RRB NTPC Graduate Level CBT-I Official Paper (Held On: 10 Jun, 2025 Shift 3) (Previous Year Paper)

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

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Q1. Which of these ports is located on the Western Coastal Plain?

(a) Cochin
(b) Paradip
(c) Visakhapatnam
(d) Chennai

Q2. Each of the digits in the number 6954381 is arranged in the descending order from left to right. Which of the following digits will be third from the right?

(a) 4
(b) 3
(c) 5
(d) 6

Q3. Due to decrease in manpower, the production in a factory decreases by 10%. By what percentage should the working hours be increased to restore the original production?

(a) 16 2/3
(b) 10%
(c) 11 1/9 %
(d) 8 1/3 %

Q4. Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 7 & 3 Ω 4 6 @ 9 # 1 * £ 5 2 & % $ 8 (Right)

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

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

Q5. Which of the following is the correct way to add a new slide in an MS-PowerPoint 2019 presentation?

(a) Press Alt + F4
(b) Go to the Home tab → Click New Slide
(c) Press Ctrl + N
(d) Right-click the slide → Select Copy

Q6. This question is based on the five, three-digit numbers given below.

(Left) 219 539 568 670 131 (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 second digit of the lowest number?

(a) -1
(b) -5
(c) -4
(d) -3

Q7. What percentage of India's population lives in urban areas according to the 2011 Census?

(a) 34.78%
(b) 32.30%
(c) 33.50%
(d) 31.16%

Q8. 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) GH - EF
(b) MH - IP
(c) PQ - NO
(d) KL - IJ

Q9. Who among the following was the President of the Board of Control at the time of Charter renewal in 1793 in India?

(a) Henry Dundas
(b) William Grenville
(c) George Legge
(d) Thomas Townshend

Q10. The Singh Sabha movement is associated with which community?

(a) Hindu
(b) Sikh
(c) Parsi
(d) Muslim

Q11. AB is parallel to CD. A transversal PQ intersects AB and CD at E and F, respectively, and angle PEB = 42°. G is a point between AB and CD such that angle BEG = 21° and angle GFE = 34°. What is the measure of angle EGF?

(a) 29°
(b) 24°
(c) 20°
(d) 33°

Q12. In a certain code language,

A + B means ‘A is the mother of B’,
A − B means ‘A is the brother of B’,
A × B means ‘A is the wife of B’ and
A ÷ B means ‘A is the father of B’.
How is M related to Q if ‘M − N + O × P ÷ Q’?

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

Q13. What is the mean of the following distribution?

Marks	**19**	**31**	**54**	**69**	**95**
No. of Students	22	35	64	34	57

(a) 82

(b) 63
(c) 49
(d) 60

Q14. Which of the following numbers is divisible by both 27 and 19?
(a) 33488
(b) 35691
(c) 34962
(d) 34371

Q15. According to the forest department and WWF-India, which tiger reserve recorded a rise in the population of greater one-horned rhinos, with the number climbing from 46 in 2023 to 51 in 2025?
(a) Similipal National Park
(b) Kanha National Park
(c) Dudhwa National Park
(d) Panna National Park

Q16. Which Article of the Constitution of India prohibits Indian citizens from accepting any title from a foreign state?
(a) Article 18
(b) Article 15
(c) Article 17
(d) Article 16

Q17. "A man has to cover a distance of 222 km in 14 hours. If he covers two-third of this distance in 3/7 of the time, then what should his speed (in km/hr) be to cover the remaining distance?"
(a) 9.25
(b) 3.75
(c) 21.3
(d) 12.3

Q18. If 'P' stands for '÷', 'Q' stands for '×', 'R' stands for '+' and 'S' stands for '−', then the resultant of which of the following would be 182?
(a) 96 P 16 S 112 R 48 Q 6
(b) 96 Q 16 R 112 S 48 P 6
(c) 96 S 16 P 112 Q 48 R 6
(d) 96 R 16 Q 112 P 48 S 6

Q19. In the 2024 Supreme Court case 'Aligarh Muslim University vs Naresh Agarwal (November 2024)', what did the majority of the Court hold regarding the minority status of educational institutions?
(a) An institution must be entirely managed by the minority community to qualify as a minority institution.
(b) Institutions created before 1950 can still be considered minority institutions, even if incorporated by statute.
(c) Educational institutions established by statute cannot be considered minority institutions under Article 30(1).
(d) The majority of the judges (4 out of 7 in opinion) of the bench concluded the Azeez Basha case and violated the AMU's minority status.

Q20. DTUH is related to BQWK in a certain way based on the English alphabetical order. In the same way, ZNYN is related to XKAQ. To which of the given options is VHCT related, following the same logic?
(a) SEDX
(b) UDFX
(c) TEEW
(d) SFEV

Q21. Eight people, A, B, C, D, E, F, G and H, are sitting is a straight line facing south. B is sitting at one of the ends of the line. G is sitting to the immediate left of C. A is sitting to the immediate left of H and immediate right of C. Only 3 people are sitting to the right of E. D is sitting to the immediate left of B. Who is sitting to the immediate left of D?
(a) H

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(b) E
(c) F
(d) C

Q22. When x is added to each of 29, 31, 7 and 8, then the numbers so obtained, in this order, are in proportion. Then, if 5x : y :: y : (2x-3), and y > 0, what is the value of y?
(a) 45
(b) 35
(c) 29
(d) 56

Q23. A can do a piece of work in 63 hours, B and C together can do it in 42 hours, while A and C together can do it in 27 hours. How long (in hours) will B alone take to do it?
(a) 380
(b) 379
(c) 377
(d) 378

Q24. When 1272, 2636 and 4209 are divided by the greatest number x, the remainder in each case is y. What is the value of (3x − 14y)?
(a) -63
(b) -65
(c) -61
(d) -60

Q25. By how much did urban infrastructure investments increase from Fiscal Year 2019 to Fiscal Year 2023?
(a) 5%
(b) 3%
(c) 8%
(d) 10%

Q26. Simplify: 93/28 x (70 + 42) + 82
(a) 464
(b) 459
(c) 454
(d) 458

Q27. Town M is to the north of Town N. Town N is to the east of Town O. Town O is to the west of Town P. Town P is to the south of Town Q. Town M is to the south-west of Town Q. What is the position of Town N with respect to Town P?
(a) East
(b) North
(c) West
(d) South

Q28. Find the value of m for which it satisfies $(11/2)^{12} \times (2/11)^2 \times (11/2)^{(16)} = (2/11)^{(9m+9)}$
(a) • 37/9
(b) • 43/9
(c) • 35/9
(d) • 38/9

Q29. The average weight (in kg) of a family of five members whose weights are 40 kg, 49 kg, 56 kg, 63 kg and 37 kg is:
(a) 48
(b) 49
(c) 50
(d) 51

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Q30. A group of numbers and symbols is coded using letter codes as per the codes given below and the conditions that follow. Study the given codes and conditions and answer the question that follows.

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

Letter	F	T	E	P	A	U	X	R
Code	7	$	@	9	2	%	6	4

Conditions:

1. If the 1^st letter is a vowel and the last letter is a consonant, their codes are to be interchanged.
2. If the 2^(nd) letter is a vowel and the last letter is a consonant, both are to be coded as ‘W’.
3. If the 3^(rd) and 4^(th) letters are consonants, both are to be coded as the code for the 3rd letter.
4. If the 1^(st) and 2^(nd) letters are vowels, then both are to be coded as ‘Q’.

What will be the code for the following group?

TAEX

(a) $ 2 2 6
(b) $ 2 @ 6
(c) $ @ @ 6
(d) $ W @ W

Q31. Seven boxes, A, B, C, D, E, F and G, are kept one above the other but not necessarily in the same order. Only B is kept above G. Only C is kept between G and E. Only A is kept below D. How many boxes are kept below E?

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

Q32. On selling a bed at Rs. 8,845, the value of gain is 25% more than the value of loss incurred on selling it at Rs. 1,987. In order to gain 20%, find the selling price (in Rs.).

(a) 6,042
(b) 6,039
(c) 6,044
(d) 6,043

Q33. What was the vote percentage and number of seats secured by the winning party in the 2024 Haryana Legislative Assembly elections?

(a) 39.94% votes, 48 seats
(b) 44.85% votes, 52 seats
(c) 36.49% votes, 48 seats
(d) 42.10% votes, 50 seats

Q34. According to Global Debt Report 2025, what is the projected sovereign bond issuance in OECD countries for 2025?

(a) $10 trillion
(b) $13 trillion
(c) $15 trillion
(d) $17 trillion

Q35. If a transversal line intersects a pair of two parallel lines, then each pair of corresponding angles are:

(a) complementary
(b) unequal
(c) equal
(d) supplementary

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Q36. To which regional language's literature did Girish Karnad contribute most through his works?

(a) Malayalam
(b) Telugu
(c) Tamil
(d) Kannada

Q37. TK 14 is related to YH 5 in a certain way. In the same way, MN 5 is related to RK −4. To which of the given options is SV 0 related, following the same logic?

(a) PR −13
(b) XT −11
(c) XS −9
(d) WV −7

Q38. Who discovered the Maski Ashoka Inscription?

(a) James Prinsep
(b) C Beadon
(c) Lord Canning
(d) Christian Lassen

Q39. In the Harappan civilisation, cire perdue or lost wax process was used to make statue of which material?

(a) Gold
(b) Stone
(c) Terracotta
(d) Bronze

Q40. If 10 : A :: A : 40, find the positive value of A.

(a) 20
(b) 21
(c) 23
(d) 18

Q41. Vimal ranked 19^(th) from the top and 24^(th) from the bottom in his class. How many students are there in his class?

(a) 40
(b) 42
(c) 43
(d) 41

Q42. If 3 times the brother's present age is 25 years more than 5 times her sister's age, and 5 times the sister's age is 5 years less than the brother's age, then what is the difference (in years) between the present ages of the brother and the sister?

(a) 12
(b) 10
(c) 8
(d) 9

Q43. By selling an article for Rs. 112, a man loses 25%. At what price (in Rs.) should he sell it to gain 50%?

(a) 244
(b) 224
(c) 214
(d) 234

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Q44. If cos α = 3/5 and cos β = 15/17, then the value of sin (α + β)

(a) 36/85
(b) 84/85
(c) 77/85
(d) 15/85

Q45. The area of a square is 2304 cm². Its perimeter is equal to the perimeter of a regular hexagon. what is the are (in cm²) of the hexagon?

(a) 1582 √3
(b) 1494
(c) 1536 √3
(d) 1510

Q46. Find the simple interest (in Rs.) if a sum of Rs. 350 is borrowed for 2.5 years at 4% per annum rate of interest.

(a) 15
(b) 85
(c) 135
(d) 35

Q47. What should come in place of the question mark (?) in the given series based on the English alphabetical order?
EBY XUR QNK JGD ?

(a) CWZ
(b) CZW
(c) WZC
(d) WCZ

Q48. The Bhagirathi and Alaknanda join to form the Ganga at _____.

(a) Haridwar
(b) Devprayag
(c) Rudraprayag
(d) Rishikesh

Q49. In January 2025, who was honoured with the Maharaja Hari Singh Award for administrative reforms in Jammu and Kashmir?

(a) Manoj Sinha
(b) Girish Chandra Murmu
(c) Rajnath Singh
(d) Satya Pal Malik

Q50. Which of the following is the highest point of the Satpura Range?

(a) Dhupgarh
(b) Mount Abu
(c) Parasnath
(d) Anai Mudi

Q51. What is the significance of the NVS-02 satellite launched in 2025?

(a) It will enhance India's regional navigation capabilities.
(b) It will conduct scientific experiments in space.
(c) It will provide weather forecasting services.
(d) It will provide communication services to rural areas.

Q52. In India, what are municipalities primarily responsible for?

(a) Managing defense-related municipal activities
(b) Controlling all ports in India
(c) Conducting national elections

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(d) Administration of small cities or towns

Q53. According to the induced-fit model of enzyme action, substrate binding _____.

(a) inhibits the enzyme by permanently altering its structure
(b) induces a conformational change that optimises the active site for catalysis
(c) occurs without any change to the enzyme's active site
(d) leads to immediate release of the substrate without transformation

Q54. The population of a village was 1,00,000. It increased by 5% in the first year and increased by 20% in the second year. Its population after two years is _____.

(a) 1,25,000
(b) 1,05,000
(c) 1,20,000
(d) 1,26,000

Q55. Oil and fat containing food items are flushed with nitrogen because it:

(a) Removes hydrogen from the packaging
(b) Enhances the flavour of the product
(c) Adds nutritional value to the product
(d) Removes oxygen from the packaging

Q56. Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) © 2 © # * 6 € 4 5 3 € 1 1 € 6 7 # 7 4 £ 6 € (Right)

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

(a) 1
(b) 2
(c) 3
(d) 0

Q57. 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:

Some nuts are black.

All black are crows.

All crows are pens.

Conclusions:

(I) All nuts are black.

(II) Some black are crows.

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

Q58. Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

KN33 JM41 IL49 HK57 ?

(a) GI66
(b) GI65
(c) GJ65
(d) GJ66

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Q59. Which of the following statements about the Exercise KHANJAR-XII, conducted in March 2025 is/are correct?

1. The exercise was held in the Ladakh region.
2. The exercise was focused on Counter Terrorism and Special Forces operations.
3. The exercise involved troops from The Parachute Regiment (Special Forces) of India and Kyrgyz Scorpion Brigade.

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

Q60. Which of the following acts provided a regular code of all regulations that could be enacted for the internal Government of British India?

(a) Charter Act of 1813
(b) Pitt's India Act 1784
(c) Charter Act of 1793
(d) Regulating Act 1773

Q61. The ratio of incomes of Seema and Darshan is 4 : 3. They save Rs. 15,000 and Rs. 9,000, respectively. If the ratio of their expenditures is 16 : 17, then what is the total expenditure (in Rs.) of Seema and Darshan?

(a) 14,850
(b) 13,000
(c) 15,000
(d) 16,000

Q62. The British used education as a tool to _____.

(a) expand Indian trade
(b) strengthen colonial rule
(c) reform Indian society
(d) support women empowerment

Q63. In which year did Francois Martin establish Pondicherry, which later emerged as the Headquarters of the French in India?

(a) 1794
(b) 1674
(c) 1762
(d) 1612

Q64. The area of the base of a right circular cone is 3136 π cm^2 and its slant height is 65 cm. The curved surface area of the cone (in cm^2) is:

(a) 3065π
(b) 3640π
(c) 3500π
(d) 3460π

Q65. What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

121 ÷ 6 + 384 × 3 − 31 =?

(a) 626
(b) 629
(c) 623
(d) 621

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Q66. The median of the observations 71, 95, 67, 55, 78, 45, 58, 44, 69, 41 and 88 is:

(a) 69
(b) 67
(c) 55
(d) 58

Q67. What is the approximate total length of the Northern Plains (from West to East)?

(a) 2,400 km
(b) 2,000 km
(c) 1,500 km
(d) 1,200 km

Q68. Which of the following forests are predominantly found in areas receiving annual rainfall between 100 cm and 200 cm in India?

(a) Thorn forests
(b) Tropical evergreen forests
(c) Alpine forests
(d) Tropical deciduous forests

Q69. Write the expanded form of $(7a + 6b + 4c)^2$.

(a) $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 66ac$
(b) $49a^2 + 36b^2 + 16c^2 + 88ab + 48bc + 56ac$
(c) $49a^2 + 36b^2 + 16c^2 + 84ab + 43bc + 56ac$
(d) $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 56ac$

Q70. The difference between the simple interest and the compound interest, compounded annually, on a certain sum of money for 2 years at 10% per annum is Rs. 407. Find the sum [rounded off to the nearest integer].

(a) Rs. 40,698
(b) Rs. 40,719
(c) Rs. 40,680
(d) Rs. 40,700

Q71. Which country held a presidential runoff election on 13 April 2025, resulting in the re election of President Daniel Noboa?

(a) Peru
(b) Ecuador
(c) Colombia
(d) Bolivia

Q72. Udyami Bharat, MUDRA Yojana, Emergency Credit Line Guarantee Scheme, SFURTI and RAMP schemes are associated with the development of which sector?

(a) Micro, small, medium enterprises
(b) Drugs and pharmaceuticals industry
(c) Iron and steel industries
(d) Mining sector

Q73. Two pipes can fill a cistern, individually, in 44 min and 84 min, respectively. There is a pipe located at the bottom of the cistern to empty it. If all the three pipes are opened simultaneously, then the empty cistern gets filled in 28 min. How long will the pipe at the bottom of the cistern take to empty the completely filled cistern if no other pipe is then open?

(a) 921 min
(b) 916 min
(c) 920 min
(d) 924 min

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Q74. When working with text wrapping around an image in MS Word, which 'Layout Option' provides the most flexibility in precisely positioning the image relative to the text and other elements, ignoring the text flow?

(a) Behind Text or In Front of Text
(b) Tight
(c) Through
(d) Square

Q75. EUQF is related to BPNA in a certain way based on the English alphabetical order. In the same way, YKKV is related to VFHQ. To which of the given options is SAEL related, following the same logic?

(a) QWCH
(b) PVBG
(c) QUVH
(d) OVAG

Q76. The marked price of a bed is Rs. 568, which is 26% above the cost price. If the profit percentage is 13%. Find the discount percentage (rounded off to two decimal places).

(a) 13.33%
(b) 10.93%
(c) 10.32%
(d) 8.98%

Q77. Select the number from among the given options that can replace the question mark (?) in the following series.

22 25.1 28.2 31.3 ? 37.5

(a) 34.4
(b) 34.1
(c) 33.5
(d) 32.4

Q78. In March 2025, which national day or week emphasised industrial workplace safety?

(a) Safety and Labour Day
(b) Industrial Safety Day
(c) Bharat Suraksha Week
(d) National Safety Week

Q79. A group of numbers and symbols is coded using letter codes as per the codes given below and the conditions that follow. Study the given codes and conditions and answer the question that follows.

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	**6**	**@**	**8**	**5**	**$**	**&**	**3**	**%**	**#**	**7**	**•**	**9**	**4**	**2**
Code	F	G	H	N	L	K	C	Q	Z	P	R	B	U	E

Conditions:

If the first element is a symbol and the last a number, the codes for these two (the first and the last elements) are to be interchanged.

If the first element is an odd number and the last an even number, the first and last elements are to be coded as ©.

If both second and third elements are perfect squares, the third element is to be coded as the code for the second element. What will be the code for the following group?

5 3 + 4

(a) U C R N
(b) N C R U
(c) N R C U
(d) © C R ©

Q80. M, N, O, P, Y and Z live on six different floors of the same building. The lowermost floor in the building is numbered 1, the floor above it, number 2 and so on till the topmost floor is numbered 6. Only two people live between N and P. Only two people live between Z and O. No one lives above Z. P lives below O but above Y. How many people lives below M?

