SSC CHSL Tier-1 2024: Official Paper (Held On: 05 Jul, 2024 Shift 1) (Previous Year Paper)

SSC Combined Higher Secondary Level (CHSL) • 2024 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Q1. Parts of the following sentence have been given as options. Select the option that contains an error.

Emily is a American living in Paris for her work.

(a) a American
(b) living in Paris
(c) for her work
(d) Emily is

Q2. The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error mark 'No error' as your answer.

The aeroplane took down / without the passengers after / making a sudden announcement.

(a) The aeroplane took down
(b) without the passengers after
(c) making a sudden announcement
(d) No error

Q3. The following sentence has been divided into four parts. Identify the part that contains an error.

This is / a doll / and there is / a umbrella.

(a) a doll
(b) a umbrella.
(c) and there is
(d) This is

Q4. The following sentence has been split into four segments. Identify the segment that contains an error.

She shall being / travelling / by this time / tomorrow.

(a) by this time
(b) travelling
(c) She shall being
(d) tomorrow

Directions

In the following passage, some words have been deleted. Read the passage carefully and select the most appropriate option to fill in each blank.

The Sun is about 1.4 million kilometres (1)___diameter, while the Earth is about 13,000 kilometers wide. This indicates that the Sun's width would need to be filled by more than one hundred Earths. Sunspots are dreary (2)_ on the Sun's surface that are two thousand degrees Celsius cooler than the rest of the surface. The coolest piece of the sunspot is the dim focus called the umbra. The penumbra surrounds it. On the Sun's surface, some sunspots are just specks. Additionally, they appear in groups up to ten times larger than Earth. They can sometimes reach 200,000 miles in length. As the Sun rotates, these groups (3)_ to travel across the Sun over two weeks. Every 11 years, the number of sunspots reaches its maximum. The solar or sunspot cycle (4)__ to this. The Earth's weather may become more extreme and warm during the peak of sunspot activity. According to the (5)____

made by satellites like Nimbus 7, when sunspots are at their largest, less heat reaches Earth.

Q5. Select the most appropriate option to fill in blank number 1.

(a) on
(b) of
(c) in
(d) at

Q6. Select the most appropriate option to fill in blank number 2.

(a) province
(b) regions
(c) belt
(d) section

Q7. Select the most appropriate option to fill in blank number 3.

(a) act
(b) shape
(c) show
(d) appear

Q8. Select the most appropriate option to fill in blank number 4.

(a) entrust
(b) pass
(c) cite
(d) refers

Q9. Select the most appropriate option to fill in blank number 5.

(a) observations
(b) inspections
(c) invalidations
(d) perceptions

Q10. Select the most appropriate ANTONYM of the underlined word.

The news gave him inexpressible ecstasy.

(a) Delight
(b) Disappointment
(c) Depression
(d) Passion

Q11. Select the most appropriate meaning of the given idiom.

To be at daggers drawn

(a) To be about to collapse
(b) Ready to fight
(c) Under suspicion
(d) To be under control

Q12. Identify the incorrectly spelt word and select its correct spelling.

You shall recieve proper pay for your work.

(a) propeer
(b) resieve
(c) propper
(d) receive

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Q13. Select the most appropriate option to fill in the blank.

She went on a shopping spree with her friend and made him _____ the fat bill.

(a) do
(b) paid
(c) pay
(d) give

Q14. Select the most appropriate ANTONYM of the given word.

Innocent

(a) Guilty
(b) Unfair
(c) Righteous
(d) Mischievous

Q15. Select the most appropriate ANTONYM of the given word.

Cramped

(a) Crammed
(b) Spacious
(c) Filthy
(d) Tight

Q16. Select the most appropriate option that can substitute the underlined word in the given sentence.

Even in cold weather, the reliable car always started on the first try.

(a) dependable
(b) flaky
(c) inaccurate
(d) erratic

Q17. Select the most appropriate option that can substitute the underlined segment in the given sentence.

Mrs. Lakshmi’s purchases add around to Rs. 2,650.

(a) purchases add for to
(b) purchases add up to
(c) purchases add from to
(d) purchases add out to

Q18. Select the most appropriate option that can substitute the underlined word segment in the following sentence.

They are leaving there coats there.

(a) they’re coats there
(b) there coats their
(c) their coats their
(d) their coats there

Q19. Select the most appropriate synonym of the word ‘Swap’ from the given sentence.

The original buyer attempted to resell the tickets online because there was no option to exchange them for a new date.

(a) resell
(b) original
(c) option
(d) exchange

Q20. Select the most appropriate ANTONYM of the given word.

Transient

(a) Transitory
(b) Transparent

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(c) Permanent
(d) Irregular

Q21. Select the correct spelling of the underlined word.
He is one of the most underated players in the team.
(a) Undereted
(b) Underrated
(c) Underreted
(d) Underatted

Q22. Select the most appropriate synonym of the given word.
Appalled
(a) Allied
(b) Clap
(c) Applied
(d) Disgusted

Q23. Select the most appropriate ANTONYM for the underlined word in the given sentence.
He feels that wealthy people view him with contempt because he is poor.
(a) Obscurity
(b) Derision
(c) Admiration
(d) Scorn

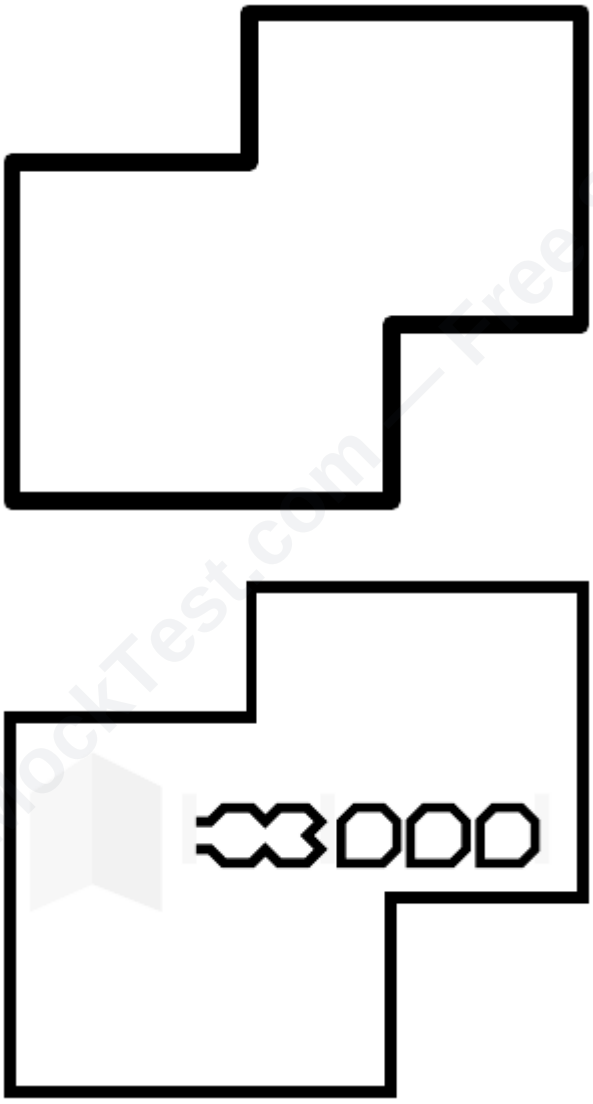
Q24. The following sentence has been split into four segments. Identify the segment that contains a grammatical error.
The hotel room, / which we / booked, / isn't enough big.
(a) isn't enough big
(b) which we
(c) booked,
(d) The hotel room

Q25. Select the most appropriate meaning of the given idiom.
To cost an arm and a leg
(a) Someone is badly hurt
(b) Someone has borne losses
(c) Someone does not have money to buy something
(d) Something is very expensive

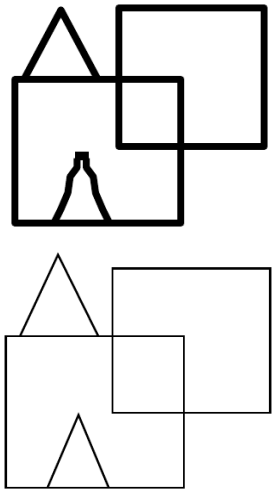
GENERAL INTELLIGENCE

Q26. Select the option in which the given figure is embedded. (Rotation is NOT allowed.)

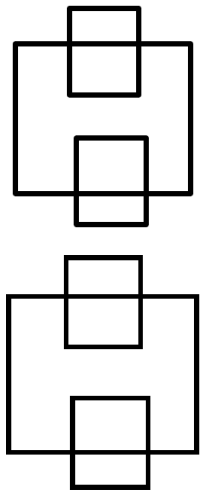
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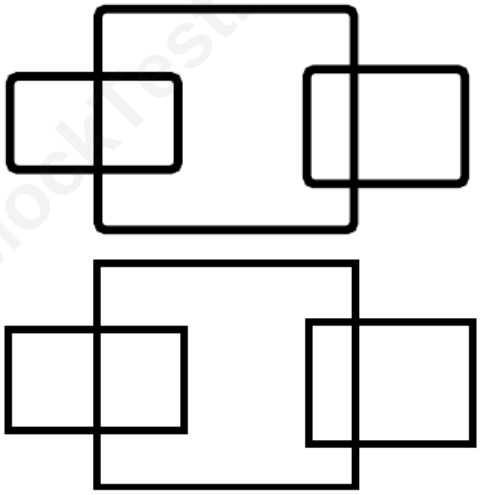
(a)



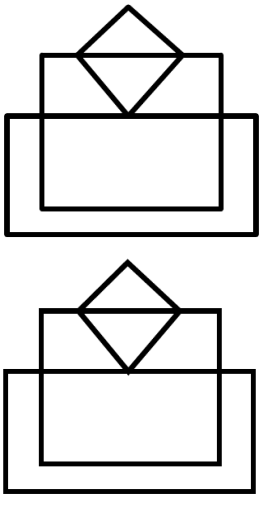
(b)



(c)



(d)



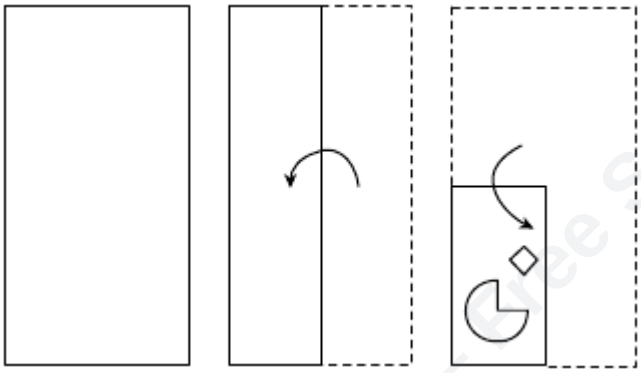
Q27. Three of the following four are alike in a certain way and thus form a group. Which is the one that does NOT belong to that group?

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

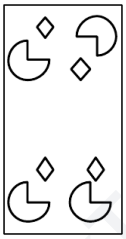
(a) MPU
(b) QTY
(c) DGL
(d) FIM

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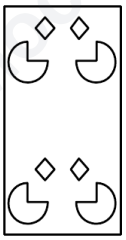
Q28. A paper is folded and cut as shown below. How will it appear when unfolded?



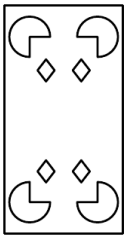
(a)



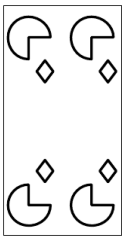
(b)



(c)

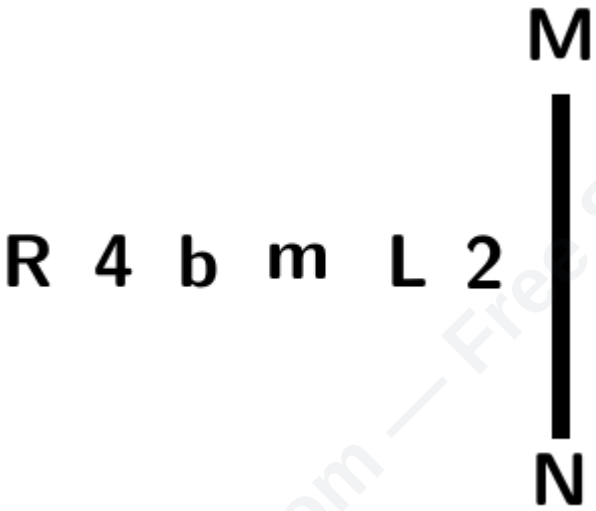


(d)



Q29. Select the correct mirror image of the given figure when the mirror is placed at MN

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(a)



(b)



(c)



(d)



Q30. If 18 August 2000 was Friday, then what was the day of the week on 21 August 2005?

(a) Sunday
(b) Wednesday
(c) Monday
(d) Friday

Q31. In a certain code language, CODE' is coded as '1573' and 'DICE' is coded as '7185'. How is 'O' coded in the given language?

(a) 3
(b) 7
(c) 8
(d) 5

Q32. Which two numbers should be interchanged to make the given equation correct?

