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Part – I
GENERAL INTELLIGENCE

Directions : In Question Nos. **1** to **7**, find the odd number/letters/number pair from the given alternatives.

1. (A) Appreciate (B) Admonish
(C) Applaud (D) Admire

2. (A) Anther (B) Retina
(C) Ovary (D) Petal

3. (A) Hill Myna
(B) House Sparrow
(C) Emerald Dove
(D) Imperial Eagle

4. (A) DEFY (B) HINT
(C) MOST (D) SUVY

5. (A) JLOS (B) GHIM
(C) HJMQ (D) PRUY

6. (A) 24 (B) 28 (C) 42 (D) 56

7. (A) 1, 2, 4, 8 (B) 2, 6, 10, 14
(C) 3, 9, 15, 21 (D) 7, 21, 35, 49

8. How many 8's followed by an even number and preceded by an odd number ?
7, 8, 5, 6, 7, 8, 4, 3, 2, 1, 3, 8, 6, 4, 3, 7, 8, 4, 2, 1, 3, 8, 2, 8, 9
(A) 4 (B) 3 (C) 2 (D) 5

9. Which is odd one ?
(A) BGIE (B) AGHB
(C) DJGE (D) AGKD

Directions : In Question Nos. **10** to **12**, which one of the given responses would be a meaningful order of the following ?

10. 1. Crawling 2. Sitting
3. Running 4. Standing
5. Walking
(A) 1 2 4 3 5 (B) 1 4 5 2 3
(C) 1 2 4 5 3 (D) 1 4 2 5 3

11. Diagnosis, Post operational care, Operation, Discharge
(A) Discharge, Operation, Diagnosis, Post operational care
(B) Operation, Diagnosis, Discharge, Post operational care
(C) Diagnosis, Operation, Post operational care, Discharge
(D) Post operational care, Discharge, Operation, Diagnosis

12. 1. Serve 2. Vegetable
3. Package 4. Prepare
5. Store 6. Cut
(A) 2, 4, 6, 5, 3, 1 (B) 6, 4, 5, 1, 3, 2
(C) 2, 6, 4, 3, 5, 1 (D) 6, 4, 5, 1, 2, 3

Directions : In Question Nos. **13** to **16**, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

13. Z, U, Q, ?, L
(A) I (B) K (C) M (D) N

14. 3, 6, 8, 16, 18, ?
(A) 28 (B) 34 (C) 36 (D) 54

15. 17, 13, 11, 7, 5, ?
(A) 0 (B) 1 (C) 2 (D) 3

16. 4, 9, 19, 39, ?
(A) 49 (B) 59 (C) 79 (D) 89

Directions : In Question Nos. **17** & **18**, which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?

17. gfe _ ig _ eii _ fei _ gf _ ii
(A) eifgi (B) figie
(C) ifgie (D) ifige

18. aa _ a _ b _ abaa _
(A) abab (B) baab
(C) baba (D) abba

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19. A bus driver wants to travel a distance of 200 km. He travels with the speed of 40 km/hr. He takes rest at 3 different hotels for 15 minutes, 30 minutes and 15 minutes respectively. He starts his journey at 9.00 a.m. At what time does he reach his final destination ?

(A) 3.00 a.m. (B) 3.00 p.m.
(C) 3.30 a.m. (D) 2.30 p.m.

20. Looking at the portrait of a man, Ram said, "His mother is the wife of my father's son. Brothers and sisters I have none". Whose portrait was Ram looking at ?

(A) His grandfather
(B) His son
(C) His brother
(D) His cousin

21. From the given alternatives, select the word which cannot be formed using the letters of the given word.
ROTARYBLUES

(A) STARY (B) LOTUS
(C) TABLET (D) BUTLER

22. In a certain code, if AUDITORIUM is written as MUIROTIDUA, how will MISFORTUNE be written in that code ?

(A) ENUTROFSIM
(B) ENUTROMISF
(C) TUNEROFSIM
(D) TUNEMISFOR

23. If TODAY is coded as UQECZ, how can BEFORE be coded ?

(A) CCBHIG (B) HIJQSG
(C) CGGQSG (D) CPSSF

Directions : In Question Nos. **24** and **25**, find the missing number from the given responses.

24.

18		20		8	
16	20	18	22	9	?

(A) 6 (B) 7 (C) 10 (D) 11

25.

2		4		5		3
3	3	3		6	?	6
1		2		1		6

(A) 5 (B) 2 (C) 3 (D) 1

26. Find out the numbers that would fit in the second row and third row middle and last blank boxes respectively.

18	23	16
17	19	?
22	?	?