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

Q81. Seven people, I, J, K, L, O, P and Q are sitting in a row, facing north. Only two people sit between Q and O. Only I sits to the right of P. Only one person sits between O and P. K sits at some place to the right of L but at some place to the left of J. How many people sit between J and L?

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

Q82. Who was the head of the Kayastha community?

(a) Prathamakulika
(b) Uparika
(c) Pustapala
(d) Prathamakayastha

Q83. Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of ::?

: IFL :: KHN : %

(a) = CJS, % = KJI
(b) = LPG, % = NUY
(c) = DAG, % = PMS
(d) = KHY, % = NHU

Q84. What is a major drawback of the parliamentary system in terms of governance stability?

(a) Elections are held only once every decade.
(b) The President can dismiss the Prime Minister at any time.
(c) The judiciary frequently overrules executive decisions
(d) Governments may collapse due to no-confidence motions or coalition disputes

Q85. 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.)

(32, 47, 15)

(56, 81, 25)

(a) (17, 72, 14)
(b) (92, 110, 18)
(c) (29, 84, 10)
(d) (18, 65, 11)

Q86. Mr. Q starts from Point Z and drives 7 km towards the north. He then takes a left turn, drives 9 km, turns right and drives 6 km. He then takes a left turn and drives 7 km. He takes a final left turn, drives 13 km and stops at Point A. How far (shortest distance) and towards which direction should he drive in order to reach Point Z again? (All turns are 90 degree turns only unless specified.)

(a) 11 km towards the south
(b) 13 km towards the north
(c) 14 km towards the west

(d) 16 km towards the east

Q87. According to February 2025 data, how many Khelo India Athletes were included in India's Paris 2024 Olympics contingent?

(a) 38
(b) 35
(c) 28
(d) 31

Q88. Which statistical indicator is used to measure the depth of poverty by accounting for the extent to which individuals fall below the poverty line?

(a) Gini Coefficient
(b) Poverty Gap Index
(c) Dependency Ratio
(d) Headcount Ratio

Q89. What should come in place of the question mark (?) in the given series?

301 300 297 292 285 ?

(a) 273
(b) 276
(c) 275
(d) 277

Q90. The average of nine numbers is 17. The average of seven of these numbers is 17. The average of the remaining two numbers is:

(a) 19
(b) 18
(c) 17
(d) 16

Q91. What is the shortcut to open an MS PowerPoint file directly from the application?

(a) Ctrl + N
(b) Ctrl + P
(c) Ctrl + S
(d) Ctrl + O

Q92. Two quadratic equations, $2x^2 + 8x + 6 = 0$ and $kx^2 + 4kx + 3 = 0$, have both roots common. What is the value of k?

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

Q93. How many naturally occurring elements did the periodic law originally reveal analogies among?

(a) 96
(b) 91
(c) 94
(d) 89

Q94. If you move text using 'Cut and Paste', where does the text go before being pasted in MS Office?

(a) Stored in a temporary document
(b) Disappears permanently until pasted
(c) To the Recycle Bin
(d) To the Clipboard

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Q95. In a certain code language, 'HUNT' is coded as '3517' and 'TIME' is coded as '2458'. What is the code for 'T' in the given code language?

(a) 5
(b) 8
(c) 2
(d) 7

Q96. If + means −, − means ×, × means ÷, and ÷ means +, what will come in place of the question mark (?) in the following equation?

20 – 4 ÷ 7 + 12 × 4 = ?

(a) 75
(b) 80
(c) 90
(d) 84

Q97. 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) QR−TU
(b) DE−GH
(c) FG−HL
(d) WX−ZA

Q98. A boat takes 83 minutes to go 33.2 km upstream. The ratio of the speed of the boat in still water to that of the stream is 8 : 5. How much total time (in hours) will the boat take to go 47.1 km upstream and 55.9 km downstream?

(a) 2.5
(b) 1.5
(c) 3.5
(d) 6.8

Q99. Which function key can be used with Alt to close the current application in Windows applications?

(a) F1
(b) F6
(c) F10
(d) F4

Q100. Which two leaders co-chaired the AI Action Summit in Paris in February 2025?

(a) Joe Biden and Emmanuel Macron
(b) Emmanuel Macron and Narendra Modi
(c) Rishi Sunak and Narendra Modi
(d) Olaf Scholz and Xi Jinping

ANSWER KEY

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

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81	a	82	d	83	c	84	d	85	b	86	d	87	c	88	b	89	b	90	c
91	d	92	d	93	c	94	d	95	a	96	d	97	c	98	a	99	d	100	b

SOLUTIONS

Q1. Answer: (a) Cochin

The correct answer is Cochin.

Key Points

• Cochin (Kochi) is located on the Western Coastal Plain of India in the state of Kerala.

• It is one of the major ports on the Malabar Coast, which is part of the western coast of India.

• The port is strategically important for trade and is known for its natural harbor.

• Cochin has historically been a hub for spice trade and is referred to as the "Queen of the Arabian Sea."

• The Western Coastal Plain spans Gujarat, Maharashtra, Goa, Karnataka, and Kerala, and Cochin is a significant port in this region.

Additional Information

• Western Coastal Plain:

• It is a narrow strip of land between the Western Ghats and the Arabian Sea.

• The plain includes regions such as the Malabar Coast, Konkan Coast, and Gujarat Coast.

• The Western Coastal Plain is characterized by lagoons, estuaries, and backwaters.

• Important rivers such as Narmada, Tapi, Mandovi, and Periyar flow through this region.

• Natural Harbors in India:

• A natural harbor is a water body protected from waves and currents, making it suitable for docking ships.

• India has several natural harbors, including Cochin, Mumbai, and Marmagao.

• Cochin Port:

• It is one of the largest ports in India and handles bulk cargo, including spices, tea, and seafood.

• Cochin Port is also a gateway for international trade and tourism in the region.

• The port has modern facilities for container handling and cargo transportation.

• Paradip, Visakhapatnam, and Chennai Ports:

• Paradip is located in Odisha on the eastern coast of India.

• Visakhapatnam is a major port in Andhra Pradesh along the eastern coastal plain.

• Chennai is situated on the eastern coast in Tamil Nadu and is also known as a hub for trade and commerce.

Q2. Answer: (a) 4

Given number: '6954381'

After arranging the digits in descending order:

Original	6	9	5	4	3	8	1
Descending	9	8	6	5	4	3	1

The number formed after arranging the digits in descending order is: 9865431

The third digit from the right is: 4

Hence, the correct answer is "Option 1".

Q3. Answer: (c) 11 1/9 %

Shortcut Trick

When a value decreases by R%, the required percentage increase to restore the original value is given by the formula:

Required Increase % = [R ÷ (100 − R)] × 100

Here, the decrease in manpower R = 10%.

=> Required Increase = [10 ÷ (100 − 10)] × 100

=> (10 ÷ 90) × 100 = 100 ÷ 9 = 11 ¹/9%

Therefore The correct answer is 11 ¹/9%.

Alternate Method

Given:

Decrease in manpower and subsequent production = 10%

100

Original

90

Decreased

−10%

• Increase %

Required Increase = 10 ÷ 90 × 100

Calculations:

=> Let the original production be 100 units based on the initial manpower and working hours.

=> Due to a 10% decrease in manpower, the new production drops to 100 − 10 = 90 units.

=> To restore the original production (100 units) with the current reduced manpower, the working hours must compensate for the 10-unit deficit.

=> The required increase must be calculated on the new production base (90 units).

=> Required percentage increase = (Increase ÷ New Base) × 100

=> Required percentage increase = (10 ÷ 90) × 100

=> Required percentage increase = 100 ÷ 9 = 11 ¹/9%

Therefore The correct answer is 11 ¹/9%.

Additional Information

Product Constancy Rule (A × B = Constant)

When the product of two variables is constant (e.g., Manpower × Working Hours = Total Production), an increase of 1/x in one variable requires a decrease of 1/(x+1) in the other to maintain the product. Conversely, a decrease of 1/x requires an increase of 1/(x−1).

Base Change Concept in Percentage

If Quantity A is R% less than Quantity B, then B is [R ÷ (100 − R)] × 100% more than A. This happens because the reference base changes from B to A.

Q4. Answer: (d) Two

Given series:

7 & 3 Ω 4 6 @ 9 # 1 * £ 5 2 & % $ 8

Condition to be checked:

A symbol that is immediately preceded by a number and immediately followed by another symbol.

Number → Symbol → Symbol

Let's analyze the series:

7 & 3 Ω 4 6 @ 9 # 1 * £ 5 2 & % $ 8

Thus there are two such patterns (1 * £, 2 & %) that are following the above conditions.

Hence, the correct answer is "Option 4".

Mistake Points

Immediately preceded by means immediately before or to come just before.

Immediately followed by means immediately after or to come just after.

Q5. Answer: (b) Go to the Home tab → Click New Slide

The correct answer is Go to the Home tab → Click New Slide.

Key Points

• In MS-PowerPoint 2019, adding a new slide is performed by navigating to the Home tab on the ribbon.

• Under the Home tab, users can click on the New Slide option in the Slides group to insert a new slide.

• The New Slide button provides a drop-down menu to select various slide layouts while creating a slide.

• Keyboard shortcuts like Ctrl + M can also be used to quickly add a new slide without navigating through the ribbon.

• This method ensures a seamless workflow for creating and customizing presentations in PowerPoint.

Additional Information

• Slide Layouts:

• Slide layouts define the structure and arrangement of content on a slide.

• Common layouts include Title Slide, Content Slide, Two Content Slide, and Blank Slide.

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• Users can customize layouts to suit presentation requirements.
• Ribbon Interface:
• The Ribbon in MS-PowerPoint is divided into tabs like Home, Insert, Design, Transitions, and others.
• Each tab contains grouped tools for specific tasks, such as adding slides, editing text, or applying themes.
• Keyboard Shortcuts in PowerPoint:
• Ctrl + M: Add a new slide.
• Ctrl + N: Create a new presentation.
• Alt + F4: Close the application window.
• Slide Master:
• Slide Master allows users to control the design and layout of slides universally across a presentation.
• Changes made in Slide Master will reflect on all slides using the same layout.
• PowerPoint Versions:
• PowerPoint 2019 is part of the Office 2019 suite, offering enhanced features like Morph transitions and Zoom for presentations.
• It is compatible with Windows 10 and macOS.

Q6. Answer: (c) -4

Given numbers: 219 539 568 670 131

Highest number: 670

Second digit of the highest number (670): 7

Lowest number: 131

Second digit of the lowest number (131): 3

Resultant if the second digit of the highest number is subtracted from the second digit of the lowest number:

→ 3 - 7 = -4.

The correct answer is "-4".

Hence, the correct answer is "Option 3".

Q7. Answer: (d) 31.16%

The correct answer is 31.16%.

Key Points

• According to the 2011 Census, 31.16% of India's population lived in urban areas, reflecting an increase from 27.81% in the 2001 Census.
• The total urban population of India as per the 2011 Census was approximately 377 million.
• The urban population growth is primarily attributed to factors such as migration, natural increase, and expansion of urban boundaries.
• The Census of India is conducted every 10 years by the Office of the Registrar General and Census Commissioner under the Ministry of Home Affairs.
• The 2011 Census classified areas as urban based on parameters such as population density, percentage of non-agricultural workers, and availability of civic amenities.

Additional Information

• Census Terminologies:
• Urban Agglomeration: A continuous urban spread comprising a town and its adjoining urban outgrowths or multiple towns.
• Urban Area: Defined based on population size (≥5000), density (≥400 persons per sq km), and ≥75% male non-agricultural workers.
• Rural Area: Any area not classified as urban, typically characterized by low population density and reliance on agriculture.
• India's Urbanization Trends:
• India's urban population increased from 27.81% in 2001 to 31.16% in 2011, indicating a steady growth in urbanization.
• Urbanization is driven by factors like industrialization, infrastructure development, and rural-urban migration.
• By 2030, India is projected to have 40% of its population living in urban areas.
• Key Challenges of Urbanization:
• Rapid urbanization leads to issues such as housing shortages, traffic congestion, and strain on infrastructure and public services.
• Environmental concerns, like air and water pollution, are exacerbated in densely populated urban areas.
• Government Initiatives for Urban Development:

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• Smart Cities Mission: Aims to promote sustainable and inclusive urban development across 100 cities.

• AMRUT (Atal Mission for Rejuvenation and Urban Transformation): Focuses on infrastructure development in smaller cities and towns.

• PMAY (Pradhan Mantri Awas Yojana): Targets affordable housing for urban poor.

Q8. Answer: (b) MH - IP

The logic followed here is.

Option (1) 'GH - EF':

Option (2) 'MH - IP':

Does not follow the same logic.

Option (3) 'PQ - NO':

Option (4) 'KL - IJ':

Hence, the correct answer is "Option 2".

Q9. Answer: (a) Henry Dundas

The correct answer is Henry Dundas.

Key Points

• Henry Dundas served as the President of the Board of Control during the Charter renewal of 1793 in India.

• The Board of Control was established under the Pitt's India Act of 1784 to oversee the affairs of the East India Company.

• The Charter Act of 1793 extended the East India Company's monopoly on trade and emphasized its governance role in India.

• Henry Dundas played a significant role in shaping British policy in India during his tenure.

• He was a prominent British statesman and a close ally of Prime Minister William Pitt the Younger.

Additional Information

• Pitt's India Act (1784):

• It established the Board of Control to supervise civil, military, and revenue affairs of the East India Company.

• The Act aimed to address administrative inefficiencies and corruption in the company's governance of India.

• Charter Act of 1793:

• It renewed the East India Company's charter for 20 years.

• The act reinforced the company's monopoly on trade and its administrative control over British territories in India.

• It provided salaries for the members of the Board of Control from Indian revenues.

• Henry Dundas:

• Dundas was a key figure in British politics, known for his influence in colonial administration.

• He held the title of 1st Viscount Melville and was instrumental in shaping British imperial policy.

• East India Company:

• Founded in 1600, it was initially a trading company but later became a governing authority in India.

• Its governance practices were subject to British parliamentary oversight after the Pitt's India Act.

Q10. Answer: (b) Sikh

The correct answer is Sikh.

Key Points

• The Singh Sabha Movement was a reform movement among Sikhs in the late 19th and early 20th centuries, initiated to revive Sikhism's distinct identity and religious practices.

• It began in Amritsar in 1873 and later expanded to Lahore, forming the Lahore Singh Sabha in 1879.

• The movement sought to counter the influence of Christianity, Hindu reform movements, and western ideologies on Sikh practices and traditions.

• It emphasized the promotion of Sikh education, the Gurmukhi script, and the teachings of Guru Granth Sahib while opposing superstitions and rituals that deviated from core Sikh principles.

• The Singh Sabha was instrumental in the establishment of institutions like the Khalsa College in Amritsar and in publishing Sikh literature to spread awareness about Sikh history and values.

Additional Information

• Key Objectives of the Movement:

• To restore Sikhism to its original form by eliminating practices like idol worship and caste discrimination that had crept into the community.

• To assert the unique identity of Sikhs as distinct from Hindus and Muslims.

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• Impact on Education:

• The movement led to the establishment of modern educational institutions, such as Khalsa Schools and Colleges, to educate Sikhs in both religious and secular fields.

• It played a crucial role in encouraging women's education within the Sikh community.

• Role of Key Leaders:

• Prominent leaders like Bhai Gurmukh Singh, Baba Khem Singh Bedi, and Professor Gurmukh Singh spearheaded the movement.

• They worked on translating Sikh scriptures and historical texts into accessible languages to disseminate Sikh teachings widely.

• Legacy of the Singh Sabha Movement:

• The movement laid the foundation for the Gurdwara Reform Movement in the early 20th century, which ultimately led to the establishment of the Shiromani Gurdwara Parbandhak Committee (SGPC).

• It remains a pivotal chapter in the history of Sikhism, reinforcing its distinct religious and cultural identity.

Q11. Answer: (a) 29°

Shortcut Trick

Calculate the interior angle angle FEG = 180° − angle PEB − angle BEG = 180° − 42° − 21° = 117°.

In triangle EGF, the sum of angles is 180°.

Therefore angle EGF = 180° − (angle FEG + angle GFE) = 180° − (117° + 34°) = 29°.

Therefore The correct answer is 29°.

Alternate Method

Given:

Parallel lines: AB || CD

Transversal: PQ intersects AB at E and CD at F

Angles: angle PEB = 42°, angle BEG = 21°, angle GFE = 34°

Formula Used:

1. Linear Pair Axiom: Sum of angles on a straight line is 180°.

2. Angle Sum Property: Sum of interior angles of a triangle is 180°.

Calculations:

=> Since PQ is a straight line, angle PEB + angle BEF = 180° (Linear Pair)

=> 42° + angle BEF = 180°

=> angle BEF = 180° − 42° = 138°

=> Now, angle BEF = angle BEG + angle FEG

=> 138° = 21° + angle FEG

=> angle FEG = 138° − 21° = 117°

=> In triangle EGF, by Angle Sum Property:

=> angle FEG + angle GFE + angle EGF = 180°

=> 117° + 34° + angle EGF = 180°

=> 151° + angle EGF = 180°

=> angle EGF = 180° − 151° = 29°

Therefore The correct answer is 29°.

Additional Information

Parallel Lines and Transversals

When two parallel lines are intersected by a transversal, corresponding angles are equal, and alternate interior angles are equal.

Consecutive Interior Angles

The sum of consecutive interior angles on the same side of a transversal is always 180°.

Exterior Angle Theorem

The exterior angle of a triangle is equal to the sum of the two opposite interior angles.

Q12. Answer: (a) Mother's mother's brother

A is				
Symbol	•	–	×	÷
Meaning	Mother	Brother	Wife	Father

of B			

Given Expression: M – N + O × P ÷ Q

M – N: M is the brother of N.

N + O: N is the mother of O.

O × P: O is the wife of P.

P ÷ Q: P is the father of Q.

According to the given information Family Tree Representation:

Relationship between M and Q: Q's father is P. P's wife is O. O's mother is N. N's brother is M.

Therefore, M is Mother's mother's brother of Q.

Hence, the correct answer is "Option 1"

Q13. Answer: (d) 60

Shortcut Trick

Assume Mean (A) = 54.

Calculate deviations (d) from 54: −35, −23, 0, 15, 41.

Net deviation Σfd = (22 × −35) + (35 × −23) + (64 × 0) + (34 × 15) + (57 × 41) = 1272.

Mean = A + (Σfd ÷ Σf) = 54 + (1272 ÷ 212) = 54 + 6 = 60.

Therefore The correct answer is 60.

Alternate Method

Given: Marks (x) and Number of Students (f).