69 + 15 − (14 × 4) ÷ 2 + (48 ÷ 3) = 58

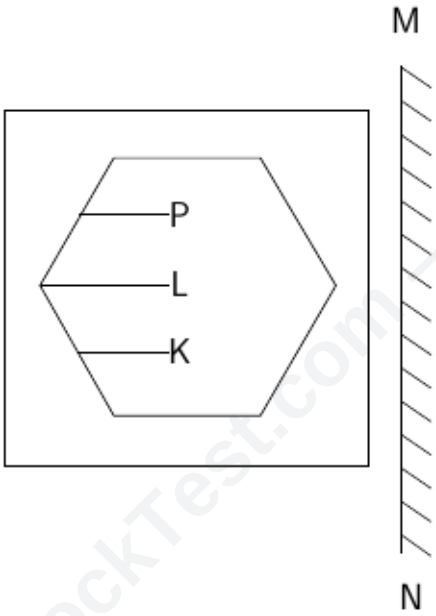
(NOTE: Numbers must be interchanged and not the constituent digits e.g. if 2 and 3 are to be interchanged in the equation 43 × 3 + 4 ÷ 2, then interchanged equation is 43 × 2 + 4 ÷ 3)

(a) 4 and 2

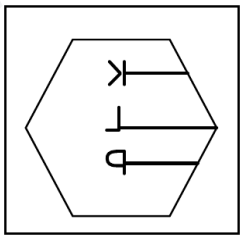
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(b) 48 and 15
(c) 69 and 48
(d) 3 and 4

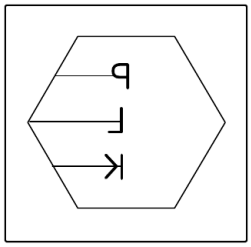
Q33. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.



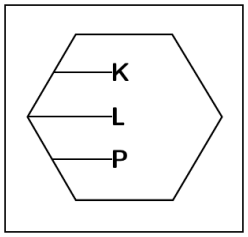
(a)



(b)

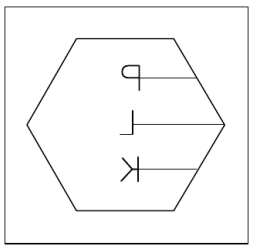


(c)



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(d)



Q34. LJNR is related to IGLP in a certain way based on the English alphabetical order. In the same way, FDHL is related to CAFJ. To which of the following is HFJN related, following the same logic?

(a) EDHL
(b) EDGL
(c) EBIL
(d) ECHL

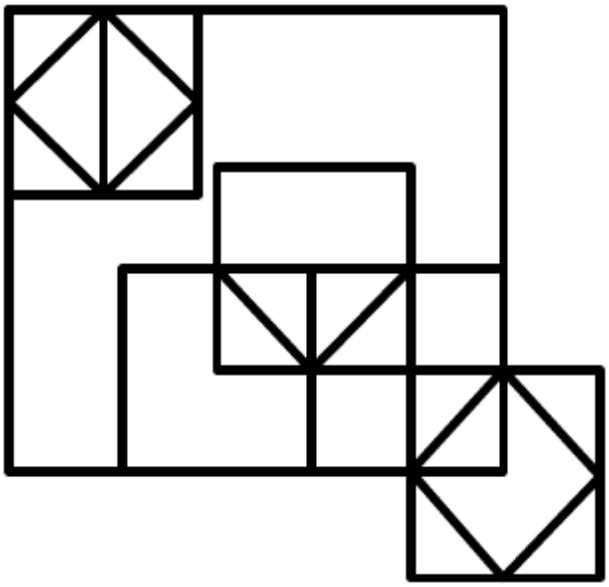
Q35. NGPZ is related to JCLV in a certain way based on the English alphabetical order. In the same way, XDLM is related to TZHI. To which of the following is RUKV related, following the same logic?

(a) NGRQ
(b) NGOR
(c) NQGR
(d) NQRG

Q36. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '–', then the resultant of which of the following will be 1049?

(a) 94 C 11 D 180 A 4 B 60
(b) 94 B 11 D 180 A 4 C 60
(c) 94 D 11 B 180 A 4 C 60
(d) 94 A 11 D 180 B 4 C 60

Q37. How many triangles are there in the given figure?



(a) 16
(b) 17
(c) 15
(d) 18

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Q38. What should come in place of ? in the given series based on the English alphabetical order?

OWL QAQ ? UIA WMF

(a) XMB
(b) PNL
(c) LQJ
(d) SEV

Q39. In this question, three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusion(s) logically follows/follow from the statements.

Statements:

Some strawberries are oranges.

Some oranges are kiwis.

All kiwis are melons.

Conclusions:

I. No strawberry is a melon.

II. All strawberries are melons.

III. Some strawberries are kiwis.

(a) Neither conclusions I, II nor III follows.
(b) Both conclusions II and III follow.
(c) Both conclusions I and II follow
(d) All conclusions I, II and III follow.

Q40. In a certain code language, ‘BAKE’ is coded as ‘2496’ and ‘CAKE’ is coded as ‘4369’. How is ‘B’ coded in that language?

(a) 9
(b) 4
(c) 6
(d) 2

Q41. 161 is related to 23 following a certain logic. Following the same logic, 301 is related to 43.To which of the following is 427 related following the same logic?

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

(a) 61
(b) 57
(c) 63
(d) 59

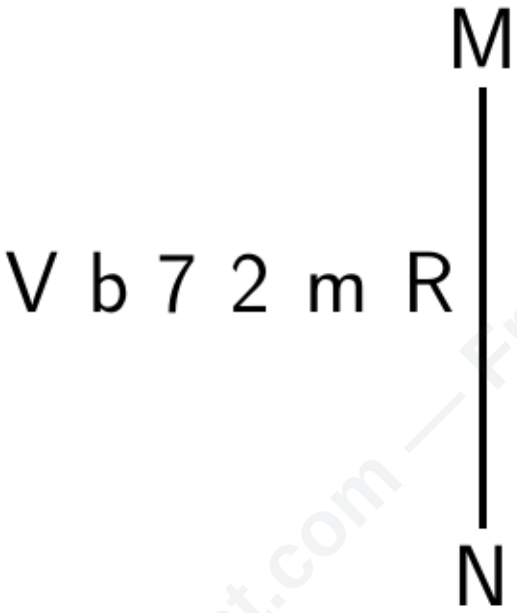
Q42. If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '-', what will come in place of the question mark (?) in the following equation?

35 B 7 D 120 A 12 C 38 = ?

(a) 473
(b) 373
(c) 173
(d) 273

Q43. Select the correct mirror image of the given combination when the mirror is placed at MN as shown below.

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(a)



(b)



(c)



(d)



Q44. If 4 December 2014 was Thursday, then what was the day of the week on 10 December 2018?

(a) Monday
(b) Tuesday
(c) Friday
(d) Wednesday

Q45. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(11, 8, 352)

(15, 6, 360)

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

(a) (11, 7, 231)
(b) (17, 6, 102)
(c) (16, 5, 320)
(d) (8, 9, 352)

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Q46. Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

xy_z_xxy_zbx_yx_bx_y_z_x

(a) xzxxyyzx
(b) xyxxzxxb
(c) xbxxzxxb
(d) xbxyzxxb

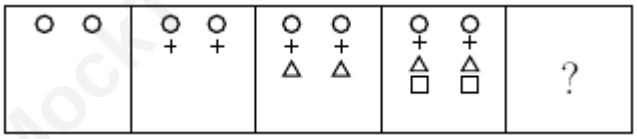
Q47. Which two numbers should be interchanged to make the given equation correct?

(99 − 42 + 11) + (36 ÷ 6) × 7 − 50 = 73

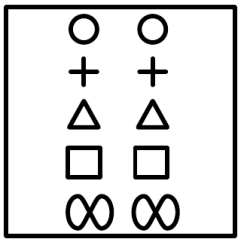
(NOTE: Numbers must be interchanged and not the constituent digits e.g. if 2 and 3 are to be interchanged in the equation 43 × 3 + 4 ÷ 2, then interchanged equation is 43 × 2 + 4 ÷ 3)

(a) 50 and 11
(b) 50 and 99
(c) 7 and 11
(d) 42 and 36

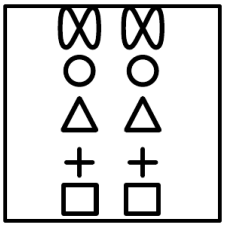
Q48. Identify the figure given in the options which when put in place of the question mark (?) will logically complete the series?



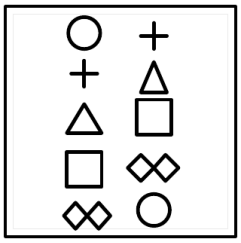
(a)



(b)

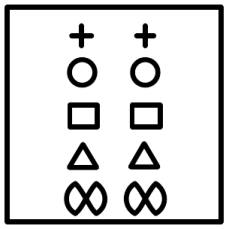


(c)



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(d)



Q49. What should come in place of the question mark (?) in the given series?

32, 61, 90, 119, ?, 177

(a) 146
(b) 149
(c) 148
(d) 147

Q50. In a certain code language

A + B means 'A is the brother of B'
A – B means 'A is the father of B'
A × B means 'A is the wife of B'
A ÷ B means 'A is the mother of B'

Based on the above, how is P related to T if 'P ÷ Q × R − S + T'?

(a) Father's sister
(b) Mother's sister
(c) Father's mother
(d) Mother's mother

QUANTITATIVE APTITUDE

Q51. Study the given table and answer the questions that follow.

The table represents the number of candidates appeared, qualified, and selected in a national level examination from four different schools M, N, O and P over the years 2012 to 2017.

Where A : Appeared; Q : Qualified ; S : Selected

Year	M	N	O	P								
A	Q	S	A	Q	S	A	Q	S	A	Q	S	
2012	7000	750	84	3000	400	34	2000	250	27	1500	160	23
2013	5500	500	55	3500	420	56	2500	340	36	2500	290	56
2014	6500	455	42	3800	460	66	3500	380	48	2700	480	67
2015	8500	854	89	4500	485	72	4500	560	57	3400	540	87
2016	9000	922	92	4690	678	86	5670	660	68	3700	650	89
2017	9200	942	94	6700	700	92	6780	680	89	4500	670	93

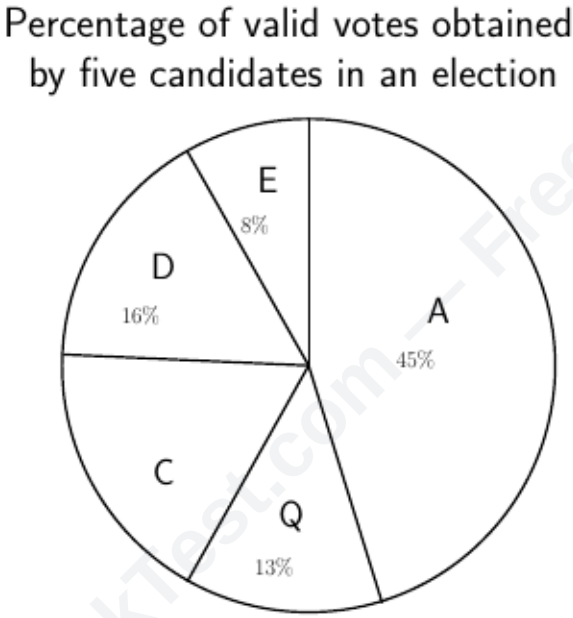
For which school is the average number of candidates selected over the years the maximum?

(a) O
(b) N
(c) M
(d) P

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Q52. Study the given pie chart and answer the question that follows. The given pie chart represents the percentage of valid votes obtained by five candidates in a university election.

Percentage of valid votes obtained by five candidates in an election



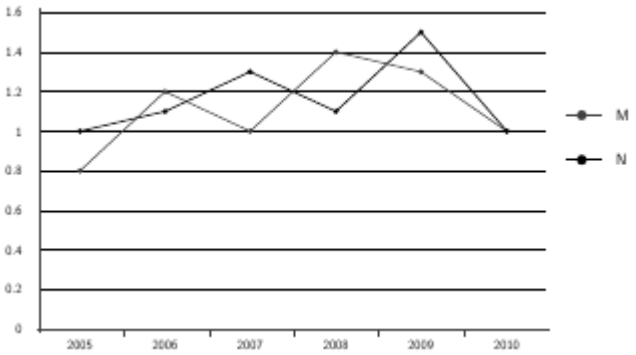
If candidate C has obtained 270 valid votes, then which are the two candidates for whom the difference in valid votes obtained is 45?

(a) A and Q
(b) D and Q
(c) C and D
(d) Q and C

Q53. ΔABC is similar to ΔDEF and the ratio of the area of triangle ABC to triangle DEF is 25 : 144. If AB = p cm, AC = q cm and BC = r cm, then DE = ?

(a) 5/12 p
(b) 12/5 q
(c) 12/5 p
(d) 5/12 q

Q54. The following line graph shows the ratio of imports to exports of two companies over the years.



Study the graph carefully and answer the question that follows.

If the exports of Company M in 2008 were Rs. 210 crores, what were the imports of the company in the same year?

