ages to be ax and ay to simplify the algebraic setup.

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