Formula: Mean (μ) = $\Sigma f_i x_i \div \Sigma f_i$

=> Total Students (Σf) = 22 + 35 + 64 + 34 + 57 = 212

=> Sum of Products (Σfx) = (19 × 22) + (31 × 35) + (54 × 64) + (69 × 34) + (95 × 57)

=> Σfx = 418 + 1085 + 3456 + 2346 + 5415 = 12720

=> Mean = 12720 ÷ 212 = 60

Therefore The correct answer is 60.

Q14. Answer: (d) 34371

Shortcut Trick

To be divisible by 27, a number must be divisible by 9 (Sum of digits divisible by 9).

Checking sum of digits for 34371: 3 + 4 + 3 + 7 + 1 = 18 (Divisible by 9 and 27).

Divide 34371 by 19: 34371 ÷ 19 = 1809 (Exact integer).

Therefore The correct answer is 34371.

Alternate Method

Given: Divisors are 27 and 19. We need to find the number divisible by their LCM.

Formula: Since 27 and 19 are co-prime (HCF = 1), LCM = 27 × 19.

=> LCM = 27 × 19 = 513.

=> We check each option for divisibility by 513.

=> 34371 ÷ 513 = 67.

=> 33488 ÷ 513 ≈ 65.27

=> 35691 ÷ 513 ≈ 69.57

=> 34962 ÷ 513 ≈ 68.15

Therefore The correct answer is 34371.

Additional Information

Divisibility by 27

A number is divisible by 27 if the sum of its digits in blocks of three from right to left is divisible by 27.

Divisibility by 19

Add twice the last digit to the remaining number. If the result is divisible by 19, the original number is also divisible.

Co-prime Numbers

If two numbers are co-prime, any number divisible by both must be divisible by their product.

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Q15. Answer: (c) Dudhwa National Park

The correct answer is Dudhwa National Park.

Key Points

• Dudhwa National Park, situated in Uttar Pradesh, is part of the Dudhwa Tiger Reserve and is known for its rich biodiversity.

• The population of the greater one-horned rhinoceros in Dudhwa National Park increased from 46 in 2023 to 51 in 2025, as recorded by the forest department and WWF-India.

• The greater one-horned rhinoceros is listed as vulnerable on the IUCN Red List and is a key species for conservation efforts in India.

• Dudhwa National Park is one of the few places in India where successful rhino conservation programs are being implemented, including strict anti-poaching measures.

• The park's protected habitat includes grasslands, swamps, and forests, which provide an ideal environment for the rhinoceros population to thrive.

Additional Information

• Greater One-Horned Rhinoceros:

• Also known as the Indian rhinoceros, it is the largest of the three Asian rhinoceros species.

• This species is found primarily in the northeastern states of India and in Nepal.

• The rhino's population recovery is a result of focused conservation efforts such as habitat protection and anti-poaching measures.

• Dudhwa Tiger Reserve:

• It comprises two core areas: Dudhwa National Park and Kishanpur Wildlife Sanctuary.

• The reserve supports a wide range of wildlife, including tigers, elephants, swamp deer, and various bird species.

• Rhino Conservation in India:

• India is home to more than 75% of the global population of the greater one-horned rhinoceros.

• Key rhino habitats in India include Kaziranga National Park, Pobitora Wildlife Sanctuary, and Dudhwa National Park.

• Projects like the Indian Rhino Vision 2020 aim to increase rhino populations across protected areas.

• WWF-India:

• WWF-India works in collaboration with government bodies to implement conservation programs for endangered species.

• It focuses on habitat restoration, anti-poaching efforts, and community engagement for sustainable conservation.

Q16. Answer: (a) Article 18

Source Code:

The correct answer is Article 18.

Key Points

• Article 18 of the Constitution of India prohibits Indian citizens from accepting titles from foreign states.

• It forms part of the fundamental rights under the Right to Equality (Articles 14-18).

• This provision ensures the abolition of titles that create artificial distinctions within society.

• The Article states that no citizen of India shall accept any title from any foreign state while holding any office of profit or trust under the government.

• However, military and academic distinctions are exempted from this prohibition.

Additional Information

• Fundamental Rights:

• Fundamental Rights are enshrined in Part III of the Constitution of India.

• They are classified into six categories: Right to Equality, Right to Freedom, Right Against Exploitation, Right to Freedom of Religion, Cultural and Educational Rights, and Right to Constitutional Remedies.

• Articles 14-18 collectively form the Right to Equality.

• Abolition of Titles:

• Article 18(1) abolishes all titles except military or academic distinctions.

• It was aimed at eliminating practices like conferring "Sir" or other hereditary titles that signify class distinction.

• International Context:

• Many countries have provisions restricting or regulating the acceptance of foreign titles by their citizens.

• Such measures are often aimed at maintaining sovereignty and avoiding conflicts of interest.

• Historical Background:

• The abolition of titles was influenced by the freedom movement, where leaders opposed titles granted by British colonial rulers.

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• Titles like "Rai Bahadur" and "Khan Bahadur" were seen as symbols of loyalty to the British regime.

Q17. Answer: (a) 9.25

Shortcut Trick

Remaining Distance = 1/3 of 222 km = 74 km.

Remaining Time = 4/7 of 14 hours = 8 hours.

Required Speed = 74 ÷ 8 = 9.25 km/hr.

Therefore The correct answer is 9.25 km/hr.

Alternate Method

Given:

Total Distance = 222 km

Total Time = 14 hours

Calculations:

=> Distance covered = 2/3 × 222 = 148 km

=> Remaining Distance = 222 − 148 = 74 km

=> Time taken = 3/7 × 14 = 6 hours

=> Remaining Time = 14 − 6 = 8 hours

=> Required Speed = Remaining Distance ÷ Remaining Time

=> Required Speed = 74 ÷ 8 = 9.25 km/hr

Therefore The correct answer is 9.25 km/hr.

Additional Information

Basic Speed Formula

Speed is defined as the distance covered per unit time. Formula: Speed = Distance ÷ Time.

Average Speed

Average Speed = Total Distance ÷ Total Time. In this case, the overall average speed is 222 ÷ 14 ≈ 15.85 km/hr.

Unit Conversion

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

Q18. Answer: (a) 96 P 16 S 112 R 48 Q 6

Given:

‘P’ stands for ‘÷’

‘Q’ stands for ‘×’

‘R’ stands for ‘+’

‘S’ stands for ‘−’

We need to find which of the given options results in 182.

1) 96 P 16 S 112 R 48 Q 6

Substitute the symbols with operators:

96 ÷ 16 - 112 + 48 × 6

Following the order of operations (BODMAS/PEMDAS):

= 96 ÷ 16 - 112 + 48 × 6

= 6 - 112 + 288

= -106 + 288

= 182

2) 96 Q 16 R 112 S 48 P 6

Substitute the symbols with operators:

96 × 16 + 112 - 48 ÷ 6

Following the order of operations (BODMAS/PEMDAS):

= 96 × 16 + 112 - 48 ÷ 6

= 1536 + 112 - 8

= 1648 - 8

= 1640 ≠ 182 (Incorrect)

3) 96 S 16 P 112 Q 48 R 6

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Substitute the symbols with operators:

96 - 16 ÷ 112 × 48 + 6

Following the order of operations (BODMAS/PEMDAS):

= 96 - 0.1428... × 48 + 6

= 96 - 6.857... + 6

= 89.142... + 6

= 95.142... ≠ 182 (Incorrect)

4) 96 R 16 Q 112 P 48 S 6

Substitute the symbols with operators:

96 + 16 × 112 ÷ 48 - 6

Following the order of operations (BODMAS/PEMDAS):

= 96 + 1792 ÷ 48 - 6

= 96 + 37.333... - 6

= 133.333... - 6

= 127.333... ≠ 182 (Incorrect)

Hence, the correct answer is "Option 1".

Q19. Answer: (b) Institutions created before 1950 can still be considered minority institutions, even if incorporated by sta...

The correct answer is Institutions created before 1950 can still be considered minority institutions, even if incorporated by statute.

Key Points

• The majority opinion in the Supreme Court case 'Aligarh Muslim University vs Naresh Agarwal (November 2024)' upheld that institutions established before 1950 can retain minority status under Article 30(1).

• This decision revisited key aspects of the landmark Azeez Basha case (1968), which had previously ruled against AMU's minority status.

• The judgment clarified that incorporation by statute does not automatically strip minority communities of their rights under Article 30(1).

• The Court emphasized historical and constitutional contexts, recognizing the unique circumstances under which institutions like AMU were established.

• This ruling reinforces the protection granted to minority educational institutions under the Indian Constitution.

Additional Information

• Article 30(1) of the Indian Constitution:

• Grants minority communities the right to establish and administer educational institutions of their choice.

• Ensures protection of cultural and linguistic rights for minorities.

• Is intended to preserve the diversity and pluralism of India's education system.

• Azeez Basha Case (1968):

• The Supreme Court ruled that AMU was not a minority institution because it was established by an Act of Parliament, not by the Muslim community.

• This judgment had significant implications for minority rights in India.

• Aligarh Muslim University (AMU):

• Founded in 1920, AMU is one of India's premier educational institutions with historical importance for the Muslim community.

• It was established by Sir Syed Ahmed Khan as the Mohammedan Anglo-Oriental College, which later became AMU.

• Minority Educational Institution:

• An institution established by a minority community to preserve its culture, language, or religion.

• Such institutions are protected under Article 30(1) of the Indian Constitution.

Q20. Answer: (c) TEEW

The logic followed in this pattern involves a consistent alphabetical shift for each letter position:

For 'DTUH' related to 'BQWK':

For 'ZNYN' related to 'XKAQ':

Applying the same logic to 'VHCT':

Thus, 'VHCT' will be coded as TEEW.

Hence, the correct answer is "Option 3".

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Q21. Answer: (c) F

Given, eight people, A, B, C, D, E, F, G and H, are sitting is a straight line facing south.

B is sitting at one of the ends of the line.

D is sitting to the immediate left of B.

Only 3 people are sitting to the right of E.

G is sitting to the immediate left of C.

A is sitting to the immediate left of H and immediate right of C.

And F sits at the remaining place.

F is sitting to the immediate left of D.

Hence, the correct answer is "Option 3".

Q22. Answer: (a) 45

Shortcut Trick

For numbers A, B, C, D in proportion after adding x, use x = (AD − BC) ÷ (A + D − B − C).

Here A = 29, B = 31, C = 7, D = 8.

x = (29 × 8 − 31 × 7) ÷ (29 + 8 − 31 − 7) => (232 − 217) ÷ (37 − 38) = 15 ÷ (−1) = −15.

Substitute x = −15 in y2 = 5x(2x − 3) => y2 = 5(−15)(2(−15) − 3) = (−75)(−33) = 2475.

Re-evaluating with x = 9 (using absolute difference trick) => x = |232 − 217| ÷ |37 − 38| = 15. Substituting x = 9 logic: y = √(5 × 9 × (18 − 3)) = √(45 × 15) ≈ incorrect. Re-check: Let x = 9 => (29+9)/(31+9) = 38/40 = 19/20; (7+9)/(8+9) = 16/17 (No). Let x = 11 => 40/42 = 20/21; 18/19 (No). Correct x calculation: (29+x)(8+x) = (31+x)(7+x) => 232+37x+x2 = 217+38x+x2 => x = 15.

y2 = 5(15)(2(15) − 3) = 75 × 27 = 2025 => y = 45.

Therefore The correct answer is 45.

Alternate Method

Given: Numbers 29, 31, 7, 8. Mean proportion 5x : y :: y : (2x − 3).

Formula Used: (A+x)/(B+x) = (C+x)/(D+x) and y2 = a × b.

=> (29 + x) ÷ (31 + x) = (7 + x) ÷ (8 + x)

=> (29 + x)(8 + x) = (31 + x)(7 + x)

=> 232 + 29x + 8x + x2 = 217 + 31x + 7x + x2

=> 232 + 37x = 217 + 38x

=> 38x − 37x = 232 − 217

=> x = 15

=> Given: 5x : y :: y : (2x − 3) => y2 = 5x × (2x − 3)

=> y2 = 5(15) × (2 × 15 − 3)

=> y2 = 75 × 27

=> y2 = 2025

=> y = 45 (Since y > 0)

Therefore The correct answer is 45.

Additional Information

Mean Proportional

If a : b :: b : c, then b is the mean proportional between a and c, where b2 = ac.

Continued Proportion

Three numbers a, b, c are in continued proportion if a/b = b/c. Four numbers are in proportion if a/b = c/d.

Fourth Proportional

The fourth proportional d of numbers a, b, c is calculated as d = (b × c) ÷ a.

Q23. Answer: (d) 378

Shortcut Trick

Total work = LCM(63, 42, 27) = 378 units.

Efficiencies: A = 6, B + C = 9, and A + C = 14.

Efficiency of C = (A + C) − A = 14 − 6 = 8.

Efficiency of B = (B + C) − C = 9 − 8 = 1.

Time taken by B = Total work ÷ B's efficiency = 378 ÷ 1 = 378 hours.

Therefore The correct answer is 378 hours.

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Alternate Method

Given:

Time taken by A = 63 hours

Time taken by B and C together = 42 hours

Time taken by A and C together = 27 hours

Formula Used:

Total Work = LCM of given time

Efficiency = Total Work ÷ Time

Time = Total Work ÷ Efficiency

Person	Hours	Total Work	Efficiency
A	63	378	6
B + C	42	9	
A + C	27	14	

Calculations:

=> Efficiency of A = 6 units/hour

=> Efficiency of A + C = 14 units/hour

=> Efficiency of C = 14 − 6 = 8 units/hour

=> Efficiency of B + C = 9 units/hour

=> Efficiency of B = 9 − 8 = 1 unit/hour

=> Time taken by B alone = Total Work ÷ Efficiency of B

=> Time taken by B alone = 378 ÷ 1 = 378 hours

Therefore The correct answer is 378 hours.

Additional Information

Work & Efficiency Relationship

Efficiency is inversely proportional to the time taken. Total Work = Efficiency × Time. The LCM method simplifies fractional calculations by assigning whole numbers to the total assumed work.

Work & Wages

Wages are always distributed in proportion to the total work done by each individual. If workers work for the same number of days, the wages are distributed directly in the ratio of their efficiencies.

Pipes & Cisterns

This concept is exactly the same as Time & Work. Inlet pipes have a positive efficiency as they fill the tank, while outlet pipes or leaks have a negative efficiency as they empty the tank.

Q24. Answer: (b) -65

Shortcut Trick

For the same remainder, x is the HCF of the differences: (2636 − 1272) and (4209 − 2636).

Differences: 1364 and 1573.

HCF(1364, 1573) = 11 × 1364/11 → 11 × 124 and 11 × 143 → HCF is 11 × 19 = 209 (no) → HCF = 121 is not possible. HCF is 11.

Calculating x = 11 and y = 1272 % 11 = 7.

Value = 3(11) − 14(7) = 33 − 98 = −65.

Therefore The correct answer is -65.

Alternate Method

Given: Numbers are 1272, 2636, 4209.

Step 1: Find the differences between the numbers.

=> 2636 − 1272 = 1364

=> 4209 − 2636 = 1573

Step 2: Find the Greatest Common Divisor (HCF) of 1364 and 1573.

=> 1364 = 4 × 11 × 31

=> 1573 = 11 × 11 × 13

=> Common factors = 11, 11^2 = 121

=> Let us check HCF by long division: 1573 = 1364 × 1 + 209

=> 1364 = 209 × 6 + 110

=> 209 = 110 × 1 + 99

=> 110 = 99 × 1 + 11

=> 99 = 11 × 9 + 0

=> x = 11

Step 3: Find the remainder y.

=> 1272 ÷ 11 => 1272 = 11 × 115 + 7

=> y = 7

Step 4: Calculate (3x − 14y).

=> 3(11) − 14(7) = 33 − 98 = −65

Therefore The correct answer is -65.

Additional Information

HCF of Numbers leaving same remainder

To find the greatest number that divides a, b, and c leaving the same remainder in each case, calculate HCF(|a−b|, |b−c|, |c−a|).

Divisibility Rule of 11

A number is divisible by 11 if the difference between the sum of digits at odd places and the sum of digits at even places is 0 or a multiple of 11.

Euclidean Algorithm

HCF(a, b) = HCF(b, a mod b). This is a faster method to find the HCF of large numbers by repeated division.

Q25. Answer: (d) 10%

The correct answer is 10%.

Key Points

• Urban infrastructure investments increased by 10% from Fiscal Year 2019 to Fiscal Year 2023.

• This minor increase highlights a slower growth trend in infrastructure spending during the specified period.

• Urban infrastructure includes investments in transportation, housing, sanitation, water supply, and energy systems that support urban areas.

• The fiscal years are calculated based on the Indian government's financial year, which runs from April 1 to March 31.

• The percentage increase reflects government policy priorities during this timeframe and economic factors impacting public spending.

Additional Information

• Urban Infrastructure Terminology:

• Urban infrastructure refers to the physical systems and facilities required for cities to function effectively, including roads, bridges, schools, and hospitals.

• It also encompasses services such as electricity, water supply, and waste management.

• Government Investment Trends:

• Investment trends in urban infrastructure are often influenced by economic growth, political priorities, and international funding agencies.

• Slower growth in investment can indicate economic constraints or shifts in policy focus to other sectors.

• Fiscal Year Concept:

• The fiscal year is a 12-month period used by governments and organizations for budgeting and financial reporting.

• In India, the fiscal year starts on April 1 and ends on March 31 of the following year.

• Urbanization Challenges:

• Rapid urbanization poses challenges such as congestion, pollution, and inadequate infrastructure.

• Investments in urban infrastructure are critical for sustainable growth and improving the quality of life in cities.

Q26. Answer: (c) 454

Given:

Simplify: (93)/(28) × (70 + 42) + 82

Formula Used:

Use the order of operations (BODMAS):

Calculations:

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Given expression: (93)/(28) × (70 + 42) + 82
Solve the bracket (70 + 42)
=> (93)/(28) × 112 + 82
Perform division (112)/(28)
=> 93 × 4 + 82
Perform multiplication 93 × 4
=> 372 + 82
Perform addition 372 + 82
=> 454
Therefore The correct answer is option (3)

Q27. Answer: (c) West

Given,
Town M is to the north of Town N.
Town N is to the east of Town O.
Town O is to the west of Town P.
Town P is to the south of Town Q.
Town M is to the south-west of Town Q.
Then,
Position of Town N with respect to Town P is in West.
Hence, the correct answer is "Option 3".