(a) Rs. 150 crores
(b) Rs. 268 crores
(c) Rs. 186 crores
(d) Rs. 294 crores

Q55. Sapna finishes a job in 12 hours working alone. If Sapna and Riya finish the same job in 8 hours working together at their respective constant rates, then, in how many hours can Riya do the job working alone?

(a) 16
(b) 20
(c) 24
(d) 18

Q56. Rajesh is playing with a football having diameter of 28 cm. He wants to get a photo of his favourite player painted on the entire ball. The painter charges Rs. 2/cm². What will be the cost (in Rs.) of painting the ball (take π = 22/7)?

(a) 4,928
(b) 2,464
(c) 2,414
(d) 4,828

Q57. If 3c2933k is divisible by both 5 and 11, where c and k are single digit natural numbers, then c + k = _____.

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

Q58. The length, breadth and height of a cuboid are in ratio of 3 : 4 : 5. If the volume of the cuboid is 1620 m³, find the total surface area of the cuboid.

(a) 423 m²
(b) 646 m^(2)
(c) 712 m^(2)
(d) 846 m²

Q59. Monthly salary of Jitvik in the month of December 2020 was Rs. 24,800. Every year his salary increases by 5% from the month of January. What was his salary (in Rs.) in the month of February 2022?

(a) 26485
(b) 27180
(c) 27486
(d) 27342

Q60. A cylindrical oil tank has a radius of 5 m and a total surface area of 628 m², what would be its curved surface area? (round off to the second decimal place)

(a) 371.83 m2
(b) 401.43 m2
(c) 481.43 m2
(d) 470.8 m2

Q61. Ravath had to sell vegetables worth Rs. 4,960 for Rs. 4,712 due to weather conditions. What is the loss percentage that he has incurred?

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

Q62. Raju has Rs. 11,000 and starts saving Rs. 5,000 each week towards buying a new laptop. At the same time, Ramesh has Rs. 60,000 and begins spending Rs. 2,000 per week on supplies for his art class. Will there be a week when they have the same amount of money?

(a) Yes, after 7 weeks
(b) No, they will never have the same amount
(c) Yes, after 6 weeks
(d) Yes, after 5 weeks

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Q63. Simplify the following expression.

99 - [169 ÷ (13 × 13) - (-4) - {3 - 17 + 10}]

(a) 107
(b) 90
(c) 80
(d) 87

Q64. The distance between the centres of two circles of radii 7 cm and 5 cm is 15 cm. Find the length of the transverse common tangent to these circles.

(a) 11 cm
(b) 9 cm
(c) 13 cm
(d) 7 cm

Q65. A coffee maker with marked price Rs. 4,000 is available on successive discounts of 15%. 10% and 5%. Find the selling price of the coffee maker.

(a) Rs. 2,907
(b) Rs. 2,905
(c) Rs. 2,900
(d) Rs. 2,903

Q66. The difference between 31% and 26% of votes for the same party at different places is 2350. What is 7% of those votes?

(a) 3090
(b) 4090
(c) 3290
(d) 2270

Q67. A girl walking at a speed of 9 km/h crosses a bridge in 45 minutes. Find the length of the bridge in metres.

(a) 6750
(b) 6349
(c) 7532
(d) 6398

Q68. AB is parallel to DC in a trapezium ABCD. It is given that AB > DC and the diagonals AC and BD intersect at O. If AO = 3x − 15, OB = x + 9, OC

= x - 5 and OD = 5, and x has two values x1 and x2, then the value of $(x1^2+x2^2)$ is:

(a) 45
(b) 56
(c) 61
(d) 73

Q69. Abhishek's marks in Mathematics were incorrectly entered as 93 instead of 63. Due to this, the average marks of the class in Mathematics got increased by 0.5. How many students were there in the class?

(a) 45
(b) 50
(c) 60
(d) 55

Q70. The population of a town first decreased by 16% due to migration to a big city for better job opportunities. The next year, the population of the town increased by 21% as there were better facilities for jobs. What is the net percentage change (correct to 2 decimal places) in the population?

(a) Decrease by 2.54%
(b) Increase by 1.64%
(c) Increase by 2.54%

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(d) Decrease by 1.64%

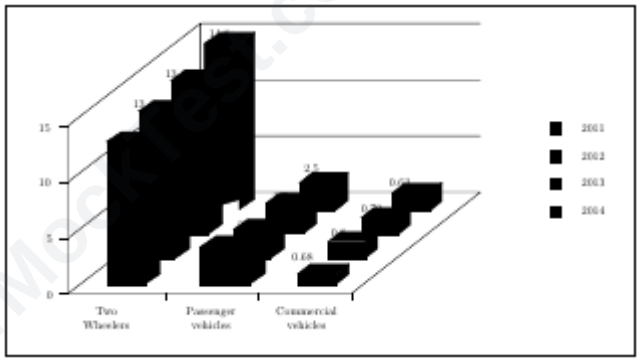
Q71. In triangle XYZ, XY = YZ and mangle X = 78°. Find the value of mangle Y.

(a) 39°
(b) 24°
(c) 34°
(d) 28°

Q72. If tan A = a tan B and sin A = b sin B, then the value of $\cos^2 A$ is:

(a) $(b^2-1)/(a^2-1)$
(b) $(a^2+1)/(b^2+1)$
(c) $(b^2+1)/(a^2+1)$
(d) $(a^2-1)/(b^2-1)$

Q73. The given chart represents the sales of automobiles in India (by type, in million units) from the year 2011 to 2014. Study the chart and answer the question that follows.



If the same percentage increase in the number of two wheelers as in 2014 over 2013 is expected in 2015, approximately how many two wheelers will be sold in 2015?

(a) 15.8 million
(b) 14.8 million
(c) 17.8 million
(d) 16.8 million

Q74. A sum of Rs. 18,000 gives a simple interest of Rs. 3,240 in 2 years and 3 months. The rate of interest per annum is:

(a) 8%
(b) 7%
(c) 10%
(d) 12%

Q75. If a : b = 3 : 4, b : c = 2 : 3, and c : d = 5 : 6, then a : b : c : d is:

(a) 15 : 20 : 35 : 36
(b) 10 : 20 : 30 : 36
(c) 15 : 20 : 30 : 36
(d) 15 : 25 : 30 : 36

GENERAL AWARENESS

Q76. In Microsoft Word, which option allows you to exclude specific sections or types of text from the spelling and grammar check?

(a) Thesaurus
(b) Exclusion Dictionary
(c) AutoCorrect
(d) spell check

Q77. Sanjukta Panigrahi a legendary dancer is associated with which of the following dance forms?

(a) Odissi
(b) Laho
(c) Bihu
(d) Kuchipudi

Q78. Bankim Chandra Chatterjee wrote a novel Anand Math based on which of the following rebellions/revolts?

(a) Paika Rebellion
(b) Kuki Revolt
(c) Sanyasi Rebellion
(d) Mappila Rebellion

Q79. With which of the following sports is Lovlina Borgohain associated?

(a) boxing
(b) cricket
(c) hockey
(d) basketball

Q80. In which of the following states are the Pai songs accompanied by the Saria dance sung during the rain festivals?

(a) Madhya Pradesh
(b) Sikkim
(c) Tripura
(d) Uttar Pradesh

Q81. As per Census of India 2011, which of the following groups of states recorded the lowest literacy rate?

(a) Bihar and Madhya Pradesh
(b) Rajasthan and Assam
(c) Bihar and Arunachal Pradesh
(d) Rajasthan and Jharkhand

Q82. Brihadiswara Temple which exhibits Dravidian temple architecture is located in _____.

(a) Thanjavur
(b) Madurai
(c) Dharmapuri
(d) Thiruvanathapuram

Q83. The Maritime Anti-Piracy Act, 2022, was enacted to give effect to which of the following?

(a) United Nations Convention on the Law of the Sea relating to repression of piracy on high seas.
(b) United Nations Treaty on Oceans relating to repression of piracy on high seas.
(c) United Nations Convention on Oceans and Seas relating to repression of piracy on high seas.
(d) United Nations Regional seas convention relating to repression of piracy on high seas.

Q84. The relationship between which of the following is correct?

(a) GDP at market price = price + quantity of final goods and services
(b) Domestic income = NDP at market price + net indirect taxes
(c) National income = NDP at factor cost + net factor income from abroad
(d) NDP at market price = GDP at market price + depreciation

Q85. Which of the following rocky planets is the fastest planet in our solar system - traveling through space at about 29 miles (47 kilometres) per second?

(a) Earth
(b) Mercury
(c) Venus
(d) Mars

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Q86. The phenomenon of the interaction between nonallelic genes at two or more loci resulting in one gene masking the phenotypic expression of another gene, is known as:

(a) epistasis
(b) linkage
(c) incomplete inheritance
(d) complete inheritance

Q87. Rows in MS-Excel are identified by:

(a) letters
(b) timings
(c) numbers with letters
(d) numbers

Q88. In cricket, _____ is called by the umpire when the bowler doesn't deliver the ball within reach of the batter.

(a) no ball
(b) dead ball
(c) wide
(d) yorker

Q89. Who among the following rulers was a part of the Tripartite Struggle for the possession of Kannauj?

(a) Yashovarman
(b) Prithvi Raj III
(c) Dharmapala
(d) Mahendrapal

Q90. Which organisation, in collaboration with the Central Board of Secondary Education (CBSE), and the Ministry of Education, announced the launch of the 'AI For All' initiative with the purpose of creating a basic understanding of artificial intelligence for everyone in India?

(a) TCS
(b) Infosys
(c) IBM
(d) Intel

Q91. Pinjore heritage festival is organised by the state of _____.

(a) Sikkim
(b) Jharkhand
(c) Haryana
(d) Uttarakhand

Q92. Which of the following options is INCORRECT?

(a) The Planning Commission of India was set up in 1950.
(b) Distinguished economists from India and abroad were invited to advise on India's economic development during the first five-year plan period.
(c) India borrowed the idea of five-year plans from the former Soviet Union.
(d) The chairmanship of the Planning Commission of India was given to the Prime Minister.

Q93. Match the states in column A to their ports in column B.

Column A (States)	Column B (Ports)		
1.	Goa	a.	Mormugao Port
2.	West Bengal	b.	Kandla Port
3.	Tamil Nadu	c.	Tuticorin Port
4.	Gujarat	d.	|Haldia Port

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

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

Q94. _____ was appointed British High Commissioner to India in April 2024.
(a) Dominic Asquith
(b) Nicholas Fenn
(c) Lindy Cameron
(d) Philip Barton

Q95. Which state hosts the Nehru trophy boat race?
(a) Kerala
(b) Goa
(c) Karnataka
(d) Tamil Nadu

Q96. Which of the following devices is used to accelerate charged particles to high velocities?
(a) cyclotron
(b) copatron
(c) cosmotron
(d) cryotron

Q97. Which of the following states has mangrove forests?
(a) Andhra Pradesh
(b) Manipur
(c) Telangana
(d) Rajasthan

Q98. The 42^(nd) amendment of the Indian Constitution added _____.
(a) Legislature
(b) Fundamental rights
(c) National anthem
(d) Fundamental duties

Q99. Which of the following statement(s) is/are INCORRECT vis-à-vis Fundamental Duties?
1) They are obligatory in nature
2) Fundamental Rights and Fundamental duties are complementary to each other.
3) The introduction of Article 51A created strong base for a concrete national character and strong harmony.
4) Eleventh fundamental duty was added by 78^(th) constitutional amendment act.
(a) Only 3
(b) 1 and 2
(c) 2 and 3
(d) Only 4

Q100. Who among the following is a singer of Hindustani classical music?
(a) Aruna Sairam
(b) S Sowmya
(c) Sudha Ragunathan
(d) Shubha Mudgal

ANSWER KEY

1	a	2	a	3	b	4	c	5	c	6	b	7	d	8	d	9	a	10	c
11	b	12	d	13	c	14	a	15	b	16	a	17	b	18	d	19	d	20	c

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

SOLUTIONS

Q1. Answer: (a) a American

The correct answer is Option 1.

Key Points

• The phrase "a American" is incorrect.

• The correct article to use before the word "American" is "an" because "American" begins with a vowel sound.

• The phrase should be "an American" for correct grammatical usage.

Therefore, the correct answer is 1.

Correct Sentence: "Emily is an American living in Paris for her work."

Additional Information

• 2: "living in Paris" – This part of the sentence is correct and does not require any changes.

• 3: "for her work" – This part of the sentence is correct and does not require any changes.

• 4: "Emily is" – This part of the sentence is correct and does not require any changes.

Q2. Answer: (a) The aeroplane took down

The correct answer is Option 1.

Key Points

• The phrase "took down" is incorrect in this context.

• The correct phrase should be "took off," which means the aeroplane left the ground and started flying.

• Thus, the error is in Option 1 of the sentence.

Therefore, the correct answer is 1.

Correct Sentence: "The aeroplane took off without the passengers after making a sudden announcement."

Additional Information

• 2: "without the passengers after" – This part of the sentence is correct and does not require any changes.

• 3: "making a sudden announcement" – This part of the sentence is correct and does not require any changes.

Q3. Answer: (b) a umbrella.

The correct answer is Option 2.