(A) 26, 24, 25 (B) 15, 21, 20
(C) 21, 15, 20 (D) 25, 24, 26

27. In a code language the following alphabets are coded in a particular way :

A B C D E F G H I O P R S T U
+ | ‖ ╫ ═ ╪ ╫ ‖| / ╪ ∨ ∧ < > \

Which word can be decoded from the following ?

| ╪ + < >

(A) BOAST (B) TOAST
(C) GHOST (D) TASTE

28. After interchanging ÷ and ×, 10 and 5, which one of the following becomes a correct equation ?

(A) $(30 \div 5) \times 10 = 24$
(B) $(30 \times 10) \div 5 = 60$
(C) $(30 \div 10) \times 5 = 18$
(D) $(10 \div 30) \times 5 = 70$

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29. Ram walks 2 km to the East, then he turns to South and walks 6 km. He again turns to East and walks 2 km. Then he turns to North and walks 12 km. How far is he from the starting point ?

(A) 7 km (B) 7.1 km
(C) 7.2 km (D) 7.3 km

30. Joel and Tom were travelling from town X to town Y which was 210 km apart. Joel set off 1 hr 15 min later than Tom but arrived 15 min earlier. If the average speed of Tom was 42 km/h, find the average speed of Joel.

(A) 50 km/h (B) 60 km/h
(C) 65 km/h (D) 70 km/h

Directions : In Question Nos. **31** & **32,** two statements are given followed by four/two conclusions I, II, III & IV. You have to consider the two statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow from the given statements.

31. **Statements :** **(A)** All books are trees.
(B) All trees are lions.
Conclusions : **I.** All books are lions.
II. All lions are books.
III. All trees are books.
IV. Some lions are books.

(A) Only II and III follow.
(B) Only I and IV follow.
(C) None of the conclusions follows.
(D) All conclusions follow.

32. **Statements :** **(A)** All men are employed.
(B) No employees are professionals.
Conclusions : **I.** No men are unemployed.
II. No men are professionals.

(A) Only I follows.
(B) Only II follows.
(C) Neither I nor II follows.
(D) Both I and II follow.

Directions : In Question Nos. **33** to **41,** select the related letter/word/number from the given alternatives.

33. Red Blood Cells : Erythrocytes : : White Blood Cells : ?

(A) Thrombocytes
(B) Lymphocytes
(C) Monocytes
(D) Leucocytes

34. Moon : Chandrayan :: Mars : ?

(A) Apple (B) Aryabhata
(C) Mangalyan (D) Bhaskara

35. Germany : Mark : : Morocco : ?

(A) Dollar (B) Lira
(C) Dirham (D) Kroon

36. LJHF : USQO : : QOMK : ?

(A) QPSR (B) PNMK
(C) VTRP (D) YXWU

37. COUNTRY : FRXQWUB : : EXAMINE : ?

(A) HAPDLQH (B) HADPLQH
(C) HAHPLDQ (D) GBQDVWB

38. 3 : 11 : : 7 : ?

(A) 22 (B) 29
(C) 51 (D) 18

39. 6 : 18 : : 4 : ?

(A) 2 (B) 6
(C) 8 (D) 16

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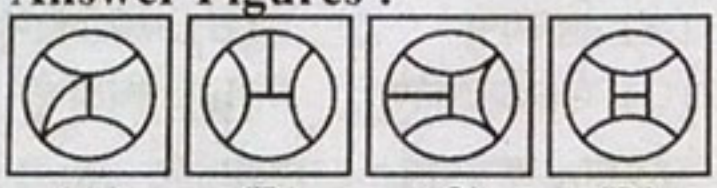
40. 7 : 56 : : 9 : ?
(A) 63 (B) 81
(C) 90 (D) 99

41. If BAT = CBU, CAT =
(A) DBU
(B) BUD
(C) DBV
(D) None of the above

42. Among the four answer figures, which figure can be formed from the cut-pieces given below in the question figure ?
Question Figure :

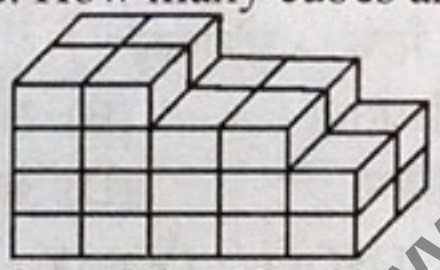


Answer Figures :