Q28. Answer: (c) • 35/9

Given:
$(11/2)^{12} \times (2/11)^2 \times (11/2)^{(16)} = (2/11)^{(9m +9)}$
Formula used:
$a^m \times a^n = a^{(m + n)}$
$(a/b)^{-n} = (b/a)^n$
Calculation:
$(11/2)^{12} \times (2/11)^2 \times (11/2)^{(16)} = (2/11)^{(9m +9)}$
=> Combine terms with the same base:
$=> (11/2)^{(12 + 16)} \times ((2)/(11))^2$
$=> (11/2)^{(12 + 16)} \times ((2)/(11))^2$
$=> (2/11)^{(-28)} \times ((2)/(11))^2$
=> (2/11)^(-28 + 2)
=> (2/11)^(-26)
Now equate the powers from both sides:
(2/11)^(-26) = (2/11)^(9m +9)
=> -26 = -(9m + 9)
=> 26 = -9m - 9
=> 26 + 9 = -9m
=> 35 = -9m
=> m = -35/9
Therefore The correct answer is option (3).

Q29. Answer: (b) 49

Shortcut Trick
Assume a reference base weight of 50 kg.
Find deviations from 50: −10, −1, +6, +13, and −13.
Net deviation = (−10) + (−1) + 6 + 13 + (−13) = −5.
Average adjustment = Net deviation ÷ Number of members = −5 ÷ 5 = −1.
Actual Average weight = Base weight + Adjustment = 50 − 1 = 49 kg.
Therefore The correct answer is 49 kg.

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Alternate Method
Given:
Weights of 5 family members = 40 kg, 49 kg, 56 kg, 63 kg, and 37 kg.
Total number of members (n) = 5.
Formula Used:
Average = (Sum of all observations) ÷ (Total number of observations)
Calculations:
=> Sum of weights = 40 + 49 + 56 + 63 + 37
=> Sum of weights = 245 kg
=> Average weight = 245 ÷ 5
=> Average weight = 49 kg
Therefore The correct answer is 49 kg.
Additional Information
Arithmetic Mean
It is the most common measure of central tendency, calculated as the sum of all values divided by the total count.
Weighted Average
When different observations have different levels of importance, the average is (w1x1 + w2x2 + ...) ÷ (w1 + w2 + ...).
Average of Consecutive Numbers
For a series in Arithmetic Progression (AP), the average is simply (First Term + Last Term) ÷ 2.

Q30. Answer: (d) $ W @ W

Given:

Letter	F	T	E	P	A	U	X	R
Code	7	$	@	9	2	%	6	4

Now, the group of letters is: TAEX
Let's analyze the letters and apply the conditions sequentially:
• 1^(st) letter: T (Consonant)
• 2^(nd) letter: A (Vowel)
• 3^(rd) letter: E (Vowel)
• 4^(th) (Last) letter: X (Consonant)
Checking Conditions:
1. If the 1^(st) letter is a vowel and the last letter is a consonant:
• 1^(st) letter 'T' is a consonant. (Condition does not meet)
2. If the 2^(nd) letter is a vowel and the last letter is a consonant:
• 2^(nd) letter 'A' is a vowel. (Meets)
• Last letter 'X' is a consonant. (Meets)
Since both criteria are met, Condition 2 applies. Both 'A' and 'X' are to be coded as 'W'.
3. If the 3^(rd) and 4^(th) letters are consonants:
• 3^(rd) letter 'E' is a vowel. (Condition does not meet)
4. If the 1^(st) and 2^(nd) letters are vowels:
• 1^(st) letter 'T' is a consonant. (Condition does not meet)
Only Condition 2 applies. Therefore, 'A' and 'X' will be coded as 'W'.
The remaining letters 'T' and 'E' will be coded directly from the table.
Codes:
• T → $ (from table)
• A → W (from Condition 2)
• E → @ (from table)
• X → W (from Condition 2)
Thus, the code for TAEX is $W@W.
Hence, the correct answer is "Option 4".

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Q31. Answer: (a) 3

Given: Seven boxes A, B, C, D, E, F and G are kept one above the other.

Let's deduce the arrangement based on the given conditions:

1) "Only B is kept above G."

This implies that B is immediately above G, and B is the topmost box (as no other box is above G).

B
G

2) "Only C is kept between G and E."

This means the sequence G-C-E is formed immediately below B.

B
G
C
E

3) "Only A is kept below D."

This implies that A is immediately below D, and A is the bottom-most box.

B
G
C
E
D
A

The remaining box is F.

Since there are 7 boxes in total, F must occupy the only remaining position.

Final arrangement from top to bottom:

B
G
C
E
F
D
A

There are 3 boxes kept below E.

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Hence, the correct answer is "Option 1".

Q32. Answer: (a) 6,042

Shortcut Trick

Ratio of Gain to Loss is 125 : 100 = 5 : 4.

Total difference in Selling Prices = 8,845 − 1,987 = 6,858.

Divide difference by total ratio parts (5 + 4 = 9): 1 part = 6,858 ÷ 9 = 762.

Cost Price (CP) = Lower SP + Loss = 1,987 + (4 × 762) = 1,987 + 3,048 = 5,035.

Required Selling Price for 20% gain = 5,035 × 120 ÷ 100 = 5,035 × 1.2 = 6,042.

Therefore The correct answer is Rs. 6,042.

Alternate Method

Given → SP1 = 8,845, SP2 = 1,987, Gain = 1.25 × Loss, Target Profit% = 20%.

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

=> Let Loss = L. Then Gain = 1.25L.

=> (8,845 − CP) = 1.25 × (CP − 1,987)

=> 8,845 − CP = 1.25CP − 2,483.75

=> 2.25CP = 11,328.75

=> CP = 11,328.75 ÷ 2.25 = 5,035

=> New SP = 5,035 × (120/100) = 6,042.

Therefore The correct answer is Rs. 6,042.

Additional Information

Cost Price Calculation

When profit and loss are given for two different selling prices, CP = (L × SP1 + G × SP2) ÷ (G + L) in terms of ratios.

Profit and Loss Relation

If Profit = Loss, then CP = (SP1 + SP2) ÷ 2.

Q33. Answer: (a) 39.94% votes, 48 seats

The correct answer is 39.94% votes, 48 seats.

Key Points

• In the 2024 Haryana Legislative Assembly elections, the winning party secured 39.94% of the total vote share, establishing its majority.

• With this vote percentage, the party successfully won 48 seats in the 90-member Haryana Legislative Assembly.

• The winning party's performance indicated a significant consolidation of votes in key constituencies across the state.

• The election results reflected the impact of strategic campaigning and voter alignment with the party’s policies.

• These elections were marked by competitive dynamics between major political parties, with the winning party demonstrating effective outreach efforts.

Additional Information

• Haryana Legislative Assembly:

• The Haryana Legislative Assembly consists of 90 seats, and elections are held every five years.

• It operates under the framework of the Indian Constitution to legislate on state-level issues.

• Members of the Legislative Assembly (MLAs) are elected directly by the people of Haryana.

• Vote Percentage and Seat Allocation:

• Vote percentage refers to the proportion of total votes a party secures relative to all votes cast.

• Seats are allocated based on the number of constituencies a party wins through a simple majority system.

• Electoral Process in Haryana:

• Elections in Haryana are conducted by the Election Commission of India.

• The process includes voter registration, polling, counting of votes, and declaration of results.

• Electronic Voting Machines (EVMs) are commonly used for voting in the state.

• Major Political Parties in Haryana:

• Key political players in Haryana include the Bharatiya Janata Party (BJP), Indian National Congress (INC), and regional parties like the Jannayak Janta Party (JJP).

• Coalitions and alliances often play a crucial role in determining electoral outcomes.

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Q34. Answer: (d) $17 trillion

The correct answer is $17 trillion.

Key Points

• The projected sovereign bond issuance in OECD countries for 2025 is estimated at $17 trillion, according to the Global Debt Report 2025.

• This represents a significant increase in borrowing needs due to rising debt levels and fiscal pressures in these economies.

• Sovereign bond issuance is critical for governments to finance budget deficits, refinance existing debt, and support economic recovery efforts.

• The increase in issuance reflects the ongoing global economic challenges, including post-pandemic recovery, geopolitical tensions, and inflationary pressures.

• OECD countries collectively account for a major share of global sovereign debt issuance, reflecting their advanced economic status and reliance on bond markets.

Additional Information

• Sovereign Bond:

• A sovereign bond is a debt security issued by a national government to raise funds for public spending.

• Investors typically view sovereign bonds as low-risk investments, especially for countries with strong credit ratings.

• OECD (Organisation for Economic Co-operation and Development):

• A group of 38 member countries that collaborate to promote economic growth, trade, and sustainable development.

• Member countries include the US, UK, Germany, France, Japan, and other advanced economies.

• Global Debt Trends:

• Global debt levels have surged in recent years due to pandemic-related spending, geopolitical conflicts, and inflation control measures.

• Governments, businesses, and households are experiencing increased borrowing costs due to rising interest rates globally.

• Debt-to-GDP Ratio:

• This ratio compares a country's total debt to its gross domestic product (GDP), indicating its debt sustainability.

• Many OECD countries have seen their debt-to-GDP ratios rise substantially post-2020.

• Importance of Sovereign Debt Management:

• Effective debt management ensures that governments can meet their financing needs while minimizing borrowing costs and risks.

• Sovereign debt markets also play a critical role in the broader financial system, influencing interest rates and liquidity.

Q35. Answer: (c) equal

Shortcut Trick

When a transversal intersects two parallel lines, the angles in matching corners are called corresponding angles.

By the Corresponding Angles Postulate, these angles are always equal in measure.

Therefore The correct answer is equal.

Alternate Method

Given:

Two parallel lines m and n intersected by a transversal line t.

Theorem and Properties:

When a transversal intersects two parallel lines:

=> Corresponding angles lie on the same side of the transversal and in the same relative position relative to the parallel lines (such as angle 1 and angle 2 in the diagram).

=> According to the Corresponding Angles Postulate, these angles are equal in measure.

Analysis of Options:

=> Option 1 (Complementary): Complementary angles sum up to 90°. Corresponding angles are not necessarily complementary unless the transversal is perpendicular to the parallel lines.

=> Option 2 (Unequal): Since the lines are parallel, the corresponding angles must be equal, not unequal.

=> Option 3 (Equal): This is the correct property of corresponding angles formed by parallel lines and a transversal.

=> Option 4 (Supplementary): Supplementary angles sum up to 180°. Consecutive interior angles are supplementary, but corresponding angles are equal.

Therefore The correct answer is equal.

Additional Information

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Alternate Interior Angles

Angles on opposite sides of the transversal and inside the parallel lines are always equal in measure.

Consecutive Interior Angles

Angles on the same side of the transversal and inside the parallel lines are supplementary, meaning their sum is 180°.

Vertically Opposite Angles

Angles opposite to each other at the intersection of two lines are always equal, regardless of whether the lines are parallel.

Q36. Answer: (d) Kannada

The correct answer is Kannada.

Key Points

• Girish Karnad, a renowned Indian playwright, predominantly contributed to Kannada literature.

• His works include celebrated plays such as "Tughlaq," "Hayavadana," and "Nagamandala," which were originally written in Kannada and later translated into multiple languages.

• Karnad’s plays, rooted in Indian mythology and history, are recognized for their unique blend of traditional and modern themes, addressing contemporary societal issues.

• He was honored with the Jnanpith Award in 1998 for his outstanding contribution to Kannada literature and Indian theatre.

• His work significantly enriched Kannada literature, making it accessible and appreciated on a global scale.

Additional Information

• Girish Karnad’s Legacy:

• He was an influential figure in Indian theatre and cinema, contributing as a playwright, actor, and director.

• Many of his works are inspired by Indian epics, folklore, and historical events, giving them a universal appeal.

• Karnad’s plays were known for their deep philosophical undertones and exploration of human emotions.

• Kannada Literature:

• It is one of the oldest and most significant forms of Indian literature, with a history dating back over a thousand years.

• Kannada literature has been enriched by notable writers such as Pampa, Kuvempu, and U. R. Ananthamurthy, along with Girish Karnad.

• It encompasses poetry, prose, drama, and folk literature, reflecting the cultural and social heritage of Karnataka.

• Jnanpith Award:

• It is India's highest literary honor, awarded annually by the Bharatiya Jnanpith organization.

• The award recognizes exceptional contributions to Indian literature across all officially recognized languages.

• Girish Karnad received this prestigious award in 1998 for his outstanding contributions to Kannada literature.

• Theatre in India:

• Theatre has been an integral part of Indian culture, evolving from ancient Sanskrit drama to modern experimental plays.

• Playwrights like Girish Karnad have bridged the gap between classical and contemporary theatre traditions in India.

• Indian theatre often addresses social, political, and philosophical themes, resonating with diverse audiences.

Q37. Answer: (c) XS −9

The logic followed in this pattern involves a consistent alphabetical shift for the letters and an arithmetic operation for the number:

For 'TK 14' related to 'YH 5':

For 'MN 5' related to 'RK -4':

The consistent pattern observed is: First letter +5, Second letter -3, Number -9.

Applying the same logic to 'SV 0':

Thus, SV 0 is related to XS -9.

Hence, the correct answer is "Option 3".

Q38. Answer: (b) C Beadon

The correct answer is C Beadon.

Key Points

• The Maski inscription was discovered by C Beadon in the year 1915.

• It is located in Maski, a village in the Raichur district of Karnataka, India.

• The inscription is significant as it is the first Ashokan edict where the emperor is referred to by his personal name, Ashoka, instead of his titles.

• The Maski inscription belongs to the Minor Rock Edict series, which provides insight into Ashoka's policies promoting Dhamma (moral conduct).

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• This discovery helped confirm that the King referred to in various edicts across India was indeed Emperor Ashoka.

Additional Information

• James Prinsep

• James Prinsep was an English scholar and orientalist who deciphered the Brahmi and Kharosthi scripts in 1837.

• His work laid the foundation for understanding Ashokan inscriptions and the Mauryan Empire.

• Ashokan Edicts

• The Ashokan edicts are inscriptions carved on rocks, pillars, and caves across India during Emperor Ashoka's reign (268–232 BCE).

• They propagate the principles of Dhamma, including non-violence, respect for all life forms, and social harmony.

• Minor Rock Edicts

• These are brief inscriptions primarily addressing the importance of moral conduct and Dhamma.

• They differ from Major Rock Edicts, which cover administrative policies and broader principles.

• Christian Lassen

• Christian Lassen was a German Indologist known for his work on Sanskrit and ancient Indian history.

• He contributed to the study of Indian inscriptions but did not discover the Maski inscription.

Q39. Answer: (d) Bronze

The correct answer is Bronze.

Key Points

• The lost wax technique, also known as cire perdue, was used during the Harappan civilization for crafting bronze statues.

• One of the most famous examples is the "Dancing Girl", a bronze figurine discovered at Mohenjo-Daro, showcasing the advanced metalworking skills of the Harappans.

• This technique involved creating a wax model, covering it with clay or another mold material, and then heating it so the wax melts and is replaced by molten metal.

• The process allowed for intricate designs and demonstrated the Harappans' mastery in metallurgy and art.

• The use of bronze highlights the significance of alloy-making and metal technology in the Harappan civilization.

Additional Information

• Bronze:

• Bronze is an alloy primarily consisting of copper and tin, known for its durability and corrosion resistance.

• It was widely used in ancient civilizations, including the Harappans, for making tools, weapons, and artistic objects.

• Bronze enabled the creation of detailed sculptures and was integral to trade and cultural exchange.

• Lost Wax Technique (Cire Perdue):

• The technique dates back thousands of years and is still used in modern sculpture-making.

• The process involves multiple steps, including creating a wax model, molding, and casting with metal.

• It allows for precision and intricate design, making it ideal for artistic expression.

• Harappan Art and Craft:

• The Harappan civilization was renowned for its craftsmanship in pottery, bead-making, metallurgy, and sculpture.

• The artifacts reflect their advanced skills, artistic sensibilities, and technological innovations.

• Materials like terracotta, stone, and metals were used extensively in their art and daily life.

• Significance of Mohenjo-Daro:

• Mohenjo-Daro is one of the largest settlements of the Indus Valley Civilization and a UNESCO World Heritage site.

• It has yielded numerous artifacts, including the famous "Dancing Girl" statue, which offers insight into Harappan culture.

• The site demonstrates the urban planning and artistic achievements of the civilization.

Q40. Answer: (a) 20

Shortcut Trick

When three numbers a, b, c are in continued proportion (a : b :: b : c), then b is the mean proportional.

Direct formula: A = √(First Term × Last Term)

=> A = √(10 × 40)

=> A = √400 = 20

Therefore The correct answer is 20.

Alternate Method

Given: 10 : A :: A : 40

Formula Used: Product of Means = Product of Extremes

=> 10/A = A/40

=> A × A = 10 × 40

=> A^2 = 400

=> A = √400

=> A = 20

Therefore The correct answer is 20.

Additional Information

Mean Proportional

For two numbers x and y, the mean proportional is given by √(x × y).

Third Proportional

If a : b :: b : c, then c is called the third proportional and is calculated as c = b^2/a.

Fourth Proportional

If a : b :: c : d, then d is the fourth proportional and d = (b × c)/a.

Q41. Answer: (b) 42

The logic followed here is:

Position of Vimal from the top = 19^(th)

Position of Vimal from the bottom = 24^(th)

To find the total number of students in the class when the rank of one person from both ends is given, we use the formula:

Total number of students = (Rank from top) + (Rank from bottom) - 1

= 19 + 24 - 1

= 43 - 1 = 42

So, there are 42 students in the class.

Hence, the correct answer is "Option 2".

Q42. Answer: (d) 9

Shortcut Trick

Let Brother's age be B and Sister's age be S.

From the second condition: 5S = B − 5.

Substitute this into the first condition: 3B = (B − 5) + 25.

=> 3B = B + 20 => 2B = 20 => B = 10 years.

Then, 5S = 10 − 5 = 5 => S = 1 year.

Difference = 10 − 1 = 9 years.

Therefore The correct answer is 9 years.

Alternate Method

Given:

Let the present age of the brother be B and the sister be S.

Equation 1: 3B = 5S + 25

Equation 2: 5S = B − 5

Calculations:

Substitute the value of 5S from Equation 2 into Equation 1:

=> 3B = (B − 5) + 25

=> 3B = B + 20

=> 3B − B = 20

=> 2B = 20

=> B = 10 years

Now, find Sister's age (S):

=> 5S = 10 − 5

=> 5S = 5

=> S = 1 year

Age Difference:

=> Difference = B − S

=> Difference = 10 − 1 = 9 years

Therefore The correct answer is 9 years.

Additional Information

Linear Equations in Two Variables

Problems involving two unknown ages are best solved by forming simultaneous equations and using the substitution or elimination method.

Age Difference Property

The difference between the ages of two people remains constant regardless of the number of years passed or the time frame considered.

Ratio and Proportion in Ages

If the ratio of ages is given as a:b, then ages can be assumed as ax and bx to simplify the algebraic expressions.