Key Points

• The phrase "a umbrella" is incorrect.

• The correct article to use before the noun "umbrella" is "an" because "umbrella" begins with a vowel sound.

• The phrase should be "an umbrella" for correct grammatical usage.

• Thus, the error is in Option 2 of the sentence.

Therefore, the correct answer is 2.

Correct Sentence: "This is a doll and there is an umbrella."

Additional Information

• 1: "a doll" – This part of the sentence is correct and does not require any changes.

• 3: "and there is" – This part of the sentence is correct and does not require any changes.

• 4: "This is" – This part of the sentence is correct and does not require any changes.

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Q4. Answer: (c) She shall being

The correct answer is Option 3.

Key Points

• The phrase "She shall being" is incorrect.

• The correct phrase should be "She will be" or "She shall be" to correctly form the future continuous tense.

• The future continuous tense is used to indicate an action that will be in progress at a specific time in the future.

• Thus, the error is in Option 3 of the sentence.

Therefore, the correct answer is 3.

Correct Sentence: "She will be travelling by this time tomorrow."

Additional Information

• 1: "by this time" – This part of the sentence is correct and does not require any changes.

• 2: "travelling" – This part of the sentence is correct and does not require any changes.

• 4: "tomorrow" – This part of the sentence is correct and does not require any changes.

Q5. Answer: (c) in

The correct answer is 'in'.

Key Points

• The sentence describes the diameter of the Sun in comparison to the Earth.

• The correct preposition to use when measuring the diameter of a spherical object is "in."

• Other options ("on", "of", "at") do not fit the context of measuring diameter correctly.

Therefore, the correct answer is 'Option 3: in'.

Complete Passage: The Sun is about 1.4 million kilometres (1) in diameter, while the Earth is about 13,000 kilometers wide. This indicates that the Sun's width would need to be filled by more than one hundred Earths. Sunspots are dreary (2) ___ on the Sun's surface that are two thousand degrees Celsius cooler than the rest of the surface. The coolest piece of the sunspot is the dim focus called the umbra. The penumbra surrounds it. On the Sun's surface, some sunspots are just specks. Additionally, they appear in groups up to ten times larger than Earth. They can sometimes reach 200,000 miles in length. As the Sun rotates, these groups (3) _ to travel across the Sun over two weeks. Every 11 years, the number of sunspots reaches its maximum. The solar or sunspot cycle (4) __ to this. The Earth's weather may become more extreme and warm during the peak of sunspot activity. According to the (5) ____ made by satellites like Nimbus 7, when sunspots are at their largest, less heat reaches Earth.

Q6. Answer: (b) regions

The correct answer is 'regions'.

Key Points

• The sentence describes sunspots as particular areas on the Sun's surface.

• The term "regions" is commonly used to describe specific areas on a surface, particularly in scientific contexts.

• Other options ("province", "belt", "section") do not accurately describe areas on the Sun's surface in this context.

Therefore, the correct answer is 'Option 2: regions'.

Complete Passage: The Sun is about 1.4 million kilometres (1) in diameter, while the Earth is about 13,000 kilometers wide. This indicates that the Sun's width would need to be filled by more than one hundred Earths. Sunspots are dreary (2) regions on the Sun's surface that are two thousand degrees Celsius cooler than the rest of the surface. The coolest piece of the sunspot is the dim focus called the umbra. The penumbra surrounds it. On the Sun's surface, some sunspots are just specks. Additionally, they appear in groups up to ten times larger than Earth. They can sometimes reach 200,000 miles in length. As the Sun rotates, these groups (3) appear to travel across the Sun over two weeks. Every 11 years, the number of sunspots reaches its maximum. The solar or sunspot cycle (4) refers to this. The Earth's weather may become more extreme and warm during the peak of sunspot activity. According to the (5) observations made by satellites like Nimbus 7, when sunspots are at their largest, less heat reaches Earth.

Q7. Answer: (d) appear

The correct answer is 'appear'.

Key Points

• The sentence describes the movement of sunspot groups across the Sun's surface.

• The term "appear" is appropriate because it conveys the visual observation of the sunspots as they seem to move across the Sun due to its rotation.

• Other options ("act", "shape", "show") do not accurately convey the sense of visual observation of movement.

Therefore, the correct answer is 'Option 4: appear'.

Complete Passage: The Sun is about 1.4 million kilometres (1) in diameter, while the Earth is about 13,000 kilometers wide. This

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indicates that the Sun's width would need to be filled by more than one hundred Earths. Sunspots are dreary (2) regions on the Sun's surface that are two thousand degrees Celsius cooler than the rest of the surface. The coolest piece of the sunspot is the dim focus called the umbra. The penumbra surrounds it. On the Sun's surface, some sunspots are just specks. Additionally, they appear in groups up to ten times larger than Earth. They can sometimes reach 200,000 miles in length. As the Sun rotates, these groups (3) appear to travel across the Sun over two weeks. Every 11 years, the number of sunspots reaches its maximum. The solar or sunspot cycle (4) refers to this. The Earth's weather may become more extreme and warm during the peak of sunspot activity. According to the (5) observations made by satellites like Nimbus 7, when sunspots are at their largest, less heat reaches Earth.

Q8. Answer: (d) refers

The correct answer is 'refers'.

Key Points

• The sentence explains the notion of the solar or sunspot cycle.

• The term "refers" is appropriate because it indicates that the solar or sunspot cycle is a term that denotes the increase in the number of sunspots every 11 years.

• Other options ("entrust", "pass", "cite") do not fit the context of explaining a term or a concept.

Therefore, the correct answer is 'Option 4: refers'.

Complete Passage: The Sun is about 1.4 million kilometres (1) in diameter, while the Earth is about 13,000 kilometers wide. This indicates that the Sun's width would need to be filled by more than one hundred Earths. Sunspots are dreary (2) regions on the Sun's surface that are two thousand degrees Celsius cooler than the rest of the surface. The coolest piece of the sunspot is the dim focus called the umbra. The penumbra surrounds it. On the Sun's surface, some sunspots are just specks. Additionally, they appear in groups up to ten times larger than Earth. They can sometimes reach 200,000 miles in length. As the Sun rotates, these groups (3) appear to travel across the Sun over two weeks. Every 11 years, the number of sunspots reaches its maximum. The solar or sunspot cycle (4) refers to this. The Earth's weather may become more extreme and warm during the peak of sunspot activity. According to the (5) observations made by satellites like Nimbus 7, when sunspots are at their largest, less heat reaches Earth.

Q9. Answer: (a) observations

The correct answer is 'observations'.

Key Points

• The sentence indicates that the information about sunspots and heat reaching Earth comes from measurements or data collected by satellites.

• The term "observations" is appropriate because it refers to the data or findings recorded by satellites like Nimbus 7 regarding sunspots and their effects.

• Other options ("inspections", "invalidations", "perceptions") do not fit the context of systematic data collection and analysis in a scientific context.

Therefore, the correct answer is 'Option 1: observations'.

Complete Passage: The Sun is about 1.4 million kilometres (1) in diameter, while the Earth is about 13,000 kilometers wide. This indicates that the Sun's width would need to be filled by more than one hundred Earths. Sunspots are dreary (2) regions on the Sun's surface that are two thousand degrees Celsius cooler than the rest of the surface. The coolest piece of the sunspot is the dim focus called the umbra. The penumbra surrounds it. On the Sun's surface, some sunspots are just specks. Additionally, they appear in groups up to ten times larger than Earth. They can sometimes reach 200,000 miles in length. As the Sun rotates, these groups (3) appear to travel across the Sun over two weeks. Every 11 years, the number of sunspots reaches its maximum. The solar or sunspot cycle (4) refers to this. The Earth's weather may become more extreme and warm during the peak of sunspot activity. According to the (5) observations made by satellites like Nimbus 7, when sunspots are at their largest, less heat reaches Earth.

Q10. Answer: (c) Depression

The solution is in Hindi. Read it online.

Q11. Answer: (b) Ready to fight

The solution is in Hindi. Read it online.

Q12. Answer: (d) receive

The solution is in Hindi. Read it online.

Q13. Answer: (c) pay

The solution is in Hindi. Read it online.

Q14. Answer: (a) Guilty

The solution is in Hindi. Read it online.

Q15. Answer: (b) Spacious

The solution is in Hindi. Read it online.

Q16. Answer: (a) dependable

The solution is in Hindi. Read it online.

Q17. Answer: (b) purchases add up to

The correct answer is Option 2.

Key Points

• The phrase "add around to" is incorrect in this context.

• The correct expression should be "add up to," which means to total or combine to a specified amount.

• This ensures grammatical correctness and clarity in conveying the intended meaning.

• Thus, the error is corrected in Option 2 of the sentence.

Therefore, the correct answer is 2.

Correct Sentence: "Mrs. Lakshmi's purchases add up to Rs. 2,650."

Additional Information

• 1: "purchases add for to" – This phrase is incorrect because "add for to" does not convey a clear or grammatically correct meaning.

• 3: "purchases add from to" – This phrase is incorrect because "add from to" is not a standard phrase in English.

• 4: "purchases add out to" – This phrase is incorrect because "add out to" is not the correct idiomatic expression.

Q18. Answer: (d) their coats there

The correct answer is Option 4.

Key Points

• The word "there" in "there coats" is incorrect and needs to be replaced with "their" to indicate possession.

• In the second use of "there," the word is correctly used to indicate a place.

• The correct substitution ensures that "their coats" correctly shows possession and "there" indicates location.

• Thus, the error is corrected in Option 4 of the sentence.

Therefore, the correct answer is 4.

Correct Sentence: "They are leaving their coats there."

Additional Information

• 1: "they're coats there" – This part is incorrect because "they're" is a contraction for "they are" and does not indicate possession.

• 2: "there coats their" – This part of the sentence is incorrect as it wrongly places "there" instead of "their" at the beginning.

• 3: "their coats their" – This part of the sentence is incorrect because the second "their" should be "there" to indicate location.

Q19. Answer: (d) exchange

The solution is in Hindi. Read it online.

Q20. Answer: (c) Permanent

The solution is in Hindi. Read it online.

Q21. Answer: (b) Underrated

The solution is in Hindi. Read it online.

Q22. Answer: (d) Disgusted

The solution is in Hindi. Read it online.

Q23. Answer: (c) Admiration

The solution is in Hindi. Read it online.

Q24. Answer: (a) isn't enough big

The correct answer is Option 1.

Key Points

• The primary issue in the sentence is the incorrect order of the adjectives and adverbs.

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• In English, it is usually correct to say "big enough" rather than "enough big".
• The correct phrase should be "isn't big enough," ensuring grammatical correctness and clarity.
• Thus, the error is located in part 1 of the sentence.
Therefore, the correct answer is 1.
Correct Sentence: "The hotel room, which we booked, isn't big enough."
Additional Information
• 2: "which we," – This part of the sentence is grammatically correct and does not require any changes.
• 3: "booked," – This part of the sentence is grammatically correct and does not require any changes.
• 4: "The hotel room," – This part of the sentence is grammatically correct and does not require any changes.

Q25. Answer: (d) Something is very expensive

The solution is in Hindi. Read it online.

Q26. Answer: (a) [figure] [figure]

The image embedded in the given figure is as shown below :
Therefore Here, the given figure is embedded in Option Figure 1.
Hence, the correct answer is "Option 1".

Q27. Answer: (d) FIM

The logic followed here is:
Option 1) MPU
Option 2) QTY
Option 3) DGL
Option 4) FIM
Thus, out of all the options 'FIM' is the odd one out.
Hence, "Option 4" is the correct answer.

Q28. Answer: (c) [figure]

The figure that will appear when unfolded the given paper is shown below:
Hence, "Option 3" is the correct answer.

Q29. Answer: (d) [figure]

The correct mirror image of the given figure is:
Hence, the correct answer is "Option 4".

Q30. Answer: (a) Sunday

Given: 18 August 2000 was Friday.
Now,
2000 to 2005 = 5 Years (4 Ordinary Years and 1 Leap Year).
And, In 5 Years = 1 Leap year and 4 Ordinary Years.
So, 1 Leap Year has 2 odd days,
And, 4 Ordinary Years have 4 odd days.
Total odd days = 2 + 4 = 6.
6 odd days → 6/7 = 0 weeks and 6 odd days.
then, 18 August 2005 will be Friday + 6 = Thursday.
Now, the number of days between 18 August 2005 to 21 August 2005
= 21 - 18 = 3 days.
= 3 days → Thursday + 3 days.
So, 21 August 2005 will be Thursday + 3 = Sunday.
Hence, the correct answer is "Option 1".

Q31. Answer: (a) 3

The logic followed here is:
CODE' is coded as '1573'
And,

'DICE' is coded as '7185'

Letter	C / E / D	O	D
Code	1 / 5 / 7	3	8

Therefore, 'O' is coded as:

O → 3

Hence, "Option 1" is the correct answer.