Q43. Answer: (b) 224

Shortcut Trick

Ratio of Selling Prices: SP1 : SP2 = (100 − Loss%) : (100 + Gain%)

SP1 : SP2 = (100 − 25) : (100 + 50) = 75 : 150 = 1 : 2

Given, 1 unit (SP1) = Rs. 112

Required Selling Price (SP2) = 2 units = 112 × 2 = Rs. 224

Therefore The correct answer is Rs. 224.

Alternate Method

Given: First Selling Price (SP1) = Rs. 112, Loss = 25%, Target Gain = 50%.

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

=> Calculate Cost Price (CP): CP = 112 × 100 ÷ (100 − 25)

=> CP = 112 × 100 ÷ 75 = 112 × 4 ÷ 3 = Rs. 448/3

=> Calculate New Selling Price (SP2): SP2 = (448/3) × (100 + 50) ÷ 100

=> SP2 = (448/3) × 150 ÷ 100 = 448 × 50 ÷ 100 = 448 ÷ 2

=> SP2 = Rs. 224

Therefore The correct answer is Rs. 224.

Additional Information

Base of CP

In profit and loss problems, Cost Price (CP) is always considered 100% unless stated otherwise. Loss is subtracted from 100% and Profit is added to 100% to find SP%.

Unitary Method Application

If 75% (100 − 25) corresponds to Rs. 112, then 150% (100 + 50) will correspond to (112 ÷ 75) × 150.

Q44. Answer: (b) 84/85

Shortcut Trick

Use standard Pythagorean triplets: (3, 4, 5) and (8, 15, 17).

For cosα = 3/5 → sinα = 4/5

For cosβ = 15/17 → sinβ = 8/17

Applying sin(α + β) = sinαcosβ + cosαsinβ => (4/5 × 15/17) + (3/5 × 8/17) = 60/85 + 24/85 = 84/85.

Therefore The correct answer is 84/85.

Alternate Method

Given: cosα = 3/5, cosβ = 15/17

Formula Used: sin(α + β) = sinα cosβ + cosα sinβ

=> sinα = √(1 − cos²α) = √(1 − (3/5)²) = √(16/25) = 4/5

=> sinβ = √(1 − cos²β) = √(1 − (15/17)²) = √(1 − 225/289) = √(64/289) = 8/17

=> sin(α + β) = (4/5 × 15/17) + (3/5 × 8/17)

=> sin(α + β) = 60/85 + 24/85 = 84/85

Therefore The correct answer is 84/85.

Additional Information

Trigonometric Addition Formulas

sin(A ± B) = sinA cosB ± cosA sinB and cos(A ± B) = cosA cosB -/+ sinA sinB.

Pythagorean Identity

$\sin^2\theta + \cos^2\theta = 1$, which implies $\sin\theta = \sqrt{(1 - \cos^2\theta)}$ for acute angles.

Q45. Answer: (c) 1536 √3

Shortcut Trick

Side of square = √2304 = 48 cm.

Perimeter of square = 4 × 48 = 192 cm.

Side of hexagon = 192 ÷ 6 = 32 cm.

Area of hexagon = $6 \times (\sqrt{3}/4) \times 32^2 = 1.5 \times \sqrt{3} \times 1024 = 1536\sqrt{3}$ cm².

Therefore The correct answer is $1536\sqrt{3}$ cm².

Alternate Method

Given: Area of square = 2304 cm². Perimeter of square = Perimeter of regular hexagon.

Formula Used: Area of square = a² | Perimeter of square = 4a | Perimeter of hexagon = 6s | Area of regular hexagon = $(3\sqrt{3}/2)s^2$

=> Side of square (a) = √2304 = 48 cm

=> Perimeter of square = 4 × 48 = 192 cm

=> Let side of hexagon be s. Then 6s = 192

=> s = 192 ÷ 6 = 32 cm

=> Area of hexagon = $(3\sqrt{3} \div 2) \times 32^2$

=> Area = $(3\sqrt{3} \div 2) \times 1024 = 3\sqrt{3} \times 512 = 1536\sqrt{3}$ cm²

Therefore The correct answer is $1536\sqrt{3}$ cm².

Additional Information

Regular Hexagon Properties

A regular hexagon consists of 6 equilateral triangles. Total area = $6 \times (\sqrt{3}/4) \times \text{side}^2$.

Square Properties

Diagonal of a square = $a\sqrt{2}$. Area can also be expressed as $(\text{diagonal}^2)/2$.

Perimeter Comparison

For a fixed perimeter, the area increases as the number of sides of a regular polygon increases (Circle has max area).

Q46. Answer: (d) 35

Shortcut Trick

Effective Rate of Interest for 2.5 years = 4% × 2.5 = 10%

Simple Interest = 10% of Principal (Rs. 350)

=> Rs. 350 × (10/100) = Rs. 35

Therefore The correct answer is Rs. 35.

Alternate Method

Given:

Principal (P) = Rs. 350

Time (T) = 2.5 years

Rate (R) = 4% per annum

Formula Used:

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

Calculations:

=> SI = (350 × 4 × 2.5) ÷ 100

=> SI = (350 × 10) ÷ 100

=> SI = 3500 ÷ 100

=> SI = Rs. 35

Therefore The correct answer is Rs. 35.

Additional Information

Total Amount (A)

The total amount to be returned after the time period is the sum of Principal and Simple Interest: A = P + SI.

Compound Interest (CI)

Unlike SI, Compound Interest is calculated on the principal and also on the accumulated interest of previous periods: A = P(1 + R/100)^T.

Rate and Time Units

Always ensure the Rate (per annum) and Time (years) are in the same time units before applying the formula.

Q47. Answer: (b) CZW

The logic followed here is:

Thus, 'CZW' will be the next in the series.

Hence, the correct answer is "Option 2".

Q48. Answer: (b) Devprayag

The correct answer is Devprayag.

Key Points

• The Bhagirathi and Alaknanda rivers converge at Devprayag in the state of Uttarakhand, India, to form the Ganga River.

• Devprayag is one of the Panch Prayags (five confluences) of the Alaknanda River.

• The Bhagirathi originates from the Gaumukh Glacier, while the Alaknanda originates from the Satopanth Glacier.

• At Devprayag, the waters of Bhagirathi are clearer and swifter, while Alaknanda's waters are slightly muddy and slower.

• This confluence is considered sacred in Hinduism and attracts pilgrims from across the country.

Additional Information

• Panch Prayags:

• The five sacred confluences of rivers in Uttarakhand are Vishnuprayag, Nandaprayag, Karnaprayag, Rudraprayag, and Devprayag.

• These Prayags are part of the pilgrimage routes in the Garhwal Himalayas.

• Significance of the Ganga River:

• The Ganga is regarded as a sacred river in Hinduism and is associated with spiritual purification.

• It flows through several Indian states, including Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal, before emptying into the Bay of Bengal.

• Hydrological Importance:

• The Ganga and its tributaries support millions of people by providing water for irrigation, drinking, and industrial use.

• The river system is vital for agriculture in the Ganges Basin, one of the most fertile regions in the world.

• Devprayag's Location:

• Devprayag is located at an altitude of around 830 meters (2,723 feet) above sea level.

• It is a small town in the Tehri Garhwal district of Uttarakhand and serves as a key spot for pilgrims traveling to the Char Dham Yatra.

Q49. Answer: (a) Manoj Sinha

The correct answer is Manoj Sinha.

Key Points

• Manoj Sinha, the Lieutenant Governor of Jammu and Kashmir, was honoured with the Maharaja Hari Singh Award for administrative reforms in January 2025.

• The award recognized his efforts in implementing progressive administrative policies that have contributed to the development and governance of the region.

• Under his leadership, Jammu and Kashmir has seen significant advancements in infrastructure, public service delivery, and transparency in administration.

• His initiatives have been focused on strengthening grassroots democracy and ensuring inclusive development across the Union Territory.

• The Maharaja Hari Singh Award is named after the last ruling monarch of Jammu and Kashmir, known for his contributions to social and administrative reforms.

Additional Information

• Maharaja Hari Singh's Legacy

• Maharaja Hari Singh was the last Dogra ruler of Jammu and Kashmir, serving from 1925 to 1947.

• He was known for his progressive reforms, including the abolition of untouchability and promotion of education.

• He played a key role in integrating Jammu and Kashmir into the Indian Union post-independence.

• Administrative Reforms in Jammu and Kashmir

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• Post the abrogation of Article 370 in 2019, the region has undergone significant administrative restructuring.
• Key reforms include the implementation of central laws, establishment of Panchayati Raj institutions, and enhanced focus on development projects.
• Efforts have been made to improve transparency, governance, and delivery of public services.
• Grassroots Democracy in J&K
• Grassroots democracy has been strengthened through regular elections for Panchayats and Urban Local Bodies.
• Increased participation of citizens in decision-making processes has been a major focus area.
• These measures aim to empower the local population and ensure equitable development.
• Developmental Initiatives
• Major infrastructure projects like road connectivity, power generation, and health facilities have been prioritized.
• Investment in education and skill development programs has been a cornerstone of the region's development strategy.
• Tourism promotion and industrial development have been key drivers of economic growth in Jammu and Kashmir.

Q50. Answer: (a) Dhupgarh

The correct answer is Dhupgarh.

Key Points

• Dhupgarh is the highest peak of the Satpura Range, located near Pachmarhi in Madhya Pradesh.
• The elevation of Dhupgarh is approximately 1,350 meters (4,429 feet) above sea level.
• It is a popular tourist destination, offering stunning views of the surrounding valleys and forests.
• The Satpura Range is a mountain range in central India that runs parallel to the Vindhya Range.
• Dhupgarh is also known for its beautiful sunset views and trekking opportunities.

Additional Information

• Satpura Range
• The Satpura Range stretches across Madhya Pradesh, Maharashtra, and Gujarat.
• It forms the watershed between the Narmada and Tapi rivers.
• The range is known for its rich biodiversity and hosts several wildlife sanctuaries, including the Satpura Tiger Reserve.
• It is composed of igneous and metamorphic rocks, primarily basalt.
• Mount Abu
• Mount Abu is a hill station located in Rajasthan and is part of the Aravalli Range.
• It is famous for the Dilwara Temples and Nakki Lake.
• Parasnath Hill
• Parasnath Hill is the highest peak in Jharkhand, located in the Chota Nagpur Plateau.
• It is a sacred site for Jains and is associated with the 23rd Tirthankara, Lord Parshvanatha.
• Anai Mudi
• Anai Mudi is the highest peak in South India, located in the Western Ghats in Kerala.
• It has an elevation of 2,695 meters (8,842 feet) above sea level.

Q51. Answer: (a) It will enhance India's regional navigation capabilities.

The correct answer is It will enhance India's regional navigation capabilities..

Key Points

• NVS-02 is a satellite designed as part of the Indian Regional Navigation Satellite System (IRNSS), also known as NavIC (Navigation with Indian Constellation).
• The satellite will significantly enhance India's regional navigation capabilities, enabling accurate positioning services over the Indian subcontinent and surrounding regions.
• NavIC is India's indigenous alternative to GPS (Global Positioning System), designed to support civilian, military, and commercial applications.
• The NVS-02 satellite will augment the existing constellation of NavIC satellites, ensuring better accuracy, coverage, and reliability for navigation services.
• It is equipped with advanced payloads, including L1, L5, and S-band signals, to improve positioning accuracy for users across diverse sectors like transportation, agriculture, and disaster management.

Additional Information

• Indian Regional Navigation Satellite System (IRNSS)
• IRNSS, operationally known as NavIC, is an independent regional navigation satellite system developed by the Indian Space

Research Organisation (ISRO).

• NavIC provides positioning services with an accuracy of up to 20 meters over India and a range of 1,500 kilometers beyond its borders.

• It serves both civilian and military users, with applications in navigation, fleet management, disaster warning, and more.

• NavIC vs GPS

• While GPS is a global navigation system operated by the US, NavIC is a regional system focused on India and nearby regions.

• NavIC offers two types of services: the Standard Positioning Service (SPS) for civilian users and the Restricted Service (RS) for military and strategic applications.

• Payload Features

• The NVS-02 satellite carries dual-frequency (L5 and S-band) signals, which reduce errors caused by ionospheric disturbances.

• These signals enable improved accuracy and are critical for applications like aviation, maritime navigation, and precision farming.

• Significance of NavIC

• NavIC is crucial for India's strategic autonomy, reducing dependency on foreign navigation systems like GPS.

• It supports various sectors, including transportation, fisheries, defense, and disaster management, enhancing India's technological self-reliance.

Q52. Answer: (d) Administration of small cities or towns

The correct answer is Administration of small cities or towns.

Key Points

• Municipalities in India are urban local bodies responsible for the administration and development of small cities or towns under their jurisdiction.

• They are established under the 74th Constitutional Amendment Act, 1992, which provides a framework for decentralized governance in urban areas.

• Key functions include urban planning, public health, sanitation, water supply, waste management, and infrastructure development for small cities or towns.

• Municipalities generate revenue through property tax, municipal bonds, grants from the state government, and user fees for services.

• They are governed by elected representatives and operate through standing committees and administrative staff to ensure efficient service delivery.

Additional Information

• Types of Urban Local Bodies in India:

• Municipal Corporations: Govern large urban areas with a population exceeding 1 million.

• Municipal Councils: Administer smaller cities or towns with a population between 25,000 and 1 million.

• Nagar Panchayats: Manage transitional areas moving from rural to urban.

• 74th Constitutional Amendment Act:

• Introduced in 1992, it aims to strengthen local self-governance in urban areas.

• Mandates the formation of municipalities, wards committees, and state finance commissions.

• Defines 18 functional items under the 12th Schedule for urban local bodies, including urban planning and poverty alleviation.

• Revenue Sources for Municipalities:

• Property tax, water tax, and user charges for municipal services.

• Grants from the central and state governments.

• Revenue from municipal bonds and public-private partnerships (PPPs).

• Challenges Faced by Municipalities:

• Limited financial autonomy and dependency on state governments for funds.

• Inadequate infrastructure and service delivery due to rapid urbanization.

• Lack of skilled manpower and efficient governance mechanisms.

• Smart Cities Mission:

• Launched in 2015 by the Government of India to promote sustainable and inclusive urban development.

• Aims to transform selected cities into smart cities by improving infrastructure, governance, and technology integration.

Q53. Answer: (b) induces a conformational change that optimises the active site for catalysis

The correct answer is induces a conformational change that optimises the active site for catalysis.

Key Points

• The induced-fit model suggests that when a substrate binds to an enzyme, it induces a conformational change in the enzyme, optimizing the active site for catalytic activity.

• This change enhances the enzyme's ability to catalyze the reaction by aligning critical amino acid residues and stabilizing the transition state.

• The model explains why enzymes exhibit high specificity for their substrates, as only specific substrates can trigger the appropriate conformational change.

• It contrasts with the outdated "lock and key" model by emphasizing flexibility in the enzyme's structure rather than a rigid fit.

• The induced-fit mechanism is critical in many biological processes, such as glycolysis and DNA replication, where enzymes interact dynamically with substrates.

Additional Information

• Enzymes

• Enzymes are biological catalysts that speed up chemical reactions without being consumed in the process.

• They work by lowering the activation energy required for a reaction to occur.

• Examples include amylase (breaks down starch), lipase (breaks down fats), and DNA polymerase (synthesizes DNA).

• Active Site

• The active site is the specific region of an enzyme where substrate binding and catalysis occur.

• It is typically composed of amino acid residues that interact with the substrate through hydrogen bonds, ionic interactions, or hydrophobic effects.

• The shape and chemical properties of the active site are key to enzyme specificity.

• Lock and Key vs. Induced-Fit Model

• The lock and key model suggests a perfect fit between the enzyme and substrate, like a key fitting into a lock.

• The induced-fit model, however, proposes that the enzyme adjusts its shape to accommodate the substrate upon binding.

• The induced-fit model better explains the flexibility and adaptability of enzymes in catalysis.

• Transition State

• The transition state is a high-energy intermediate state during a chemical reaction.

• Enzymes stabilize the transition state, reducing the energy required to reach it, thereby accelerating the reaction.

• Enzyme-Substrate Complex

• When a substrate binds to the active site of an enzyme, it forms an enzyme-substrate complex.

• This complex is essential for the chemical reaction to proceed and is a critical step in the catalytic process.

Q54. Answer: (d) 1,26,000

Shortcut Trick

Successive percentage change formula: Net % change = a + b + (a × b)/100

Net % increase = 5 + 20 + (5 × 20)/100 = 5 + 20 + 1 = 26%

Final Population = 1,00,000 × (126/100) = 1,26,000

Therefore The correct answer is 1,26,000.

Alternate Method

Given: Initial population = 1,00,000, First year increase = 5%, Second year increase = 20%

Formula: Final Population = P × (1 + r1/100) × (1 + r2/100)

=> Population after 1st year = 1,00,000 × (105/100) = 1,05,000

=> Population after 2nd year = 1,05,000 × (120/100)

=> Population after 2nd year = 1,05,000 × 1.2 = 1,26,000

Therefore The correct answer is 1,26,000.

Additional Information

Successive Percentage Change

When a value changes by a% and then by b%, the net change is given by (a + b + ab/100)%.

Population Growth Formula

If the growth rate is constant (r), the population after n years is $P(1 + r/100)^n$, similar to compound interest.

Percentage Increase vs Decrease

For increase, use +r; for decrease (depreciation), use −r in the multiplicative factor (1 ± r/100).

Q55. Answer: (d) Removes oxygen from the packaging

The correct answer is Removes oxygen from the packaging.

Key Points

• Nitrogen is an inert gas that is used to displace oxygen in the packaging of oil and fat-containing food items.
• Oxygen promotes oxidation, which can cause the food to become rancid, leading to spoilage and off-flavors.
• Flushing with nitrogen helps to extend the shelf life of the product by preventing oxidation and microbial growth.
• It maintains the freshness, taste, and nutritional quality of the food by creating a protective atmosphere.
• This method is commonly used in the packaging of snacks, chips, and other processed food products to ensure product integrity.

Additional Information

• Oxidation:
• A chemical reaction involving oxygen that can degrade the quality of food, especially oils and fats.
• Oxidation leads to the formation of peroxides and other compounds, causing rancidity in food.
• Rancidity:
• Refers to the unpleasant smell and taste of oils or fats when they undergo oxidation.
• It is a major cause of spoilage in fat-containing food products.
• Modified Atmosphere Packaging (MAP):
• MAP is a technology used in food packaging where the atmosphere inside the package is altered to preserve freshness.
• Nitrogen flushing is a common method used in MAP to replace oxygen and increase shelf life.
• Nitrogen Gas:
• It is an inert, non-reactive gas that does not support combustion or oxidation.
• It is widely used in food packaging to protect products from spoilage due to its inert nature.
• Shelf Life:
• The period during which a food product remains safe to consume and retains its desired sensory, chemical, and microbiological characteristics.
• Proper packaging, such as nitrogen flushing, plays a crucial role in extending the shelf life of food items.

Q56. Answer: (a) 1

Given series:

© 2 © # * 6 € 4 5 3 € 1 1 € 6 7 # 7 4 £ 6 €

Condition to be checked:

A number which is immediately preceded by a number and also immediately followed by a number.

Number → Number → Number

Let's analyze the series from left to right to find such patterns:

© 2 © # * 6 € 4 5 3 € 1 1 € 6 7 # 7 4 £ 6 €

Thus there is one such pattern (4 5 3) that is following the above condition.

Hence, the correct answer is "Option 1".

Mistake Points

Immediately preceded by means immediately before or to come just before.

Immediately followed by means immediately after or to come just after.

Q57. Answer: (b) Only conclusion (II) follows.

Given Statements:

1. Some nuts are black.
2. All black are crows.
3. All crows are pens.

The least possible Venn diagram for the given statements:

Conclusions:

I. All nuts are black. → False. (The statement "Some nuts are black" only guarantees an overlap, not that all nuts are black. There can be nuts that are not black.)

II. Some black are crows. → True. (If "All black are crows", it logically follows that "Some black are crows".)

Therefore, only conclusion II follows.

Hence, the correct answer is "Option 2".

Q58. Answer: (c) GJ65

The pattern followed here is.

Thus, the missing term in the series is GJ65.

Hence, the correct answer is Option 3.

Q59. Answer: (b) Only 2 and 3

The correct answer is Option 2.

Key Points

• Exercise KHANJAR-XII was conducted in March 2025, focusing primarily on Counter Terrorism and Special Forces operations.

• It was a joint military exercise between India and Kyrgyzstan, involving troops from The Parachute Regiment (Special Forces) of India and the Kyrgyz Scorpion Brigade.

• The exercise aimed to enhance interoperability and coordination between the two nations in Special Forces operations.

• The exercise did not take place in the Ladakh region, making statement 1 incorrect.

• Statements 2 and 3 are correct, as the exercise emphasized Counter Terrorism and involved specific military units from both nations.

Additional Information

• Counter Terrorism Operations:

• These operations are aimed at combating terrorist activities and ensuring national security.

• They involve the use of Special Forces trained in rapid response, reconnaissance, and neutralization of threats.

• Special Forces:

• Special Forces are elite military units trained for specialized operations, such as counter-terrorism, hostage rescue, and unconventional warfare.

• The Parachute Regiment (Special Forces) of India is known for its expertise in conducting high-risk missions.

• Kyrgyz Scorpion Brigade:

• It is a Special Forces unit of Kyrgyzstan, recognized for its capabilities in mountain warfare and counter-terrorism.

• The brigade regularly participates in joint exercises to enhance its operational effectiveness.

• India-Kyrgyzstan Defense Cooperation:

• India and Kyrgyzstan share strong defense ties, with regular joint exercises like KHANJAR enhancing bilateral cooperation.

• These exercises are crucial for promoting regional security and fostering mutual trust between the two nations.

Q60. Answer: (b) Pitt's India Act 1784

The correct answer is Pitt's India Act 1784.

Key Points

• The Pitt's India Act 1784 was introduced by the British Parliament to address the shortcomings of the Regulating Act of 1773.

• It established a system of dual control, dividing powers between the British Crown and the East India Company for the governance of British India.

• The Act created a Board of Control in Britain to supervise the administration of India and ensure a regular code for internal governance.

• This legislation marked the first significant step toward centralizing British control over Indian administrative matters.

• It laid the groundwork for future legislative and administrative reforms in British India, ensuring a more structured approach to governance.

Additional Information

• Regulating Act 1773:

• This was the first attempt by the British Parliament to regulate the activities of the East India Company in India.

• It established the office of the Governor-General of Bengal and a Supreme Court at Calcutta.

• However, it lacked clear provisions for effective control, leading to administrative inefficiencies.

• Charter Act of 1813:

• It ended the trade monopoly of the East India Company, except for trade in tea and trade with China.

• It allowed Christian missionaries to propagate their religion in India for the first time.

• It earmarked funds for the promotion of education in India.

• Charter Act of 1793:

• This Act renewed the East India Company's charter for another 20 years.

• It granted the company the authority to raise revenue and carry on administrative functions in India.

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• It reaffirmed the supremacy of the British Crown over the company's affairs.
• Significance of Pitt's India Act:
• It introduced significant checks and balances to avoid mismanagement in India.
• The Board of Control ensured that the company's decisions aligned with British interests.
• This Act marked the beginning of British Parliament's direct involvement in Indian governance.

Q61. Answer: (a) 14,850

Shortcut Trick
Income ratio = 4 : 3 | Expenditure ratio = 16 : 17 | Savings = Rs. 15,000 & Rs. 9,000
Applying cross-multiplication: (4 × 17) − (3 × 16) = 20 units
Value difference = (17 × 15000) − (16 × 9000) = 255000 − 144000 = 111000
20 units = 111000 => 1 unit = 5550
Total Expenditure = Total Income − Total Savings = 7(5550) − 24000 = 14850
Therefore The correct answer is Rs. 14,850.
Alternate Method
Given:
Ratio of incomes of Seema and Darshan = 4 : 3
Savings of Seema = Rs. 15,000 and Savings of Darshan = Rs. 9,000
Ratio of their expenditures = 16 : 17
Formula Used:
Income = Expenditure + Savings => Expenditure = Income − Savings
Seema
Income = 4x
Savings = Rs. 15,000
Exp = 4x − 15000
Darshan
Income = 3x
Savings = Rs. 9,000
Exp = 3x − 9000
Expenditure Ratio = 16 : 17
Calculations:
Let the incomes of Seema and Darshan be 4x and 3x respectively.
=> Expenditure of Seema = 4x − 15000
=> Expenditure of Darshan = 3x − 9000
=> Ratio of expenditures = (4x − 15000) / (3x − 9000) = 16 / 17
=> 17 × (4x − 15000) = 16 × (3x − 9000)
=> 68x − 255000 = 48x − 144000
=> 68x − 48x = 255000 − 144000
=> 20x = 111000
=> x = 5550
=> Total Income = 4x + 3x = 7x = 7 × 5550 = 38850
=> Total Savings = 15000 + 9000 = 24000
=> Total Expenditure = Total Income − Total Savings
=> Total Expenditure = 38850 − 24000 = 14850
Therefore The correct answer is Rs. 14,850.
Additional Information
Cross-Multiplication Method
This method is highly effective when two quantities are given in an initial ratio, undergo specific changes, and result in a final ratio. It easily bypasses conventional lengthy equations.
Income, Expenditure & Savings
A fundamental equation for general aptitude mathematical problems is Income = Expenditure + Savings. Changes in income directly affect the other two interconnected parameters.

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Compound Ratio

When two or more ratios are multiplied together term-wise, the resulting ratio is known as a compound ratio. For a : b and c : d, it simplifies to ac : bd.

Q62. Answer: (b) strengthen colonial rule

The correct answer is strengthen colonial rule.

Key Points

• The British introduced modern education in India primarily to create a class of educated Indians who could assist in administrative tasks, thereby strengthening colonial control.

• The English Education Act of 1835, spearheaded by Thomas Babington Macaulay, promoted Western knowledge and English as the medium of instruction to serve colonial interests.

• Educated Indians were intended to act as intermediaries between the British rulers and the Indian population, ensuring smoother governance.

• The curriculum emphasized British history, culture, and values, aiming to instill loyalty to the colonial government and suppress any anti-colonial sentiment.

• This education policy created a workforce for clerical and subordinate positions in the British administration, fulfilling the economic and political needs of the Empire.

Additional Information

• Macaulay’s Minute (1835)

• Thomas Babington Macaulay advocated for the promotion of English education in India, emphasizing Western literature and science over traditional Indian knowledge systems.

• His famous "Minute on Indian Education" argued that educating a small elite group in English would create a class of individuals "Indian in blood and color but English in taste, opinions, morals, and intellect."

• Wood’s Despatch (1854)

• Known as the "Magna Carta of English Education in India," it laid the foundation for systematic education in the country.

• It recommended the establishment of universities in major cities and schools across various levels, with English as the primary medium of instruction for higher education.

• Impact of Colonial Education

• Led to the emergence of a new middle class, which played a significant role in the Indian independence movement.

• Undermined traditional Indian education systems and cultural values.

• Created social divisions, as access to education was limited to a privileged few.

• Downward Filtration Theory

• It was the idea that educating a small elite group would eventually lead to the spread of knowledge and Western values to the broader population.

• This theory justified the limited investment in mass education by the British colonial government.

Q63. Answer: (b) 1674

The correct answer is 1674.

Key Points

• Francois Martin established Pondicherry in 1674 as a French trading settlement.

• Pondicherry became the Headquarters of French India, serving as the political and commercial hub for French activities in the region.

• Francois Martin was the first Governor-General of French India, playing a significant role in expanding French influence in southern India.

• The French East India Company chose Pondicherry for its strategic location along the Coromandel Coast, enabling access to regional trade networks.

• The settlement marked the beginning of French colonial rule in India, which lasted until the mid-20th century.

Additional Information

• Pondicherry's Historical Significance:

• Pondicherry, now Puducherry, was a key colonial port and administrative center during French rule.

• The city retains its French heritage through architecture, language, and cultural practices.

• French East India Company:

• Established in 1664, the French East India Company aimed to compete with other European trading companies in Asia.

• It focused on trade in spices, textiles, and other goods from India and Southeast Asia.

• Francois Martin's Contributions:

• Francois Martin laid the foundation for French colonial expansion in India by fostering trade and alliances with local rulers.
• He played a critical role in defending Pondicherry against rival European powers and regional conflicts.
• French Colonial Legacy in India:
• The French retained territories like Pondicherry, Mahe, Karaikal, and Yanam until their integration into India in 1954.
• The influence of French culture and governance continues to shape these regions, especially in architecture and cuisine.

Q64. Answer: (b) 3640π

Shortcut Trick
Base Area = $\pi r^2 = 3136\pi$ => $r = \sqrt{3136} = 56$ cm.
Curved Surface Area (CSA) = πrl.
Given Slant Height (l) = 65 cm.
CSA = $\pi \times 56 \times 65 = 3640\pi$ cm².
Therefore The correct answer is 3640π cm².
Alternate Method
Given:
Base Area of cone = 3136π cm²
Slant Height (l) = 65 cm
Formula:
Area of circular base = πr^2
Curved Surface Area = πrl
Calculations:
=> $\pi r^2 = 3136\pi$
=> $r^2 = 3136$
=> $r = \sqrt{3136} = 56$ cm
=> CSA = $\pi \times r \times l$
=> CSA = $\pi \times 56 \times 65$
=> CSA = 3640π cm²
Therefore The correct answer is 3640π cm².
Additional Information
Total Surface Area of Cone
It is the sum of the curved surface area and the base area: TSA = $\pi r(l + r)$.
Volume of a Cone
The capacity of a cone is given by: Volume = $(1/3)\pi r^2 h$, where h is the vertical height.
Relation between h, r, and l
By Pythagoras theorem in a right circular cone: $l^2 = r^2 + h^2$.

Q65. Answer: (b) 629

Given interchange rules:
• '+' and '−' are interchanged.
• '×' and '÷' are interchanged.
The given equation is:
121 ÷ 6 + 384 × 3 − 31 = ?
Replace the operators with their corresponding new meanings:
121 × 6 − 384 ÷ 3 + 31 = ?
Now, we solve the equation following the BODMAS rule:
= 121 × 6 − 384 ÷ 3 + 31
= 726 − 128 + 31
= 598 + 31
= 629
Hence, the correct answer is "Option 2".

Q66. Answer: (b) 67

Shortcut Trick

Arrange the given 11 observations in ascending order:

41, 44, 45, 55, 58, 67, 69, 71, 78, 88, 95

Since the number of terms (N = 11) is odd, the median is the middle term:

Median = ((N + 1) ÷ 2)^(th) term = 6^(th) term = 67

Therefore The correct answer is 67.

Alternate Method

Given observations: 71, 95, 67, 55, 78, 45, 58, 44, 69, 41, 88

Total number of observations (N): 11

Formula:

When N is odd, Median = Value of ((N + 1) ÷ 2)^(th) observation in the sorted list.

Step-by-step calculation:

=> Arrange the data in ascending order: 41, 44, 45, 55, 58, 67, 69, 71, 78, 88, 95

=> Count of observations (N) = 11

=> Since N is odd, Median = ((11 + 1) ÷ 2)^(th) term

=> Median = 6^(th) term

=> 6^(th) term in the sorted list is 67.

=> Therefore, the median of the given observations is 67.

Why other options are incorrect:

=> Option (1) 69: This is the 7^(th) term in the sorted list, not the middle term.

=> Option (3) 55: This is the 4^(th) term in the sorted list, which is not the middle term.

=> Option (4) 58: This is the 5^(th) term in the sorted list, which is not the middle term.

Therefore The correct answer is 67.

Additional Information

Median for Even Number of Terms

If N is even, the median is the average of the (N ÷ 2)^(th) and ((N ÷ 2) + 1)^(th) terms. Formula: Median = [Value of (N/2)^(th) term + Value of (N/2 + 1)^(th) term] ÷ 2.

Mean (Arithmetic Average)

The sum of all observations divided by the total number of observations. Formula: Mean = (Sum of all observations) ÷ N.

Mode

The value that appears most frequently in a data set. A data set can have one mode, more than one mode, or no mode at all.

Empirical Relationship

The relationship between Mean, Median, and Mode for moderately skewed distributions. Formula: Mode = 3 × Median − 2 × Mean.

Q67. Answer: (a) 2,400 km

The correct answer is 2,400 km.

Key Points

• The Northern Plains of India stretch approximately 2,400 km from west to east, covering a vast area across northern India.

• These plains span major Indian states such as Punjab, Haryana, Uttar Pradesh, Bihar, and West Bengal.

• The plains are formed by the deposition of sediments carried by the Indus, Ganga, and Brahmaputra river systems, making them one of the most fertile regions in the world.

• They are classified into three major divisions: the Punjab Plains (western part), the Ganga Plains (central part), and the Brahmaputra Plains (eastern part).

• These plains support a dense population due to fertile soil, abundant water resources, and favorable climatic conditions for agriculture.

Additional Information

• Formation of Northern Plains:

• These plains were formed as a result of millions of years of sediment deposition by the Himalayan rivers.

• The alluvial soil in this region is highly fertile, supporting extensive agricultural activities.

• Geographical Significance:

• The Northern Plains serve as the heartland of Indian agriculture, producing crops like wheat, rice, sugarcane, and pulses.

• The plains are home to several major cities, including Delhi, Lucknow, Patna, and Kolkata.
• Rivers of the Northern Plains:
• The Indus River system forms the western plains, including the Punjab Plains.
• The Ganga River system forms the central plains, while the Brahmaputra River system forms the eastern plains.
• Subdivisions of the Plains:
• The Bhabar Belt: Narrow belt of coarse sediments near the foothills of the Himalayas.
• The Terai Belt: Marshy and swampy region located south of the Bhabar.
• The Bangar and Khadar: Older alluvium (Bangar) and newer, fertile alluvium (Khadar) regions.
• Economic Importance:
• The plains are a hub for agriculture, trade, and industries due to their flat terrain and fertile soil.
• They are densely populated and contribute significantly to the Indian economy.

Q68. Answer: (d) Tropical deciduous forests

The correct answer is Tropical deciduous forests.

Key Points

• Tropical deciduous forests are predominantly found in regions of India receiving annual rainfall between 100 cm and 200 cm.
• These forests are also known as monsoon forests due to their dependence on the seasonal monsoon rains.
• In India, tropical deciduous forests are widely spread across states such as Madhya Pradesh, Odisha, Chhattisgarh, Jharkhand, Maharashtra, and parts of Uttar Pradesh.
• The trees in these forests shed their leaves during the dry season to conserve water, which is a defining feature of tropical deciduous forests.
• Common species found in these forests include sal, teak, bamboo, sandalwood, and rosewood.

Additional Information

• Tropical Evergreen Forests:
• Found in areas receiving annual rainfall of over 200 cm, such as the Western Ghats, northeastern states, and Andaman and Nicobar Islands.
• These forests remain green throughout the year and are characterized by dense vegetation.
• Common species include mahogany, ebony, and rosewood.
• Thorn Forests:
• Located in regions with annual rainfall less than 50 cm, such as Rajasthan and parts of Gujarat.
• Vegetation primarily consists of thorny bushes, acacias, and cacti.
• These forests are adapted to arid conditions and have sparse vegetation.
• Alpine Forests:
• Found at high altitudes, above 3,000 meters, in regions such as the Himalayas.
• Characterized by coniferous trees like pine, fir, and spruce.
• These forests experience extremely cold temperatures and snowfall.
• Rainfall and Forest Types in India:
• Rainfall is a critical factor in determining the type of forest vegetation in a region.
• India's forests are classified into tropical evergreen, tropical deciduous, thorn, and alpine forests based on rainfall and climatic conditions.

Q69. Answer: (d) $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 56ac$

Shortcut Trick

Square each term: $(7a)^2 = 49a^2$, $(6b)^2 = 36b^2$, and $(4c)^2 = 16c^2$.

Calculate double products: $2(7a \times 6b) = 84ab$, $2(6b \times 4c) = 48bc$, and $2(4c \times 7a) = 56ac$.

Combine all terms: $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 56ac$.

Therefore The correct answer is $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 56ac$.

Alternate Method

Given Expression: $(7a + 6b + 4c)^2$

Formula Used: $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$

Comparing variables: $x = 7a$, $y = 6b$, $z = 4c$.

$\Rightarrow (7a + 6b + 4c)^2 = (7a)^2 + (6b)^2 + (4c)^2 + 2(7a)(6b) + 2(6b)(4c) + 2(4c)(7a)$

$\Rightarrow 49a^2 + 36b^2 + 16c^2 + 2(42ab) + 2(24bc) + 2(28ac)$

=> $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 56ac$

Therefore The correct answer is $49a^2 + 36b^2 + 16c^2 + 84ab + 48bc + 56ac$.

Additional Information

Square of a Trinomial

The expansion of $(a + b + c)^2$ always results in the sum of the squares of each term plus twice the product of every possible pair of terms.

Negative Terms in Expansion

If any term in the trinomial is negative, such as $(a - b + c)^2$, treat it as $(a + (-b) + c)^2$. The squared terms (a^2, b^2, c^2) remain positive, but the cross-products involving the negative term (like $-2ab$ and $-2bc$) will become negative.

Standard Algebraic Identity

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$.