Q32. Answer: (c) 69 and 48

Given : 69 + 15 − (14 × 4) ÷ 2 + (48 ÷ 3) = 58

Option 1) 4 and 2

69 + 15 − (14 × 4) ÷ 2 + (48 ÷ 3) = 58 => 69 + 15 − (14 × 2) ÷ 4 + (48 ÷ 3) = 58

=> 69 + 15 − (14 × 2) ÷ 4 + (48 ÷ 3) = 58

=> 69 + 15 − 28 ÷ 4 + 16 = 58

=> 69 + 15 + 16 − 7 = 58

=> 100 - 7 = 58

=> 93 ≠ 58 (LHS ≠ RHS)

Option 2) 48 and 15

69 + 15 − (14 × 4) ÷ 2 + (48 ÷ 3) = 58 => 69 + 48 − (14 × 4) ÷ 2 + (15 ÷ 3) = 58

=> 69 + 48 − (14 × 4) ÷ 2 + (15 ÷ 3) = 58

=> 69 + 48 − 56 ÷ 2 + 5 = 58

=> 69 + 48 + 5 − 28 = 58

=> 122 - 28 = 58

=> 94 ≠ 58 (LHS ≠ RHS)

Option 3) 69 and 48

69 + 15 − (14 × 4) ÷ 2 + (48 ÷ 3) = 58 => 48 + 15 − (14 × 4) ÷ 2 + (69 ÷ 3) = 58

=> 48 + 15 − (14 × 4) ÷ 2 + (69 ÷ 3) = 58

=> 48 + 15 − 56 ÷ 2 + 23 = 58

=> 48 + 15 + 23 − 28 = 58

=> 86 - 28 = 58

=> 58 = 58 (LHS = RHS)

Option 4) 3 and 4

69 + 15 − (14 × 4) ÷ 2 + (48 ÷ 3) = 58 => 69 + 15 − (14 × 3) ÷ 2 + (48 ÷ 4) = 58

=> 69 + 15 − (14 × 3) ÷ 2 + (48 ÷ 4) = 58

=> 69 + 15 − 42 ÷ 2 + 12 = 58

=> 69 + 15 + 12 − 21 = 58

=> 96 - 12 = 58

=> 84 ≠ 58 (LHS ≠ RHS)

Hence, "Option 3" is the correct answer.

Q33. Answer: (d) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 4".

Q34. Answer: (d) ECHL

The logic followed here is:

LJNR is related to IGLP

And,

FDHL is related to CAFJ

Similarly,

HFJN related

Hence, "Option 4" is the correct answer.

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Q35. Answer: (c) NQGR

The logic followed here is:
NGPZ is related to JCLV
And,
XDLM is related to TZHI
Similarly,
RUKV is related to
Hence, "Option 3" is the correct answer.

Q36. Answer: (b) 94 B 11 D 180 A 4 C 60

Decoding signs:

Letter	A	B	C	D
Stands For	÷	×	•	•

Required resultant: 1049
So, checking each option one by one
Option 1) 94 C 11 D 180 A 4 B 60 => 94 + 11 - 180 ÷ 4 × 60
=> 94 + 11 - 180 ÷ 4 × 60
=> 94 + 11 - 45 × 60
=> 94 + 11 - 2700
=> 105 - 2700
=> -2595
Option 2) 94 B 11 D 180 A 4 C 60 => 94 × 11 - 180 ÷ 4 + 60
=> 94 × 11 - 180 ÷ 4 + 60
=> 94 × 11 - 45 + 60
=> 1034 + 60 - 45
=> 1094 - 45
=> 1049
Option 3) 94 D 11 B 180 A 4 C 60 => 94 - 11 × 180 ÷ 4 + 60
=> 94 - 11 × 180 ÷ 4 + 60
=> 94 - 11 × 45 + 60
=> 94 + 60 - 495
=> 154 - 495
=> -341
Option 4) 94 A 11 D 180 B 4 C 60 => 94 ÷ 11 - 180 × 4 + 60
=> 94 ÷ 11 - 180 × 4 + 60
=> 8.54 - 180 × 4 + 60
=> 8.54 + 60 - 720
=> 78.54 - 720
=> -641.46
Hence, "Option 4" is the correct answer.

Q37. Answer: (a) 16

The number of triangles in the given figure is shown below:
Thus, as marked there are a total of 16 triangles.
Hence, "Option 1" is the correct answer.

Q38. Answer: (d) SEV

The logic followed here is:
Hence, "Option 4" is the correct answer.

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Q39. Answer: (a) Neither conclusions I, II nor III follows.

The least possible Venn diagram for the given statements is as shown below :

Conclusions:

I. No strawberry is a melon → Does not follow (As some strawberries are oranges, some oranges are kiwis and all kiwis are melons. So no definite relation is given between strawberry and melon, therefore it is false.)

II. All strawberries are melons → Does not follow (As some strawberries are oranges, some oranges are kiwis and all kiwis are melons. So it is possible but not definite)

III. Some strawberries are kiwis → Does not follow (As some strawberries are oranges and some oranges are kiwis. So it is possible but not definite)

Therefore Here, Neither conclusions I, II nor III follows.

Hence, the correct answer is "Option 1"

Q40. Answer: (d) 2

The logic followed here is:

'BAKE' is coded as '2496'

'CAKE' is coded as '4369'

As A, K, and E are common, therefore the code for 'B' is:

B → 2

Hence, "Option 4" is the correct answer.

Q41. Answer: (a) 61

The logic followed here is:

Logic: 1st number ÷ 7 = 2nd number

Now,

For, 161 : 23

=> 161 ÷ 7 = 23.

For, 301 : 43

=> 301 ÷ 7 = 43.

Similarly, for 427 : ?

=> 427 ÷ 7 = 61.

Hence, the correct answer is "Option 1".

Q42. Answer: (d) 273

Given Equation: 35 B 7 D 120 A 12 C 38 = ?

BODMAS Rule:

Decoding the given information:

Alphabet	A	B	C	D
Meaning	÷	×	•	•

Now replacing the sign from left to right using BODMAS Rule, we get:

=> 35 × 7 - 120 ÷ 12 + 38 = ?

=> 35 × 7 - 10 + 38 = ?

=> 245 - 10 + 38 = ?

=> 283 - 10 = 273.

Hence, the correct option is "Option 4".

Q43. Answer: (d) [figure]

The correct mirror image of the given figure is:

Hence, the correct answer is "Option 4".

Q44. Answer: (a) Monday

Given: 4 December 2014 was Thursday.

Now,

2014 to 2018 = 4 Years (3 Ordinary Years and 1 Leap Year).

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And, In 4 Years = 1 Leap Year and 3 Ordinary Years.
So, 1 Leap Year has 2 odd days,
And, 3 Ordinary Years have 3 odd days.
Total odd days = 2 + 3 = 5.
5 odd days → 5 days ahead of Thursday.
then, 4 December 2018 will be Thursday + 5 = Tuesday.
Now, the number of days between 4 December 2018 to 10 December 2018
= 6 days.
6 days → 6 days ahead of Tuesday.
So, 10 December 2018 will be Tuesday + 6 = Monday.
Hence, the correct answer is "Option 1".

Q45. Answer: (c) (16, 5, 320)

The logic followed here is:
Logic: (1st number × 2nd number) × 4 = 2nd number.
Now,
For, (11, 8, 352)
=> (11 × 8) × 4
=> 88 × 4 = 352.
For, (15, 6, 360)
=> (15 × 6) × 4
=> 90 × 4 = 360.
Similarly, for (16, 5, 320)
=> (16 × 5) × 4
=> 80 × 4 = 32.
Hence, the correct answer is "Option 3".

Q46. Answer: (c) xbxxzxxb

Given series: xy_z_xxy_zbx_yx_bx_y_z_x
So, checking each option one by one:
Option 1) xzxxyyzx →xyxzbxxyxzbxxyxzbxxyxzbx → (It doesn't follows any pattern)
Option 2) xyxxzxxb →xyxzbxxyxzbxxyxzbxxyxzbx → (It doesn't follows any pattern)
Option 3) xbxxzxxb →xyxzbxxyxzbxxyxzbxxyxzbx → (It follows the pattern of: xyxzbx - xyxzbx - xyxzbx - xyxzbx)
Option 4) xbxyzxxb →xyxzbxxyxzbxxyxzbxxyxzbx → (It doesn't follows any pattern)
Hence, "Option 3" is the correct answer.

Q47. Answer: (d) 42 and 36

Given : (99 − 42 + 11) + (36 ÷ 6) × 7 − 50 = 73
Option 1) 50 and 11
(99 − 42 + 11) + (36 ÷ 6) × 7 − 50 = 73 => (99 − 42 + 50) + (36 ÷ 6) × 7 − 11 = 73
=> (99 + 50 − 42) + (36 ÷ 6) × 7 − 11 = 73
=> (149 − 42) + 6 × 7 − 11 = 73
=> 107 + 6 × 7 − 11 = 73
=> 107 + 42 - 11 = 73
=> 149 - 11 = 73
=> 138 ≠ 73 (LHS ≠ RHS)
Option 2) 50 and 99
(99 − 42 + 11) + (36 ÷ 6) × 7 − 50 = 73 => (50 − 42 + 11) + (36 ÷ 6) × 7 − 99 = 73
=> (50 + 11 − 42) + (36 ÷ 6) × 7 − 99 = 73
=> (61 − 42) + 6 × 7 − 99 = 73
=> 19 + 6 × 7 − 99 = 73
=> 19 + 42 − 99 = 73
=> 61 - 99 = 73

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=> -38 ≠ 73 (LHS ≠ RHS)

Option 3) 7 and 11

(99 − 42 + 11) + (36 ÷ 6) × 7 − 50 = 73 => (99 − 42 + 7) + (36 ÷ 6) × 11 − 50 = 73

=> (99 + 7 − 42) + (36 ÷ 6) × 11 − 50 = 73

=> (106 − 42) + 6 × 11 − 50 = 73

=> 64 + 6 × 11 − 50 = 73

=> 64 + 66 - 50 = 73

=> 130 - 50 = 73

=> 80 ≠ 73 (LHS ≠ RHS)

Option 4) 42 and 36

(99 − 42 + 11) + (36 ÷ 6) × 7 − 50 = 73 => (99 − 36 + 11) + (42 ÷ 6) × 7 − 50 = 73

=> (99 + 11 − 36) + (42 ÷ 6) × 7 − 50 = 73

=> (110 - 36) + 7 × 7 − 50 = 73

=> 74 + 7 × 7 − 50 = 73

=> 74 + 49 - 50 = 73

=> 123 - 50 = 73

=> 73 = 73 (LHS = RHS)

Hence, "Option 4" is the correct answer.

Q48. Answer: (a) [figure]

The logic followed here is: Two new elements are added i.e. '

', '

', '

', and '

' subsequently

Thus, final series is:

Hence, "Option 1" is the correct answer.

Q49. Answer: (c) 148

The logic followed here is:

Hence, "Option 3" is the correct answer.

Q50. Answer: (d) Mother’s mother

Decoding symbols:

A is				
Symbol	•	•	×	÷
Meaning	Brother	Father	Wife	Mother
to B				

Given: P ÷ Q × R − S + T

P ÷ Q => P is the mother of Q.

Q × R => Q is the wife of R.

R − S => R is the father of S.

S + T => S is the brother of T.

Thus, P is the maternal grandmother or mother's mother of T.

Hence, "Option 4" is the correct answer.

Q51. Answer: (c) M

Given:

The number of candidates selected for schools M, N, O, and P over the years 2012 to 2017.

Formula used:

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Average = (Sum of selected candidates) ÷ (Number of years)
Calculation:
School M: 84 + 55 + 42 + 89 + 92 + 94 = 456
=> Average for M = 456 ÷ 6 = 76
School N: 34 + 56 + 66 + 72 + 86 + 92 = 406
=> Average for N = 406 ÷ 6 = 67.67
School O: 27 + 36 + 48 + 57 + 68 + 89 = 325
=> Average for O = 325 ÷ 6 = 54.17
School P: 23 + 56 + 67 + 87 + 89 + 93 = 415
=> Average for P = 415 ÷ 6 = 69.17
Therefore The maximum average number of candidates selected is for School M with an average of 76.

Q52. Answer: (b) D and Q

Given:
Candidate C has 18% of valid votes.
Valid votes obtained by Candidate C = 270
Formula used:
Total valid votes = (Votes of C × 100) ÷ Percentage of votes for C
Valid votes for a candidate = (Total valid votes × Percentage of votes for the candidate) ÷ 100
Calculation:
Total valid votes = (270 × 100) ÷ 18
=> Total valid votes = 1500
Votes for A = (1500 × 45) ÷ 100
=> Votes for A = 675
Votes for D = (1500 × 16) ÷ 100
=> Votes for D = 240
Votes for Q = (1500 × 13) ÷ 100
=> Votes for Q = 195
Votes for E = (1500 × 8) ÷ 100
=> Votes for E = 120
Difference between D and Q = 240 - 195 = 45
Therefore The two candidates for whom the difference in valid votes obtained is 45 are Candidate D and Candidate Q.

Q53. Answer: (c) 12/5 p

Given:
ΔABC is similar to ΔDEF and the ratio of the area of triangle ABC to triangle DEF is 25 : 144.
If AB = p cm, AC = q cm and BC = r cm, then DE = ?
Formula used:
Ratio of areas of similar triangles = (Ratio of corresponding sides)²
Calculation:
Ratio of areas = 25/144
=> (Ratio of corresponding sides)² = 25/144
=> Ratio of corresponding sides = √(25/144)
=> Ratio of corresponding sides = 5/12
=> AB/DE = 5/12
=> DE = (12/5) × AB
=> DE = (12/5) × p
Therefore The correct answer is option (3).

Q54. Answer: (d) Rs. 294 crores

Given:
Exports of Company M in 2008 = Rs. 210 crores
Ratio of imports to exports for Company M in 2008 = 1.4 (from the graph)

Formula used:

Imports = Exports × Ratio of imports to exports

Calculation:

Imports = 210 × 1.4

=> Imports = 294 crores

Therefore The imports of Company M in 2008 were Rs. 294 crores.

Q55. Answer: (c) 24

Given:

Sapna finishes a job in 12 hours working alone.

Sapna and Riya together finish the job in 8 hours.

Formula used:

Work rate of Sapna = 1/12 job/hour

Work rate of Sapna and Riya together = 1/8 job/hour

Let the work rate of Riya be 1/x job/hour

Calculations:

1/12 + 1/x = 1/8

=> 1/x = 1/8 - 1/12

=> 1/x = (3 - 2)/24

=> 1/x = 1/24

=> x = 24

Therefore The correct answer is option 3.

Q56. Answer: (a) 4,928

Given:

Diameter of the football (d) = 28 cm

Painter charges = Rs. 2/cm²

Formula used:

Surface Area of a Sphere (A) = $4\pi r^2$

Where, r = radius of the sphere

Calculations:

Radius (r) = d/2 = 28/2 = 14 cm

=> Surface Area (A) = 4 × (22/7) × 14^2

=> A = 4 × (22/7) × 196

=> A = 4 × 22 × 28

=> A = 2464 cm²

Cost of painting = Surface Area × Painter charges

=> Cost = 2464 × 2 = Rs. 4928

Therefore The correct answer is option 1.

Q57. Answer: (a) 6

Given:

If 3c2933k is divisible by both 5 and 11, where c and k are single digit natural numbers, then c + k = _____.

Formula used:

For divisibility by 5, the last digit (k) must be 0 or 5.

For divisibility by 11, the alternating sum of the digits must be divisible by 11.

Calculation:

Since 3c2933k is divisible by 5, k must be 0 or 5.

According to the question,

c and k are the single-digit natural numbers, Since '0' is not the natural number, so only possible value of k is 5.

if k = 5: 3c2933k => 3c29335

Difference of sum of alternating digit:

=> (3 + 2 + 3 + 5) - (c + 9 + 3)

=> 13 - (c + 12)

=> 1 - c

For divisibility by 11:

=> 1 - c = 0, 11,

=> 1 - c = 0

=> c = 1

Then, c + k = 1 + 5 = 6

Therefore The correct answer is option 1.

Q58. Answer: (d) 846 m²

Given:

The length, breadth, and height of a cuboid are in the ratio of 3 : 4 : 5. The volume of the cuboid is 1620 m³.

Formula used:

Volume of cuboid = length × breadth × height

Let the length, breadth, and height be 3x, 4x, and 5x respectively.

Total surface area of cuboid = 2(lb + bh + hl)

Calculations:

Volume = length × breadth × height

1620 = 3x × 4x × 5x

=> 1620 = 60x³

=> x³ = 27

=> x = 3

Length = 3x = 3 × 3 = 9 m

Breadth = 4x = 4 × 3 = 12 m

Height = 5x = 5 × 3 = 15 m

Total surface area = 2(lb + bh + hl)

=> Total surface area = 2(9 × 12 + 12 × 15 + 15 × 9)

=> Total surface area = 2(108 + 180 + 135)

=> Total surface area = 2(423)

=> Total surface area = 846 m²

Therefore The correct answer is option (4).

Q59. Answer: (d) 27342

Given:

Monthly salary of Jitvik in December 2020 = Rs. 24,800

Annual salary increase = 5%

Formula used:

New Salary = Old Salary × (1 + Rate/100)

Calculation:

Salary in January 2021 = 24,800 × (1 + 5/100)

=> Salary in January 2021 = 24,800 × 1.05

=> Salary in January 2021 = 26,040

Salary in January 2022 = 26,040 × (1 + 5/100)

=> Salary in January 2022 = 26,040 × 1.05

=> Salary in January 2022 = 27,342

=> Salary in February 2022 = 27,342

Therefore The correct answer is option 4.

Q60. Answer: (d) 470.8 m2

Given:

A cylindrical oil tank has a radius of 5 m and a total surface area of 628 m².

Formula used:

Total Surface Area (TSA) of a cylinder = 2πr(r + h)

Curved Surface Area (CSA) of a cylinder = 2πrh
Calculation:
Given Total Surface Area (TSA) = 628 m²
Given radius (r) = 5 m
TSA = 2πr(r + h)
628 = 2π × 5 × (5 + h)
=> 628 = 10π × (5 + h)
=> 628 = 10 × 22/7 × (5 + h)
=> 19.98 = 5 + h
=> h = 14.98 m
Now, CSA = 2πrh
CSA = 2π × 5 × 14.98
=> CSA = 10π × 15
=> CSA = 10 × 22/7 × 14.98
=> CSA = 470.8 m²
Therefore The correct answer is option (4).

Q61. Answer: (d) 5%

Given:
Cost Price (CP) = Rs. 4,960
Selling Price (SP) = Rs. 4,712
Formula used:
Loss Percentage = (CP - SP)/CP × 100
Calculation:
Loss = Rs. 4,960 - Rs. 4,712
=> Loss = Rs. 248
Loss Percentage = 248/4960 × 100
=> Loss Percentage = 5%
Therefore The correct answer is option (4).

Q62. Answer: (a) Yes, after 7 weeks

Given:
Raju's initial amount = Rs. 11,000
Raju's weekly saving = Rs. 5,000
Ramesh's initial amount = Rs. 60,000
Ramesh's weekly spending = Rs. 2,000
Formula used:
Raju's amount after n weeks = Initial amount + (weekly saving × n)
Ramesh's amount after n weeks = Initial amount - (weekly spending × n)
Calculations:
Raju's amount after n weeks = 11000 + 5000n
Ramesh's amount after n weeks = 60000 - 2000n
We need to find n when both amounts are equal:
11000 + 5000n = 60000 - 2000n
=> 11000 + 5000n = 60000 - 2000n
=> 5000n + 2000n = 60000 - 11000
=> 7000n = 49000
=> n = 49000 / 7000
=> n = 7
Therefore The correct answer is option (1).

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Q63. Answer: (b) 90

Given:

99 - [169 ÷ (13 × 13) - (-4) - {3 - 17 + 10}]

Formula used:

Order of operations: Parentheses → Exponents → Multiplication and Division (left to right) → Addition and Subtraction (left to right)

Calculation:

99 - [169 ÷ (13 × 13) - (-4) - {3 - 17 + 10}]

=> 99 - [169 ÷ 169 - (-4) - {3 - 17 + 10}]

=> 99 - [1 - (-4) - {3 - 17 + 10}]

=> 99 - [1 + 4 - {3 - 17 + 10}]

=> 99 - [1 + 4 - {-4}]

=> 99 - [1 + 4 + 4]

=> 99 - [9]

=> 99 - 9

=> 90

Therefore The correct answer is option 2.

Q64. Answer: (b) 9 cm

Given:

The distance between the centres of two circles of radii 7 cm and 5 cm is 15 cm.

Formula used:

Length of transverse common tangent (T) = $\sqrt{(d^2 - (r1 + r2)^2)}$

Where,

d = distance between the centres of the circles

r1 = radius of first circle

r2 = radius of second circle

Calculation:

d = 15 cm, r1 = 7 cm, r2 = 5 cm

=> $T = \sqrt{(15^2 - (7 + 5)^2)}$

=> $T = \sqrt{(225 - 144)}$

=> $T = \sqrt{81}$

=> T = 9 cm

Therefore The correct answer is option 2.

Q65. Answer: (a) Rs. 2,907

Given:

Marked Price (MP) = Rs. 4,000

Successive discounts: 15%, 10%, 5%

Formula used:

Successive Discount Formula: Final Price = MP × (1 - d1/100) × (1 - d2/100) × (1 - d3/100)

Calculation:

Final Price = 4000 × (1 - 15/100) × (1 - 10/100) × (1 - 5/100)

=> Final Price = 4000 × 0.85 × 0.90 × 0.95

=> Final Price = 4000 × 0.85 = 3400

=> Final Price = 3400 × 0.90 = 3060

=> Final Price = 3060 × 0.95 = 2907

Therefore The correct answer is option (1).

Q66. Answer: (c) 3290

Given:

The difference between 31% and 26% of votes for the same party at different places is 2350.

Formula used:

Let the total number of votes be V.
31% of V - 26% of V = 2350
7% of V = ?
Calculation:
31% of V - 26% of V = 2350
=> 0.31V - 0.26V = 2350
=> 0.05V = 2350
=> V = 2350 / 0.05
=> V = 47000
7% of V = 0.07V
=> 0.07 × 47000
=> 3290
Therefore The correct answer is option 3.

Q67. Answer: (a) 6750

Given:
A girl walking at a speed of 9 km/h crosses a bridge in 45 minutes.
Formula used:
Distance = Speed × Time
Calculations:
Time = 45 minutes = 45/60 hours = 0.75 hours
Speed = 9 km/h
Distance = Speed × Time
=> Distance = 9 km/h × 0.75 hours
=> Distance = 6.75 km
=> Distance in metres = 6.75 km × 1000
=> Distance = 6750 metres
Therefore The correct answer is option 1.

Q68. Answer: (c) 61

Given:
AB is parallel to DC in a trapezium ABCD. AB > DC and the diagonals AC and BD intersect at O.
AO = 3x - 15, OB = x + 9, OC = x - 5, OD = 5
Formula used:
In a trapezium with parallel sides AB and DC, the diagonals intersecting at O divide each other proportionally:
AO/OB = OC/OD
Calculation:
(3x-15)/(x+9) = (x-5)/5
=> (3x - 15) × 5 = (x + 9) × (x - 5)
=> 15x - 75 = x^2 + 9x - 5x - 45
=> 15x - 75 = x^2 + 4x - 45
=> x^2 - 11x + 30 = 0
Solving the quadratic equation:
=> x = (11 ± √(121 - 120))/2
=> x1 = 6, x2 = 5
To find $x1^2$ + $x2^2$:
=> 6^2 + 5^2 = 36 + 25 = 61
Therefore The correct answer is option (3).

Q69. Answer: (c) 60

Given:
Abhishek's incorrect marks = 93
Abhishek's correct marks = 63

Increase in average marks = 0.5

Formula used:

Increase in total marks = Incorrect marks - Correct marks

New average = Old average + Increase in average

Increase in average = Increase in total marks / Number of students

Calculation:

Increase in total marks = 93 - 63

=> Increase in total marks = 30

Number of students = Increase in total marks / Increase in average

=> Number of students = 30 / 0.5

=> Number of students = 60

Therefore The correct answer is option 3.

Q70. Answer: (b) Increase by 1.64%

Given:

The population of a town first decreased by 16% due to migration to a big city for better job opportunities. The next year, the population of the town increased by 21% as there were better facilities for jobs.

Formula used:

Net Percentage Change = (Final Population - Initial Population) / Initial Population × 100

Calculation:

Let the initial population be 100.

After a 16% decrease:

=> Population = 100 - 16% of 100

=> Population = 100 - 16

=> Population = 84

After a 21% increase:

=> Population = 84 + 21% of 84

=> Population = 84 + 0.21 × 84

=> Population = 84 + 17.64

=> Population = 101.64

Net Percentage Change:

=> ((101.64 - 100) / 100) × 100

=> 1.64%

Therefore The correct answer is option (2).

Q71. Answer: (b) 24°

Given:

In triangle XYZ, XY = YZ and mangle X = 78º.

Formula used:

In an isosceles triangle, the base angles are equal.

Sum of angles in a triangle = 180º.

Calculation:

Let the base angles be mangle Y and mangle Z.

Since XY = YZ, mangle X = mangle Z.

mangle X + mangle Y + mangle Z = 180º

78º + mangle Y + 78º = 180º

=> 156º + mangle Y = 180º

=> mangle Y = 180º - 156º

=> mangle Y = 24º

Therefore The correct answer is option (2).

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Q72. Answer: (a) $(b^2-1)/(a^2-1)$

Given:

If tan A = a tan B and sin A = b sin B

Formula used:

tan A = sin A / cos A

$\sin^2A + \cos^2A = 1$

Calculation:

tan A = a tan B

=> sinA/cosA = a sinB/cosB

=> sinA.cosB/cosA.sinB = a ---(i)

Since, c A = b sin B => sin A/sin B = b

So, b cosB/cosA = a

=> b cos B = a cos A

on squaring both sides,

=> $b^2 \cos^2B = a^2 \cos^2A$ ---(ii)

Now, we have,

sin A = b sin B

=> $\sin^2A = b^2 \sin^2B$

=> $1 - \cos^2A = b^2 (1 - \cos^2B)$

=> 1 - cos2A = b2 - b^2cos2B

=> b2 cos2B = $b^2 - 1 + \cos^2A$

From equation (ii),

=> b2 cos2B = a2 cos2A

=> b2 - 1 + cos2A = a2 cos2A

=> b2 - 1 = a2 cos2A - cos2A

=> b2 - 1 = $\cos^2A (a^2 -1)$

=> $\cos2A = (b^2-1)/(a^2-1)$

Therefore The correct answer is option (1).