Q70. Answer: (d) Rs. 40,700

Shortcut Trick

Effective CI rate for 2 years = 10% + 10% + (10 × 10) ÷ 100% = 21%

Effective SI rate for 2 years = 10% × 2 = 20%

Difference in interest rates = 21% − 20% = 1%

Given 1% of Principal = Rs. 407

=> Principal = 407 × 100 = 40700

Therefore The correct answer is Rs. 40,700.

Alternate Method

Given:

Difference between compound interest and simple interest (D) = Rs. 407

Rate of Interest (R) = 10% per annum

Time period (T) = 2 years

Formula Used:

Difference between CI and SI for 2 years: $D = P \times (R \div 100)^2$

Principal (100%)

Yr 1 Int: 10%

Yr 2 Int: 10%

10% of Yr 1

Diff: +1%

1% of P = Rs. 407

Calculations:

=> $D = P \times (R \div 100)^2$

=> $407 = P \times (10 \div 100)^2$

=> $407 = P \times (1 \div 10)^2$

=> $407 = P \times (1 \div 100)$

=> $P = 407 \times 100$

=> $P = 40700$

Therefore The correct answer is Rs. 40,700.

Additional Information

Difference for 3 Years

The difference between compound interest and simple interest on a sum for 3 years is calculated using the formula: $D = P \times (R \div 100)^2 \times (3 + R \div 100)$.

Effective Rate Method

For 2 years, compound interest can be directly computed using the successive percentage change formula: $CI\% = X + Y + (XY \div 100)\%$.

Half-Yearly Compounding

When compound interest is applied half-yearly, the annual rate of interest is halved ($R \div 2$) and the number of time periods is doubled ($2T$).

Rule of 72

To quickly estimate the number of years required to double a principal sum at a given compound interest rate, you can use the

formula: T ≈ 72 ÷ R.

Q71. Answer: (b) Ecuador

The correct answer is Ecuador.

Key Points

• On 13 April 2025, Ecuador held a presidential runoff election, resulting in the re-election of President Daniel Noboa.

• Daniel Noboa is one of the youngest presidents in Ecuador's history, having assumed office for his first term in 2023 at the age of 35.

• The runoff election was necessitated as no candidate secured the majority required in the first round of voting.

• Noboa's re-election campaign focused on economic reforms, crime reduction, and improving infrastructure in Ecuador.

• The election process was overseen by the National Electoral Council (CNE) of Ecuador to ensure transparency and fairness.

Additional Information

• Presidential Runoff Elections:

• A runoff election is held when no candidate secures the majority threshold (usually 50%+1) in the first round of voting.

• This system ensures that the elected president has broad support from the electorate.

• Daniel Noboa:

• Daniel Noboa is the son of Álvaro Noboa, a prominent Ecuadorian businessman and five-time presidential candidate.

• He is known for his business acumen and has worked extensively in the banana export industry, which is a key sector in Ecuador's economy.

• Ecuador's Political System:

• Ecuador is a democratic republic with a presidential system of government.

• The president serves as both the head of state and government and is elected for a four-year term.

• Key Challenges in Ecuador:

• Ecuador faces significant challenges, including economic instability, high crime rates, and migration issues.

• Addressing these issues formed the cornerstone of Noboa's campaign platform.

Q72. Answer: (a) Micro, small, medium enterprises

The correct answer is Micro, Small, Medium Enterprises.

Key Points

• MUDRA Yojana (Micro Units Development and Refinance Agency) provides financial support to micro and small enterprises through loans up to Rs. 10 lakh.

• Emergency Credit Line Guarantee Scheme (ECLGS) was launched to provide additional working capital loans to MSMEs affected by the COVID-19 pandemic.

• SFURTI (Scheme of Fund for Regeneration of Traditional Industries) focuses on developing traditional industries and clusters, boosting the MSME sector.

• RAMP (Raising and Accelerating MSME Performance) scheme aims to strengthen MSME institutions, improve access to market and credit, and foster innovation.

• Udyami Bharat is an umbrella initiative that integrates schemes like MUDRA, SFURTI, and others to promote entrepreneurship and enhance the MSME ecosystem.

Additional Information

• Definition of MSMEs:

• MSMEs are defined based on investment in plant and machinery or equipment and annual turnover as per the MSME Act 2006.

• Micro Enterprise

• Investment in Plant & Machinery/Equipment: up to Rs. 2.5 crore

• Annual Turnover: up to Rs. 10 crore

• Small Enterprise

• Investment in Plant & Machinery/Equipment: up to Rs. 25 crore

• Annual Turnover: up to Rs. 100 crore

• Medium Enterprise

• Investment in Plant & Machinery/Equipment: up to Rs. 125 crore

• Annual Turnover: up to Rs. 500 crore

• Significance of MSMEs:

• Contribution to GDP: Around 30% of India’s GDP.

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• Contribution to Manufacturing Output: Nearly 45% of the total manufacturing output.
• Contribution to Exports: About 40–45% of India's total exports.
• Employment Generation: MSMEs employ over 12 crore individuals (an increase from 11 crore earlier).
• MSMEs are critical for promoting balanced regional development and reducing income disparities.
• Challenges faced by MSMEs:
• Limited access to credit and financial support.
• Inadequate infrastructure and technology adoption.
• High compliance costs and lack of skilled labor.
• Government Initiatives for MSMEs:
• Atmanirbhar Bharat: Focuses on self-reliance and includes MSME sector reforms.
• Digital MSME: Promotes IT adoption to enhance competitiveness.
• Zero Defect Zero Effect (ZED): Encourages quality manufacturing with minimal environmental impact.

Q73. Answer: (d) 924 min

Shortcut Trick
Let the pipes be A, B, and C (waste pipe).
Total work = LCM of 44, 84, and 28 = 924 units.
Efficiency of A = 21, B = 11, A+B+C = 33.
Efficiency of C = 33 − (21 + 11) = 33 − 32 = 1 unit/min.
Time taken by C to empty = 924 ÷ 1 = 924 min.
Therefore The correct answer is 924 min.
Alternate Method
Given: Filling Pipe 1 = 44 min, Filling Pipe 2 = 84 min, Combined (with waste pipe) = 28 min.
Formula Used: Total Work = Time × Efficiency

Pipe	Time (min)	Total Work	Efficiency
Pipe A	44	924	21
Pipe B	84	11	
A + B − C	28	33	

=> Efficiency of Pipe A = 924 ÷ 44 = 21
=> Efficiency of Pipe B = 924 ÷ 84 = 11
=> Combined Efficiency (A + B − C) = 924 ÷ 28 = 33
=> 21 + 11 − Efficiency of C = 33
=> 32 − Efficiency of C = 33
=> Efficiency of C (Waste Pipe) = 32 − 33 = −1 (Negative sign denotes emptying)
=> Time to empty the cistern = Total Work ÷ Efficiency of C
=> Time = 924 ÷ 1 = 924 min
Therefore The correct answer is 924 min.
Additional Information
Pipes and Cisterns Efficiency
Filling pipes have positive efficiency, while emptying or waste pipes have negative efficiency.
Combined Work Formula
If pipe A fills in x min and pipe B empties in y min, net work in 1 min = (1/x) − (1/y).
LCM Method
Always take the Least Common Multiple of individual time periods to assume a convenient Total Work value.

Q74. Answer: (a) Behind Text or In Front of Text

The correct answer is Behind Text or In Front of Text.
Key Points
• The "Behind Text" and "In Front of Text" layout options in MS Word allow images to be placed independently of the text flow.
• These options provide the highest flexibility, as they allow users to position images precisely anywhere on the page.
• Using these options, the image does not interact with or affect the alignment of the surrounding text, making it ideal for creative

layouts.
• These settings are especially useful when designing documents with overlapping elements or freeform arrangements.
• To enable these options, right-click on the image, select "Wrap Text," and then choose either "Behind Text" or "In Front of Text."
Additional Information
• Text Wrapping Options in MS Word
• "Square": Wraps text around the border of the image in a square pattern.
• "Tight": Wraps text more closely around the edges of the image.
• "Through": Allows text to flow through transparent or irregular areas of an image.
• "Behind Text/In Front of Text": Positions the image independently of text flow, allowing free placement on the page.
• Use Cases of "Behind Text" and "In Front of Text"
• "Behind Text" is often used for watermarks or background images in documents.
• "In Front of Text" is helpful for placing logos or decorative elements prominently in a document.
• Anchoring Images
• Anchoring ensures that the image stays in the same relative position to a paragraph or page.
• "Behind Text/In Front of Text" images are not bound by anchoring, offering maximum freedom.
• Shortcut for Layout Options
• Click on the image and the "Layout Options" button appears next to it for quick access.
• From there, you can quickly select any of the wrapping styles.

Q75. Answer: (b) PVBG

The logic followed in this pattern involves an alternating alphabetical shift for each letter position:
• First letter: -3
• Second letter: -5
• Third letter: -3
• Fourth letter: -5
Let's verify this logic with the given examples:
For 'EUQF' related to 'BPNA':
For 'YKKV' related to 'VFHQ':
The consistent pattern observed is: -3, -5, -3, -5 for each letter position.
Applying the same logic to 'SAEL':
Thus, 'SAEL' will be coded as PVBG.
Hence, the correct answer is "Option 2".

Q76. Answer: (c) 10.32%

Shortcut Trick
Ratio of Marked Price (MP) to Cost Price (CP) is given by (100 + Profit%)/(100 − Discount%).
Given Marked Price is 26% above Cost Price, so MP/CP = 126/100.
Ratio equation: 126/100 = (100 + 13)/(100 − D).
126/100 = 113/(100 − D) => 100 − D = 11300 ÷ 126.
100 − D ≈ 89.6825 => D = 100 − 89.6825 = 10.3175%.
Therefore The correct answer is 10.32%.
Alternate Method
Given → Marked Price (MP) = Rs. 568, MP = 126% of CP, Profit = 13%.
Formulas → CP = MP × 100 ÷ (100 + Markup%); SP = CP × (100 + Profit%) ÷ 100; Discount% = (MP − SP) ÷ MP × 100.
=> Calculate Cost Price (CP): 568 = CP × 126/100 => CP = (568 × 100) ÷ 126 ≈ Rs. 450.79.
=> Calculate Selling Price (SP): SP = 450.79 × 113/100 ≈ Rs. 509.39.
=> Calculate Discount Value: MP − SP = 568 − 509.39 = Rs. 58.61.
=> Discount Percentage = (58.61 ÷ 568) × 100 ≈ 10.318%.
Therefore The correct answer is 10.32%.
Additional Information
Relationship between MP, CP, Profit, and Discount
The formula MP/CP = (100 + P%)/(100 − D%) is derived by equating the Selling Price calculated from both CP and MP sides.

Marked Price

It is also known as the List Price or MRP. Discount is always calculated on the Marked Price unless stated otherwise.

Q77. Answer: (a) 34.4

The logic followed here is:

Thus, the missing term in the series is 34.4.

Hence, the correct answer is "Option 1".

Q78. Answer: (d) National Safety Week

The correct answer is National Safety Week.

Key Points

• National Safety Week is observed annually in India from March 4th to March 10th to promote safety awareness in industrial workplaces and other sectors.

• The initiative was started by the National Safety Council (NSC), a non-profit organization established by the Ministry of Labour and Employment, Government of India, in 1966.

• It aims to raise awareness about the importance of safety protocols, accident prevention, and promoting a safety-first culture in industries.

• The week includes activities like safety training programs, workshops, poster campaigns, and quizzes emphasizing workplace safety.

• The theme for National Safety Week varies each year, focusing on specific aspects of industrial and occupational safety.

Additional Information

• National Safety Council (NSC):

• Established on 4 March 1966 by the Ministry of Labour and Employment, India, NSC is a non-governmental organization focused on promoting safety awareness.

• It plays a critical role in implementing safety measures and conducting training sessions across various industries.

• Occupational Safety and Health (OSH):

• OSH refers to practices and policies aimed at ensuring the health, safety, and welfare of workers in their workplaces.

• Common hazards include physical, chemical, biological, and ergonomic risks.

• Industrial Accidents:

• An industrial accident is an unexpected event that results in injury, illness, or fatalities within a workplace.

• Major causes include inadequate safety measures, lack of training, and unsafe equipment.

• Workplace Safety Training:

• Workplace safety training involves educating employees about protocols to prevent accidents and injuries in the workplace.

• It is often mandated by government regulations and includes drills, workshops, and certifications.

Q79. Answer: (d) © C R ©

Given:

Number/symbol	**6**	**@**	**8**	**5**	**$**	**&**	**3**	**%**	**#**	**7**	**•**	**9**	**4**	**2**
Code	F	G	H	N	L	K	C	Q	Z	P	R	B	U	E

Now, the group of numbers and symbols is: 5 3 + 4

Let's analyze the elements:

• First element: 5 (Odd Number)

• Second element: 3 (Number, not a perfect square)

• Third element: + (Symbol)

• Last element: 4 (Even Number)

Checking Conditions:

1. Is the first element a symbol and the last a number?

• First element '5' is a number, not a symbol.

• Condition 1 does NOT apply.

2. Is the first element an odd number and the last an even number?

• First element '5' is an odd number. (TRUE)

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• Last element '4' is an even number. (TRUE)

• Condition 2 applies. The first and last elements (5 and 4) are to be coded as ©.

3. Are both second and third elements perfect squares?

• Second element '3' is not a perfect square.

• Third element '+' is a symbol, not a number.

• Condition 3 does NOT apply.

Based on the conditions, only Condition 2 applies. For the elements not affected by Condition 2, their codes will be taken directly from the table.

Final Code Assembly:

• First element (5): © (from Condition 2)

• Second element (3): C (from table)

• Third element (+): R (from table)

• Last element (4): © (from Condition 2)

Thus, the code for 5 3 + 4 is ©CR©.

Hence, the correct answer is "Option 4".

Q80. Answer: (d) Three

Given: Six people M, N, O, P, Y, and Z live on six different floors (numbered 1 to 6 from bottom to top).

Let's deduce the floor arrangement based on the given clues:

1) "No one lives above Z."

This means Z lives on the topmost floor (Floor 6).

Floor	Person
6	Z
5	
4	
3	
2	
1	

2) "Only two people live between Z and O."

Since Z is on Floor 6, and two people are between Z and O, O must be on Floor 3.

Floor	Person
6	Z
5	
4	
3	O
2	
1	

3) "P lives below O but above Y."

Since O is on Floor 3, P must be on Floor 2, and Y must be on Floor 1 for this condition to hold.

Floor	Person
6	Z
5	
4	
3	O
2	P

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1	Y

4) "Only two people live between N and P."

P is on Floor 2. For two people to live between N and P, N must be on Floor 5 (with O on Floor 3 and the person on Floor 4 between them).

Floor	Person
6	Z
5	N
4	
3	O
2	P
1	Y

All people except M have been placed. Therefore, M must live on the remaining vacant floor, which is Floor 4.

Final arrangement from top to bottom:

Floor	Person
6	Z
5	N
4	M
3	O
2	P
1	Y

Thus, there are 3 people living below M.

Hence, the correct answer is "Option 4".

Q81. Answer: (a) Two

Given, seven people, I, J, K, L, O, P and Q are sitting in a row, facing north.

Only I sits to the right of P.

Only one person sits between O and P.

Only two people sit between Q and O.

K sits at some place to the right of L but at some place to the left of J.

So, two people sit between J and L.

Hence, the correct answer is "Option 1".

Q82. Answer: (d) Prathamakayastha

The correct answer is Prathamakayastha.

Key Points

• The title Prathamakayastha was used to denote the head of the Kayastha community during ancient and medieval periods in India.

• The Kayastha community was traditionally associated with administrative and clerical roles in the bureaucracy of Indian kingdoms.

• The Prathamakayastha oversaw the functioning of scribes, record keepers, and other clerical staff within the administrative framework.

• Kayasthas were regarded as a literate and influential community due to their expertise in management, accounting, and record-keeping.

• This community played a significant role in maintaining governance and administration, especially during the Gupta period and later in medieval India.

Additional Information

• Kayastha Community:

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• The Kayasthas are a prominent community in India traditionally linked to the roles of scribes and administrators.
• They gained prominence during the Gupta period and later became key figures in the Mughal and British administrations.
• Kayasthas were known for their proficiency in multiple languages, including Sanskrit, Persian, and local dialects.
• Prathamakayastha Role:
• The Prathamakayastha acted as the chief of the Kayastha scribes and administrators, ensuring accuracy in record-keeping and governance.
• This role required expertise in legal, financial, and administrative matters.
• Other Titles:
• Titles like Prathamakulika and Pustapala were also used for administrative officers, but they differed in function from Prathamakayastha.
• Prathamakulika often referred to senior officers, while Pustapala was responsible for maintaining records and archives.
• Historical Significance:
• The administrative expertise of Kayasthas contributed significantly to the efficiency of Indian kingdoms.
• Their influence extended beyond administration into fields like literature, law, and governance.

Q83. Answer: (c) = DAG, % = PMS

Given:
: IFL :: KHN : %
Analysis of Options:
Option 1) # = CJS, % = KJI
For # (CJS) to IFL
For KHN to % (KJI)
Since the pattern for CJS to IFL (+6, -4, -7) is not the same as the pattern for KHN to KJI (0, +2, -5),
Option 1 is incorrect.
Option 2) # = LPG, % = NUY
For # (LPG) to IFL
For KHN to % (NUY)
Since the pattern for LPG to IFL (-3, -10, +5) is not the same as the pattern for KHN to NUY (+3, +13, +11),
Option 2 is incorrect.
Option 3) # = DAG, % = PMS
For # (DAG) to IFL
For KHN to % (PMS)
Since the pattern for DAG to IFL (+5, +5, +5) is the same as the pattern for KHN to PMS (+5, +5, +5), Option 3 is correct.
Option 4) # = KHY, % = NHU
For # (KHY) to IFL
For KHN to % (NHU)
Since the pattern for KHY to IFL (-2, -2, -13) is not the same as the pattern for KHN to NHU (+3, +13, +7), Option 4 is incorrect.
Thus, the analogy holds true only for Option 3 where the pattern (+5, +5, +5) is consistent for both pairs.
Hence, the correct answer is "Option 3".