Q73. Answer: (a) 15.8 million

Given:

Sales of two wheelers in 2013 = 13.8 million units

Sales of two wheelers in 2014 = 14.8 million units

Formula used:

Percentage increase = [(Sales in 2014 - Sales in 2013) ÷ Sales in 2013] × 100

Estimated sales in 2015 = Sales in 2014 × (1 + Percentage increase)

Calculation:

Percentage increase = [(14.8 - 13.8) ÷ 13.8] × 100

=> Percentage increase = (1 ÷ 13.8) × 100

=> Percentage increase ≈ 7.25%

Estimated sales in 2015 = 14.8 × (1 + 7.25 ÷ 100)

=> Estimated sales in 2015 = 14.8 × 1.0725

=> Estimated sales in 2015 ≈ 15.8 million units

Therefore Approximately 15.8 million two wheelers will be sold in 2015.

Q74. Answer: (a) 8%

Given:

Principal (P) = Rs. 18,000

Simple Interest (SI) = Rs. 3,240

Time (t) = 2 years 3 months = 2.25 years

Formula used:

SI = P × r × t / 100

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Where, r = rate of interest per annum

Calculations:

3240 = 18000 × r × 2.25 / 100

=> r = (3240 × 100) / (18000 × 2.25)

=> r = 324000 / 40500

=> r = 8%

Therefore The correct answer is option (1).

Q75. Answer: (c) 15 : 20 : 30 : 36

Given:

a : b = 3 : 4

b : c = 2 : 3

c : d = 5 : 6

Formula used:

To find a : b : c : d, we need to find a common ratio for all terms.

Calculations:

a : b = 3 : 4

b : c = 2 : 3

c : d = 5 : 6

First, make the 'b' term same in both ratios a : b and b : c:

a : b = 3 : 4 = 3 × 2 : 4 × 2 = 6 : 8

b : c = 2 : 3 = 2 × 4 : 3 × 4 = 8 : 12

Now, make the 'c' term same in both ratios b : c and c : d:

c : d = 5 : 6 = 5 × 3 : 6 × 3 = 15 : 18

Now, combine a : b : c : d:

a : b = 6 : 8

b : c = 8 : 12

c : d = 15 : 18

Therefore, a : b : c : d = 6 : 8 : 12 : 15 : 18

=> Simplified: 15 : 20 : 30 : 36

Therefore The correct answer is option (3).

Q76. Answer: (b) Exclusion Dictionary

The correct answer is Exclusion Dictionary

Key Points

• The Exclusion Dictionary in Microsoft Word allows you to exclude specific sections or types of text from the spelling and grammar check.

• It is particularly useful for omitting proper nouns, technical terms, or other specialized language that you don't want to be flagged by the spell checker.

• This feature helps maintain the accuracy of the spelling and grammar check by ignoring words that are intentionally spelled differently or are not part of the standard dictionary.

• The Exclusion Dictionary can be managed and edited to include or exclude words as needed, providing flexibility in document editing and proofreading.

Additional Information

• Thesaurus in Microsoft Word helps find synonyms and antonyms for a selected word but does not exclude sections from spelling and grammar checks.

• AutoCorrect automatically corrects common spelling and typing errors as you type, but it also does not exclude specific text sections from checks.

• Spell Check is the feature that reviews spelling and grammar across the entire document, identifying errors but not excluding any sections unless configured through settings like the Exclusion Dictionary.

Q77. Answer: (a) Odissi

The correct answer is Odissi

Key Points

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• Sanjukta Panigrahi was a renowned classical dancer from India.

• She is most famously associated with the Odissi dance form.

• Odissi is one of the eight classical dance forms of India and originates from the state of Odisha.

• Sanjukta Panigrahi played a pivotal role in popularizing Odissi dance on the global stage.

Additional Information

• Odissi dance is characterized by its fluid movements, intricate gestures, and expressive facial expressions.

• The dance form has a long history, with roots tracing back to ancient temples in Odisha, where it was performed as a form of worship.

• Sanjukta Panigrahi received numerous awards for her contributions to Odissi, including the Padma Shri and the Sangeet Natak Akademi Award.

Q78. Answer: (c) Sanyasi Rebellion

The correct answer is Sanyasi Rebellion

Key Points

• Anand Math is a famous novel written by Bankim Chandra Chatterjee.

• The novel is based on the Sanyasi Rebellion, which took place in the late 18th century against the British rule in India.

• The Sanyasi Rebellion involved Hindu ascetics (sanyasis) who rebelled against the British East India Company.

• The novel is noted for its patriotic themes and the famous song "Vande Mataram", which later became a rallying cry for the Indian independence movement.

• It was first published in 1882 and remains a significant work in Indian literature.

Additional Information

• The Paika Rebellion was an armed rebellion against the British East India Company in 1817 in Odisha.

• The Kuki Revolt refers to various uprisings by the Kuki people in Northeast India.

• The Mappila Rebellion, also known as the Malabar Rebellion, was an uprising against British authority and Hindu landlords in Kerala by the Mappila Muslims in 1921.

• Bankim Chandra Chatterjee is considered one of the greatest writers in Indian literature and his works played a crucial role in the Indian renaissance.

Q79. Answer: (a) boxing

The correct answer is boxing

Key Points

• Lovlina Borgohain is associated with the sport of boxing.

• She is an Indian boxer who has made significant contributions to the sport.

• Lovlina has represented India in various international competitions and has won several medals.

• She gained widespread recognition for her performance in the Tokyo 2020 Olympics, where she won a bronze medal in the women's welterweight category.

• Her achievements have made her a prominent figure in Indian sports, especially in boxing.

Additional Information

• Lovlina Borgohain was born on 2nd October 1997 in the Golaghat district of Assam, India.

• She started her boxing career at a young age and quickly rose through the ranks due to her talent and hard work.

• She has been honored with several awards, including the prestigious Arjuna Award for her contributions to boxing.

• Lovlina continues to inspire many young athletes in India, particularly those aspiring to pursue a career in boxing.

Q80. Answer: (a) Madhya Pradesh

The correct answer is Madhya Pradesh

Key Points

• Madhya Pradesh is the state where Pai songs are accompanied by the Saria dance during the rain festivals.

• The Pai songs and Saria dance are traditional cultural expressions of the local communities in Madhya Pradesh.

• These performances are an integral part of the rain festivals, celebrating the arrival of monsoon and the agricultural season.

• The festival and the associated dance and music reflect the rich cultural heritage and the agrarian lifestyle of the region.

Additional Information

• Madhya Pradesh, known as the "Heart of India," is renowned for its diverse culture and traditions.

• The state has a rich history and is home to several UNESCO World Heritage Sites, including the Khajuraho Group of Monuments and the Sanchi Stupa.

• The traditional music and dance forms of Madhya Pradesh, such as the Pai songs and Saria dance, play a significant role in the cultural identity of the state.

• The rain festivals in Madhya Pradesh not only celebrate the monsoon but also bring communities together, strengthening social bonds and fostering a sense of community.

Q81. Answer: (c) Bihar and Arunachal Pradesh

The correct answer is Bihar and Arunachal Pradesh

Key Points

• Bihar and Arunachal Pradesh recorded the lowest literacy rates as per the Census of India 2011.

• The Census of India 2011 is the 15th National census survey conducted by the Census Organization of India.

• Bihar had a literacy rate of 61.80%, which was the lowest among all states.

• Arunachal Pradesh had a literacy rate of 66.95%, placing it among the lowest literacy rates in the country.

• These figures highlight the educational challenges faced by these states and the need for focused educational policies and programs.

Additional Information

• The Census of India is conducted every ten years by the Office of the Registrar General and Census Commissioner, under the Ministry of Home Affairs, Government of India.

• The census provides comprehensive data on the demographic, social, and economic characteristics of the Indian population.

• It is crucial for planning and policy-making processes in various sectors, including education, healthcare, and infrastructure development.

• The literacy rate is a key indicator of educational attainment and is defined as the percentage of people aged seven and above who can read and write with understanding.

• Efforts to improve literacy rates include government initiatives like the Sarva Shiksha Abhiyan and the National Literacy Mission.

Q82. Answer: (a) Thanjavur

The correct answer is Thanjavur

Key Points

• Brihadiswara Temple is located in Thanjavur, Tamil Nadu.

• It is one of the largest South Indian temples and an exemplary example of Dravidian architecture.

• The temple was built by Raja Raja Chola I in 1010 AD.

• It is a part of the UNESCO World Heritage Site known as the "Great Living Chola Temples".

• The temple is dedicated to Lord Shiva and is also known as Peruvudaiyar Kovil.

Additional Information

• The temple's Vimana (temple tower) is one of the tallest of its kind in the world.

• The temple is renowned for its architectural brilliance and intricate sculptures.

• The temple complex includes a massive statue of Nandi (sacred bull), carved out of a single stone.

• It is an important pilgrimage site and a major tourist attraction in Tamil Nadu.

• The Brihadiswara Temple stands as a testament to the Chola dynasty's contribution to art, architecture, and culture.

Q83. Answer: (a) United Nations Convention on the Law of the Sea relating to repression of piracy on high seas.

The correct answer is United Nations Convention on the Law of the Sea relating to repression of piracy on high seas.

Key Points

• The Maritime Anti-Piracy Act, 2022, was enacted to give effect to the United Nations Convention on the Law of the Sea (UNCLOS) relating to the repression of piracy on the high seas.

• UNCLOS provides a comprehensive legal framework governing the rights and responsibilities of nations in their use of the world's oceans, promoting the peaceful use of the seas and the equitable and efficient utilization of their resources.

• It includes provisions to combat piracy and armed robbery at sea, ensuring that all states cooperate to the fullest possible extent in the repression of piracy.

• The Act enables the Indian government to take stringent measures against piracy, ensuring the safety and security of maritime navigation and protecting the interests of the nation.

Additional Information

• The United Nations Convention on the Law of the Sea (UNCLOS) was adopted in 1982 and came into force in 1994.

• It is often referred to as the "Constitution for the oceans," establishing guidelines for businesses, the environment, and the management of marine natural resources.

• UNCLOS has been ratified by over 160 countries, including India, which ratified the convention on June 29, 1995.

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• The convention covers various aspects of maritime law, including territorial waters, contiguous zones, continental shelves, and exclusive economic zones.

• India's commitment to UNCLOS is reflected in its national legislation, including the Maritime Anti-Piracy Act, 2022, which aligns with the international standards set by the convention.

Q84. Answer: (c) National income = NDP at factor cost + net factor income from abroad

The correct answer is National income = NDP at factor cost + net factor income from abroad

Key Points

• The correct relationship is National income = NDP at factor cost + net factor income from abroad.

• This equation reflects the true measure of a nation's income, taking into account both domestic production and net income received from abroad.

• National income is a key indicator used to assess the economic health of a country.

• Net factor income from abroad includes incomes earned by residents from overseas investments minus incomes earned by foreign residents from domestic investments.

Additional Information

• Gross Domestic Product (GDP) at market price is the total value of all final goods and services produced within a country in a given period.

• Net Domestic Product (NDP) at market price is GDP minus depreciation.

• Domestic income is NDP at factor cost plus net indirect taxes.

Q85. Answer: (b) Mercury

The correct answer is Mercury

Key Points

• Mercury is the fastest planet in our solar system, traveling through space at about 29 miles (47 kilometers) per second.

• It is the closest planet to the Sun, which contributes to its high orbital speed.

• Mercury completes one orbit around the Sun in just 88 Earth days.

• The high speed and short orbital period are due to Mercury's proximity to the Sun, resulting in stronger gravitational forces.

Additional Information

• Mercury has a very thin atmosphere, which is not capable of slowing down meteoroids, resulting in many impact craters on its surface.

• It experiences extreme temperature variations, with daytime temperatures rising to 800 degrees Fahrenheit (427 degrees Celsius) and dropping to -290 degrees Fahrenheit (-179 degrees Celsius) at night.

• Despite its speed and proximity to the Sun, Mercury is not the hottest planet in our solar system; that title goes to Venus due to its thick, heat-trapping atmosphere.

• Mercury's rapid orbit was one of the key pieces of evidence leading to the development of Einstein's theory of general relativity.

Q86. Answer: (a) epistasis

The correct answer is epistasis

Key Points

• Epistasis is the phenomenon where one gene masks the phenotypic expression of another gene at a different locus.

• It involves the interaction between nonallelic genes, meaning genes that are not alleles of each other.

• This interaction can modify the expected phenotypic ratios in genetic crosses.

• Epistasis is different from other genetic interactions like linkage, where genes are located close to each other on the same chromosome.

Additional Information

• Linkage refers to genes located close to each other on the same chromosome that tend to be inherited together.