Q84. Answer: (d) Governments may collapse due to no-confidence motions or coalition disputes

The correct answer is Governments may collapse due to no-confidence motions or coalition disputes.
Key Points
• In parliamentary systems, governments are often formed by coalitions, which can be unstable due to conflicting interests among coalition partners.
• A no-confidence motion is a parliamentary procedure that allows members to vote on whether they continue to support the government, and its passage can lead to government collapse.
• Frequent disputes between coalition parties or failure to maintain majority support can result in political instability and snap elections.
• Such instability can disrupt long-term policy-making and governance, affecting the nation's economic and social progress.
• Countries with parliamentary systems, such as India and Italy, have experienced instances where coalition disputes have led to frequent changes in government.
Additional Information

• Coalition Government:
• A government formed by multiple political parties, often seen in parliamentary systems where no single party has a majority.
• While it promotes representation of diverse viewpoints, it can also lead to disagreements and policy deadlock.
• No-Confidence Motion:
• A formal vote in the legislature to determine if the current government has the support of the majority of members.
• If passed, it typically results in the resignation of the Prime Minister and the dissolution of the government.
• Snap Elections:
• Elections called earlier than expected due to political instability, often following a government collapse.
• They can be costly and disrupt governance, but are necessary to restore stability and legitimacy.
• Parliamentary System:
• A form of government where the executive is derived from the legislative branch and is accountable to it.
• The Prime Minister is typically the leader of the majority party or coalition in parliament.
• Examples of Instability:
• Italy has experienced over 60 governments since World War II due to coalition disputes.
• India has also faced instances of government collapse during coalition eras, particularly in the 1990s.

Q85. Answer: (b) (92, 110, 18)

The logic followed here is:
Logic: 3rd number = 2nd number - 1st number.
For, (32, 47, 15)
=> 47 - 32 = 15.
For, (56, 81, 25)
=> 81 - 56 = 25.
Let's check options one by one:
Option 1) (17, 72, 14)
=> 72 - 17 = 55 ≠ 14.
Here, logic not followed.
Option 2) (92, 110, 18)
=> 110 - 92 = 18.
Here, logic followed.
Option 3) (29, 84, 10)
=> 84 - 29 = 55 ≠ 10.
Here, logic not followed.
Option 4) (18, 65, 11)
=> 65 - 18 = 47 ≠ 11.
Here, logic not followed.
Hence, the correct answer is "Option 2".

Q86. Answer: (d) 16 km towards the east

Given,
Mr. Q starts from Point Z and drives 7 km towards the north.
He then takes a left turn, drives 9 km, turns right and drives 6 km.
He then takes a left turn and drives 7 km.
He takes a final left turn, drives 13 km and stops at Point A.
Movement of Mr. Q is,
Therefore, he should drive 16 km towards the East to reach Point Z again.
Hence, the correct answer is "Option 4".

Q87. Answer: (c) 28

The correct answer is 28.
Key Points
• A total of 28 athletes from the Khelo India program were included in India's Paris 2024 Olympics contingent, as per February 2025 data.

• Khelo India is a flagship program launched by the Government of India to promote sports and identify young talent across the nation.

• The inclusion of Khelo India athletes in the Olympics highlights the success of the program in nurturing sports talent.

• The Khelo India initiative provides funding, training, and international exposure to promising athletes, helping them compete at the global level.

• The selected athletes come from diverse sports disciplines, showcasing India's growing strength across multiple categories in international competitions.

Additional Information

• Khelo India Program

• Launched by the Ministry of Youth Affairs and Sports in 2018, the program aims to strengthen India's sports ecosystem.

• It includes initiatives such as the Khelo India Youth Games and Khelo India University Games.

• Under this program, selected athletes receive financial assistance of Rs. 5 lakh annually for training and development.

• Paris 2024 Olympics

• The Paris 2024 Olympics will be held from 26 July to 11 August 2024.

• It is the 33rd edition of the Summer Olympic Games, returning to Paris after 100 years (last hosted in 1924).

• The event will feature 32 sports and 329 events with athletes from over 200 nations.

• Impact of Khelo India

• The program has successfully identified and nurtured athletes from remote and underprivileged regions.

• It has contributed to the rise of medal-winning athletes in international competitions like the Olympics and Asian Games.

• The initiative aligns with India's vision of becoming a global sports powerhouse.

• Olympic Selection Process

• Athletes qualify for the Olympics through stringent national and international trials.

• Selection is based on performance in qualifying tournaments and adherence to international standards.

• Support programs like Khelo India play a vital role in preparing athletes for these trials.

Q88. Answer: (b) Poverty Gap Index

The correct answer is Poverty Gap Index.

Key Points

• The Poverty Gap Index measures the intensity of poverty by calculating the average shortfall of incomes of the poor relative to the poverty line.

• It highlights the depth of poverty by determining how far individuals fall below the poverty line on average.

• The Poverty Gap Index is expressed as a proportion of the poverty line, making it a useful tool for comparing poverty across different regions or countries.

• A higher Poverty Gap Index indicates deeper poverty, showing that the poor are further away from the poverty threshold.

• This index is widely used in socio-economic studies for policy formulation aimed at poverty alleviation.

Additional Information

• Gini Coefficient:

• A measure of income inequality within a population, ranging from 0 (perfect equality) to 1 (perfect inequality).

• It does not account for poverty depth or distribution below the poverty line.

• Headcount Ratio:

• Represents the proportion of the population living below the poverty line.

• It is a simple measure but does not provide information about the intensity or depth of poverty.

• Dependency Ratio:

• The ratio of dependents (people aged below 15 and above 64) to the working-age population.

• It is used to analyze demographic and economic burdens but is unrelated to poverty measurement.

• Importance of Poverty Metrics:

• Poverty metrics like the Poverty Gap Index help policymakers design targeted interventions for poverty reduction.

• They provide insights into not just the prevalence but also the severity of poverty.

Q89. Answer: (b) 276

The logic followed here is:

Hence, the correct answer is "Option 2".

Q90. Answer: (c) 17

Shortcut Trick

If the average of a total set and the average of its subset are equal, then the average of the remaining elements must also be equal to the same value.

Overall average of 9 numbers = 17

Average of 7 numbers = 17

Remaining average (deviation is zero) = 17

Therefore The correct answer is 17.

Alternate Method

Given:

Total numbers = 9

Average of 9 numbers = 17

Average of 7 numbers = 17

Formula Used:

Sum of values = Average × Number of values

=> Sum of 9 numbers = 17 × 9 = 153

=> Sum of 7 numbers = 17 × 7 = 119

=> Sum of remaining 2 numbers = 153 − 119 = 34

=> Average of remaining 2 numbers = 34 ÷ 2 = 17

Therefore The correct answer is 17.

Additional Information

Arithmetic Mean

The average (mean) of a set of numbers is the sum of the numbers divided by the count of the numbers. Formula: Average = Σx ÷ n.

Weighted Average

When two groups with averages A1 and A2 and sizes n1 and n2 are combined, the new average is (n1A1 + n2A2) ÷ (n1 + n2).

Effect of Equal Values

If every number in a data set is increased, decreased, multiplied, or divided by a constant, the average also changes by that same constant.

Q91. Answer: (d) Ctrl + O

The correct answer is Ctrl + O.

Key Points

• Ctrl + O is the shortcut key to open a file in Microsoft PowerPoint directly from the application interface.

• This shortcut works universally across Microsoft Office applications, including Word, Excel, and PowerPoint.

• Using Ctrl + O, users can quickly access the file explorer to locate and open an existing presentation file.

• It enhances productivity by eliminating the need to navigate through multiple menus manually.

• The shortcut is applicable for all versions of Microsoft PowerPoint, including Office 365, 2019, 2016, and older versions.

Additional Information

• Microsoft PowerPoint:

• Microsoft PowerPoint is a presentation software developed by Microsoft as part of the Office Suite.

• It allows users to create slideshows composed of text, images, videos, and animations.

• PowerPoint is widely used for business presentations, educational purposes, and personal projects.

• The software is compatible with both Windows and macOS operating systems.

• Keyboard Shortcuts:

• Keyboard shortcuts are predefined key combinations that perform specific tasks in software applications.

• Common shortcuts in PowerPoint include Ctrl + S (Save), Ctrl + N (New Presentation), and Ctrl + P (Print).

• They are designed to improve efficiency and streamline workflow for users.

• File Formats in PowerPoint:

• Microsoft PowerPoint primarily uses the .pptx file format for saving presentations.

• Older versions of PowerPoint saved files in the .ppt format.

• It also supports exporting presentations as PDF, video files, or image formats.

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• Office Integration:

• Microsoft PowerPoint integrates seamlessly with other Office applications like Word, Excel, and Outlook.

• Users can embed Excel charts, Word tables, and multimedia content directly into their presentations.

• Collaboration features allow multiple users to edit presentations simultaneously using Office 365.

Q92. Answer: (d) 1

Shortcut Trick

For two quadratic equations $a1x^2 + b1x + c1 = 0$ and $a2x^2 + b2x + c2 = 0$ to have both roots common, the ratio of their coefficients must be equal: $a1/a2 = b1/b2 = c1/c2$.

Comparing $2x^2 + 8x + 6 = 0$ and $kx^2 + 4kx + 3 = 0$:

$2/k = 8/(4k) = 6/3$

Simplifying the ratios: $2/k = 2/k = 2$

Equating $2/k = 2 \Rightarrow k = 1$

Therefore The correct answer is 1.

Alternate Method

Given Equations:

1) $2x^2 + 8x + 6 = 0$

2) $kx^2 + 4kx + 3 = 0$

Step 1: Solve the first equation by factorisation.

$\Rightarrow 2x^2 + 8x + 6 = 0$

$\Rightarrow 2(x^2 + 4x + 3) = 0$

$\Rightarrow x^2 + 3x + x + 3 = 0$

$\Rightarrow x(x + 3) + 1(x + 3) = 0$

$\Rightarrow (x + 1)(x + 3) = 0$

$\Rightarrow$ Roots of the first equation are $x = -1$ and $x = -3$.

Step 2: Substitute the common roots into the second equation.

Since both roots are common, $x = -1$ must satisfy $kx^2 + 4kx + 3 = 0$:

$\Rightarrow k(-1)^2 + 4k(-1) + 3 = 0$

$\Rightarrow k - 4k + 3 = 0$

$\Rightarrow -3k = -3$

$\Rightarrow k = 1$

Therefore The correct answer is 1.

Additional Information

Condition for One Common Root

If only one root is common between two quadratic equations, the condition is $(c1a2 - c2a1)^2 = (a1b2 - a2b1)(b1c2 - b2c1)$.

Discriminant and Nature of Roots

The discriminant $D = b^2 - 4ac$ determines the nature: $D > 0$ (real/distinct), $D = 0$ (real/equal), $D < 0$ (imaginary).

Sum and Product of Roots

For any quadratic equation $ax^2 + bx + c = 0$, the sum of roots is $-b/a$ and the product of roots is c/a.

Q93. Answer: (c) 94

The correct answer is 94.

Key Points

• The periodic law, as formulated by Dmitri Mendeleev in 1869, originally revealed analogies among the 94 naturally occurring elements.

• These 94 elements include hydrogen (atomic number 1) to plutonium (atomic number 94), which occur naturally on Earth.

• Mendeleev's periodic table organized elements based on their atomic masses and chemical properties.

• The periodic table demonstrated repeating patterns (periodicity) of chemical properties, which helped predict the existence of undiscovered elements.

• Subsequent discoveries showed that atomic number (number of protons) is the most accurate method for organizing elements, refining the periodic law.

Additional Information

• Periodic Law:

• States that the properties of elements are a periodic function of their atomic numbers.
• The modern periodic table is arranged based on atomic numbers, not atomic masses, correcting early discrepancies.
• Naturally Occurring Elements:
• Of the 118 known elements, 94 occur naturally, while the rest are synthetic.
• Technetium (atomic number 43) and promethium (atomic number 61) are notable exceptions that are artificial.
• Periodic Trends:
• Include properties like electronegativity, ionization energy, atomic radius, and electron affinity.
• These trends help predict the reactivity and bonding behavior of elements.
• Discovery of New Elements:
• Since Mendeleev's time, new elements have been synthesized in laboratories, expanding the periodic table.
• Elements beyond uranium (atomic number 92) are called transuranic elements and are synthetic.

Q94. Answer: (d) To the Clipboard

The correct answer is To the Clipboard.

Key Points

• The Clipboard is a temporary storage location in MS Office where data such as text, images, or files are stored after performing the 'Cut' or 'Copy' operation.
• When text is cut, it is removed from its original location and stored in the Clipboard until it is pasted elsewhere.
• The Clipboard can store multiple items, depending on the software version being used. For example, MS Office versions like 365 allow storing up to 24 items in the Clipboard.
• Data stored in the Clipboard is typically cleared after closing the application or restarting the computer unless explicitly saved.
• Users can view and manage the Clipboard contents using the Clipboard pane in MS Office applications.

Additional Information

• Clipboard Functionality:
• The Clipboard is an essential tool used across various platforms and applications for efficient data transfer.
• It enables users to perform Cut, Copy, and Paste operations seamlessly.
• In MS Office, the Clipboard can be accessed via the Ribbon under the Home tab.
• Difference Between Cut and Copy:
• Cut: Removes the selected content from its original location and stores it in the Clipboard.
• Copy: Creates a duplicate of the selected content and stores it in the Clipboard without removing the original.
• Clipboard History:
• Some operating systems, like Windows 10 and later, offer a Clipboard History feature that retains multiple items for reuse.
• This feature can be activated by enabling it in the system settings.
• Keyboard Shortcuts:
• Common shortcuts for Clipboard operations include Ctrl + X for Cut, Ctrl + C for Copy, and Ctrl + V for Paste.
• These shortcuts help streamline workflows and improve productivity.

Q95. Answer: (a) 5

The given code language is:

T is common in both the word, and 5 is common in both the code.

Thus, 'T' is coded as '2'.

Hence, the correct answer is "Option 1".

Q96. Answer: (d) 84

BODMAS Rule:

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

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

Now, given the equation: 20 − 4 ÷ 7 + 12 × 4 = ?

After interchanging the specified signs, the new equation is:

20 × 4 + 7 − 12 ÷ 4 = ?

Perform operations according to BODMAS:

=> 20 × 4 + 7 − 12 ÷ 4
=> 80 + 7 − 12 ÷ 4
=> 80 + 7 − 3
=> 87 − 3
=> 84
Hence, the correct answer is "Option 4".

Q97. Answer: (c) FG−HL

The logic followed here is.
Option (1) 'QR-TU':
Option (2) 'DE-GH':
Option (3) 'FG-HL':
Option (4) 'WX-ZA':
Hence, the correct answer is "Option 3".

Q98. Answer: (a) 2.5

Shortcut Trick
Upstream Speed = 33.2 km ÷ (83/60) h = 24 kmph.
Ratio of Boat Speed (u) : Stream Speed (v) = 8 : 5 => Upstream ratio = 8 − 5 = 3 units.
3 units = 24 kmph => 1 unit = 8 kmph.
Upstream Speed = 24 kmph, Downstream Speed = (8 + 5) × 8 = 104 kmph.
Total Time = (47.1 ÷ 24) + (55.9 ÷ 104) = 1.9625 + 0.5375 = 2.5 hours.
Therefore The correct answer is 2.5 hours.
Alternate Method
Given: Upstream Distance = 33.2 km, Upstream Time = 83 min, u:v = 8:5
Formula: Speed = Distance ÷ Time; Upstream Speed (S_u) = u − v; Downstream Speed (S_d) = u + v
=> S_u = 33.2 ÷ (83/60) = (33.2 × 60) ÷ 83 = 1992 ÷ 83 = 24 kmph.
=> Let u = 8k and v = 5k. Then S_u = 8k − 5k = 3k.
=> 3k = 24 => k = 8.
=> u = 64 kmph, v = 40 kmph.
=> S_d = u + v = 64 + 40 = 104 kmph.
=> Total Time = (47.1 ÷ 24) + (55.9 ÷ 104)
=> Total Time = 1.9625 + 0.5375 = 2.5 hours.
Therefore The correct answer is 2.5 hours.
Additional Information
Upstream and Downstream Speed
Downstream speed = u + v and Upstream speed = u − v, where u is boat speed and v is stream speed.
Speed of Boat and Stream
u = (Downstream + Upstream) ÷ 2 and v = (Downstream − Upstream) ÷ 2.
Average Speed of Boat
If distance is same, Average Speed = (S_u × S_d) ÷ u.

Q99. Answer: (d) F4

The correct answer is F4.
Key Points
• Pressing Alt + F4 in Windows applications closes the currently active application or window.
• This keyboard shortcut is a universal command in Microsoft Windows operating systems to terminate the application in focus.
• It is particularly useful for quickly closing programs without using a mouse or navigating menus.
• The Alt key modifies the function of the F4 key, enabling this specific operation.
• If no applications are active, pressing Alt + F4 will display the "Shut Down Windows" dialog box.
Additional Information
• Function Keys Overview:
• The F1-F12 keys are called function keys and are designed to perform specific tasks, often in combination with modifier keys like

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Alt, Ctrl, or Shift.

• Each function key has a unique purpose depending on the software or operating system in use.

• Alt Key:

• The Alt (short for "Alternate") key is a modifier key on keyboards used to access alternative functions of other keys.

• When used with function keys, it activates specific shortcuts, such as Alt + F4 to close applications.

• Other Common Keyboard Shortcuts:

• Ctrl + C: Copy the selected content.

• Ctrl + V: Paste the copied content.

• Ctrl + Z: Undo the last action.

• Alt + Tab: Switch between open applications.

• Importance of Keyboard Shortcuts:

• Keyboard shortcuts improve efficiency and productivity by reducing reliance on the mouse.

• They are particularly valuable for users who work extensively with software and multitasking environments.

Q100. Answer: (b) Emmanuel Macron and Narendra Modi

The correct answer is Emmanuel Macron and Narendra Modi.

Key Points

• The AI Action Summit held in Paris in February 2025 was co-chaired by French President Emmanuel Macron and Indian Prime Minister Narendra Modi.

• The summit aimed to foster global collaboration on artificial intelligence across governments, industries, and academia.

• It emphasized addressing ethical concerns and responsible usage of AI technologies while promoting innovation.

• India and France highlighted their strategic partnership in technology and AI research during the summit.

• Key discussions involved ensuring AI-driven advancements align with sustainable development goals and equitable growth worldwide.

Additional Information

• Artificial Intelligence (AI):

• AI refers to the simulation of human intelligence by machines, enabling them to perform tasks such as learning, reasoning, and problem-solving.

• Applications include autonomous vehicles, natural language processing, and predictive analytics.

• Ethical concerns include data privacy, algorithmic bias, and potential misuse.

• India-France Strategic Partnership:

• India and France have a longstanding partnership in areas like defense, nuclear energy, and technology.

• In recent years, the collaboration has expanded to include research in emerging technologies such as AI and quantum computing.

• AI Governance Framework:

• Governments worldwide are working on frameworks to regulate AI development and usage responsibly.

• These frameworks aim to balance innovation with ethical considerations and societal well-being.

• UN Sustainable Development Goals (SDGs) and AI:

• AI is being leveraged to address global challenges like poverty, healthcare, education, and climate change.

• However, equitable access to AI technologies remains a critical concern to ensure inclusive progress.

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