• Incomplete inheritance (or incomplete dominance) occurs when the phenotype of the heterozygote is intermediate between the phenotypes of the homozygotes.

• Complete inheritance (or complete dominance) occurs when the phenotype of the heterozygote is the same as the phenotype of the dominant homozygote.

Q87. Answer: (d) numbers

The correct answer is numbers.

Key Points

• Rows in MS-Excel are identified by numbers.

• Each row in an Excel spreadsheet is labeled with a unique number, starting from 1 at the top and increasing sequentially.

• These numbers help to organize and reference data within the spreadsheet, allowing users to easily locate and manipulate information.

• Rows run horizontally across the spreadsheet, intersecting with columns which are identified by letters.

Additional Information

• Columns in MS-Excel are identified by letters, starting from A and continuing to Z, then AA to ZZ, and so on.

• Excel spreadsheets can contain up to 1,048,576 rows and 16,384 columns in a single worksheet.

• Excel is widely used for data analysis, financial modeling, and other tasks requiring organized data representation.

• Excel also provides various tools and functions to perform calculations, create charts, and automate repetitive tasks.

Q88. Answer: (c) wide

The correct answer is wide

Key Points

• Wide is called by the umpire in cricket when the bowler doesn't deliver the ball within reach of the batter.

• A wide ball is one that is judged by the umpire to be too wide or too high for the batter to hit.

• If a bowler bowls a wide, the batting side is awarded one extra run, and the ball has to be bowled again.

• Wides are considered to be the fault of the bowler and are counted against their bowling statistics.

• The rules regarding wides can vary slightly depending on the format of the game and the level of play.

Additional Information

• The concept of a wide ball was introduced to make sure that bowlers do not bowl deliveries that are impossible for batters to play.

• In limited-overs cricket, wides are particularly costly as they add to the total score and require an extra ball to be bowled.

• There are specific guidelines for judging wides in one-day internationals (ODIs) and Twenty20 (T20) matches, which are generally stricter than those in Test matches.

• In some cases, repeated wides can lead to disciplinary actions against the bowler, including being removed from the attack.

Q89. Answer: (c) Dharmapala

The correct answer is Dharmapala

Key Points

• Dharmapala was one of the significant rulers involved in the Tripartite Struggle for the possession of Kannauj.

• The Tripartite Struggle was a prolonged conflict among three powerful dynasties: the Gurjara-Pratiharas, the Palas, and the Rashtrakutas.

• Dharmapala was the ruler of the Pala Dynasty and played a crucial role in the contest for Kannauj, a region of strategic importance in Northern India.

• During his reign, Dharmapala extended his influence over Northern India and sought to establish his supremacy over Kannauj.

• The struggle for Kannauj had significant implications for the control of trade routes and political dominance in the region.

Additional Information

• The Tripartite Struggle lasted for nearly two centuries and was characterized by shifting alliances and frequent battles.

• The city of Kannauj was highly coveted due to its prime location and economic significance.

• Other notable rulers involved in the Tripartite Struggle include Rashtrakuta King Dhruva and Gurjara-Pratihara King Nagabhata II.

• The struggle eventually weakened all three dynasties, paving the way for the rise of new powers in the Indian subcontinent.

Q90. Answer: (d) Intel

The correct answer is Intel

Key Points

• Intel has collaborated with the Central Board of Secondary Education (CBSE) and the Ministry of Education to launch the 'AI For All' initiative.

• The purpose of the 'AI For All' initiative is to create a basic understanding of artificial intelligence (AI) for everyone in India.

• The initiative aims to demystify AI for the general public and help people understand the potential of AI in various aspects of life and work.

• The program is designed to be accessible to people from all walks of life, regardless of their age, education, or profession.

• This collaboration is part of Intel's broader commitment to promoting AI literacy and technological education in India.

Additional Information

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• The Central Board of Secondary Education (CBSE) is a national level board of education in India for public and private schools, controlled and managed by the Government of India.

• The Ministry of Education, formerly known as the Ministry of Human Resource Development (MHRD), is responsible for the development of human resources in India.

• Artificial Intelligence (AI) is a branch of computer science that aims to create systems capable of performing tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and language translation.

• Intel has been at the forefront of AI research and development, contributing significantly to advancements in AI technologies and applications.

Q91. Answer: (c) Haryana

The correct answer is Haryana

Key Points

• The Pinjore Heritage Festival is organized by the state of Haryana.

• It is celebrated at the Pinjore Gardens, also known as Yadavindra Gardens, which is a historic 17th-century garden.

• The festival showcases the rich cultural heritage of Haryana through various cultural performances, crafts, and food stalls.

• The event aims to promote tourism and preserve the traditional arts and crafts of the region.

Additional Information

• The Pinjore Gardens were built by the Mughal governor Fidai Khan in the 17th century and are an excellent example of Mughal garden architecture.

• Haryana Tourism organizes the festival annually to highlight the state's history, culture, and traditions.

• The festival also includes various competitions, folk dances, musical performances, and traditional games.

• The event provides a platform for local artisans and craftsmen to display and sell their products, contributing to the local economy.

Q92. Answer: (b) Distinguished economists from India and abroad were invited to advise on India’s economic development durin...

The correct answer is Distinguished economists from India and abroad were invited to advise on India's economic development during the first five-year plan period

Key Points

• Option 2 is incorrect because, during the first five-year plan period, distinguished economists from India and abroad were not specifically invited to advise on India's economic development.

• The Planning Commission of India was indeed set up in 1950 (Option 1).

• India did borrow the idea of five-year plans from the former Soviet Union (Option 3).

• The chairmanship of the Planning Commission of India was indeed given to the Prime Minister (Option 4).

Additional Information

• The Planning Commission was an institution in the Government of India, which formulated India’s Five-Year Plans, among other functions.

• It was established in March 1950, and Jawaharlal Nehru was the first Chairman.

• The Planning Commission was replaced by the NITI Aayog (National Institution for Transforming India) in 2015.

• The concept of Five-Year Plans in India was borrowed from the Soviet Union, which was the first country to implement such a model.

Q93. Answer: (b) 1 - a, 2 - d, 3 - c, 4 - b

The correct answer is 1 - a, 2 - d, 3 - c, 4 - b

Key Points

• Goa is matched with Mormugao Port.

• West Bengal is matched with Haldia Port.

• Tamil Nadu is matched with Tuticorin Port.

• Gujarat is matched with Kandla Port.

• Thus, the correct mapping is option 2: 1 - a, 2 - d, 3 - c, 4 - b.

Additional Information

• Mormugao Port is one of the leading ports in India located in the state of Goa.

• Haldia Port is a major river port in the state of West Bengal.

• Tuticorin Port, also known as V.O. Chidambaranar Port, is located in the state of Tamil Nadu.

• Kandla Port, now known as Deendayal Port, is located in the state of Gujarat.

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Q94. Answer: (c) Lindy Cameron

The correct answer is Lindy Cameron

Key Points

• Lindy Cameron was appointed as the British High Commissioner to India in April 2024.

• The role of the British High Commissioner involves representing the United Kingdom's interests in India, fostering diplomatic relations, and enhancing bilateral cooperation between the two nations.

• Prior to this appointment, Lindy Cameron has held various significant positions within the UK government, contributing to international development and diplomatic efforts.

• The appointment marks an important step in strengthening the ties between the United Kingdom and India.

Additional Information

• The British High Commission in India is responsible for promoting British interests and supporting British nationals residing in or visiting India.

• The High Commissioner plays a crucial role in trade negotiations, cultural exchanges, and addressing global challenges such as climate change and security.

• India and the United Kingdom share a historic and multifaceted relationship, with collaboration in areas including education, technology, defense, and healthcare.

• Lindy Cameron's appointment comes at a time when both nations are looking to deepen their strategic partnership and explore new areas of cooperation.

Q95. Answer: (a) Kerala

The correct answer is Kerala

Key Points

• The Nehru Trophy Boat Race is held in the Punnamada Lake near Alappuzha in Kerala.

• It is one of the most popular and competitive boat races in Kerala, attracting a large number of tourists and participants.

• The race is named after India's first Prime Minister, Jawaharlal Nehru, who inaugurated the event in 1952.

• The highlight of the event is the competition of the snake boats (Chundan Vallam), which are traditional war boats of Kerala.

• The event is usually held on the second Saturday of August every year.

Additional Information

• Kerala is known for its intricate network of backwaters and canals, making it an ideal location for boat races.

• Besides the Nehru Trophy Boat Race, Kerala hosts several other boat races like the Champakulam Moolam Boat Race, Aranmula Uthrattadi Vallamkali, and the Payippad Jalotsavam.

• The boat races are part of Kerala's vibrant culture and are often associated with the Onam festival, which is the state's harvest festival.

• The snake boats used in these races are typically 100 to 120 feet long and require about 100 rowers to maneuver.

• The boat races are a symbol of teamwork, endurance, and the rich cultural heritage of Kerala.

Q96. Answer: (a) cyclotron

The correct answer is cyclotron

Key Points

• A cyclotron is a type of particle accelerator invented by Ernest O. Lawrence in 1934.

• It accelerates charged particles using a high-frequency alternating voltage applied between two "D" shaped electrodes (called "dees") within a magnetic field.

• The particles move in a spiral path, gaining energy with each pass through the electric field.

• Cyclotrons are used in various applications including medical isotope production, radiation therapy, and nuclear physics research.

Additional Information

• Copatron, cosmotron, and cryotron are not related to particle acceleration in the context of the provided options.

• The cosmotron was a particle accelerator but not as widely used as the cyclotron for the applications mentioned.

• The cryotron is a cryogenic electronic device and unrelated to particle acceleration.

• Particle accelerators play a crucial role in modern physics and have contributed to numerous scientific discoveries, including the Higgs boson.

Q97. Answer: (a) Andhra Pradesh

The correct answer is Andhra Pradesh

Key Points

• Andhra Pradesh is one of the states in India that has mangrove forests.

• Mangrove forests are coastal ecosystems found in tropical and subtropical regions, characterized by salt-tolerant trees and shrubs.

• These forests play a crucial role in protecting coastal areas from erosion, storm surges, and maintaining biodiversity.

• Andhra Pradesh has significant mangrove cover, particularly in the Godavari and Krishna delta regions.

Additional Information

• The other options listed do not have mangrove forests. For instance, Manipur is a landlocked state, and Telangana and Rajasthan do not have coastal regions conducive for mangrove ecosystems.

• Mangroves are vital for the environment as they provide habitat for various species, support fisheries, and help in carbon sequestration.

• Conservation efforts are essential to protect these unique ecosystems from threats like deforestation, pollution, and climate change.

• In India, mangrove forests are also found in other states such as West Bengal (Sundarbans), Odisha, Tamil Nadu, and Gujarat.

Q98. Answer: (d) Fundamental duties

The correct answer is Fundamental duties

Key Points

• The 42nd Amendment of the Indian Constitution, enacted in 1976, added a new part to the Constitution, Part IVA, which deals with Fundamental Duties.

• It introduced a list of ten Fundamental Duties for the citizens of India, which are outlined in Article 51A.

• The amendment aimed to emphasize the responsibilities of citizens in addition to their rights, promoting a sense of duty towards the nation.

• Some of the key duties include respecting the national symbols, cherishing the noble ideals of the freedom struggle, and protecting the sovereignty, unity, and integrity of India.

Additional Information

• The 42nd Amendment is also known as the “Mini-Constitution” due to its extensive changes to the Constitution.

• It was enacted during the Emergency period by the Indira Gandhi government.

• In addition to Fundamental Duties, the amendment also brought changes to the Preamble, the Seventh Schedule, and various articles, enhancing the power of the central government.

• It is one of the most controversial amendments due to the significant impact it had on the balance of power between the central and state governments.

Q99. Answer: (d) Only 4

The correct answer is Only 4

Key Points

• Eleventh Fundamental Duty was added by the 86th Constitutional Amendment Act, not the 78th.

• Fundamental Duties are indeed obligatory in nature.

• Fundamental Rights and Fundamental Duties are considered complementary to each other.

• The introduction of Article 51A created a strong base for a concrete national character and strong harmony among citizens.

Additional Information

• Article 51A was added to the Constitution by the 42nd Amendment Act, 1976.

• The Fundamental Duties are inspired by the Constitution of the former Soviet Union and aim to promote a sense of discipline and commitment among citizens.

• Currently, there are eleven Fundamental Duties listed in Article 51A of the Constitution.

Q100. Answer: (d) Shubha Mudgal

The correct answer is Shubha Mudgal

Key Points

• Shubha Mudgal is a renowned singer of Hindustani classical music.

• She has received extensive training in Hindustani classical music from various maestros.

• Shubha Mudgal has been awarded several prestigious awards for her contributions to Indian classical music.

• Her repertoire includes not only classical music but also Khayal, Thumri, and Dadra styles.

Additional Information

• Hindustani classical music is one of the two principal types of Indian classical music, the other being Carnatic music.

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- It has a rich tradition and history and is known for its intricate raga system.
- Famous exponents of Hindustani classical music include legends like Ustad Bismillah Khan, Pandit Ravi Shankar, and Lata Mangeshkar.

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