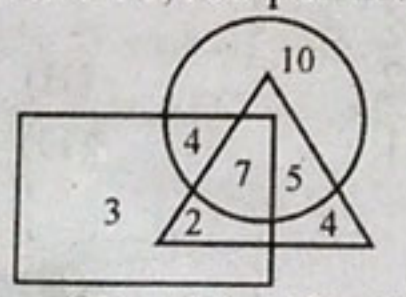
(A) (B) (C) (D)

43. Few cubes are arranged as shown in the figure. How many cubes are unseen ?



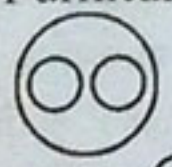
(A) 8 (B) 10 (C) 12 (D) 14

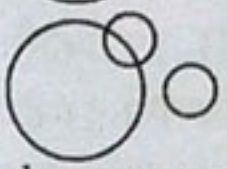
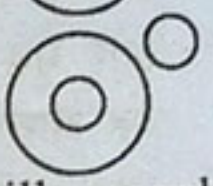
44. In the figure, circle represents business people, triangle the educated persons and the rectangle stands for persons with income more than ₹ 10,000 per month. The number standing for educated business people with income more than ₹ 10,000 per month is



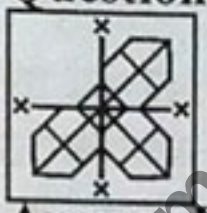
(A) 7 (B) 10 (C) 3 (D) 4

45. Which one of the following diagrams represents the correct relationship among Table, Chair and Furniture ?

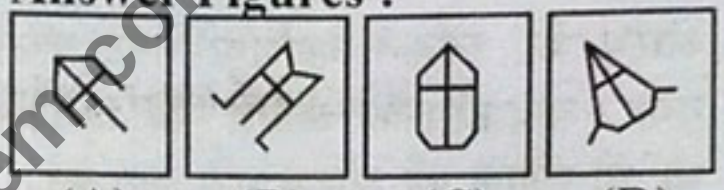
(A)  (B) 

(C)  (D) 

46. Which answer figure will complete the question figure ?
Question Figure :

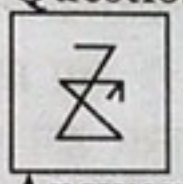


Answer Figures :

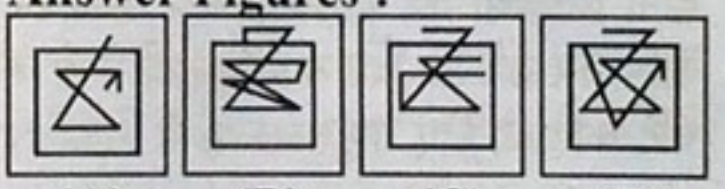


(A) (B) (C) (D)

47. From the given answer figures, select the one in which the question figure is hidden/embedded.
Question Figure :



Answer Figures :

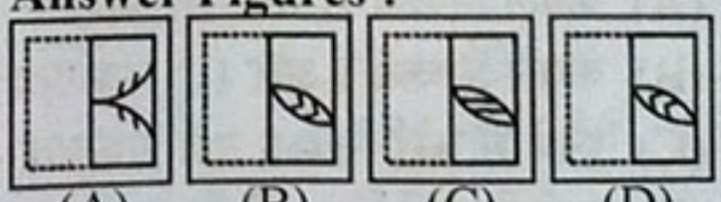


(A) (B) (C) (D)

48. Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.
Question Figure :



Answer Figures :



(A) (B) (C) (D)

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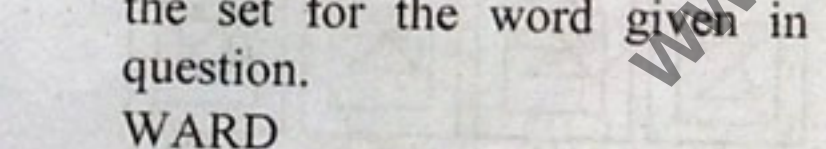
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49. Which of the answer figure is exactly mirror image of given figure ?

Question Figure :

654

Answer Figures :



(A) (B) (C) (D)

50. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column e.g., 'P' can be represented by 12, 24 etc., and 'O' can be represented by 57, 68 etc. Similarly, you have to identify the set for the word given in the question.

WARD

Matrix – I

	0	1	2	3	4
0	P	K	E	A	S
1	A	S	P	K	E
2	K	E	A	S	P
3	S	P	K	E	A
4	E	A	S	P	K

Matrix – II

	5	6	7	8	9
5	R	D	O	W	C
6	W	C	R	D	O
7	D	O	W	C	R
8	C	R	D	O	W
9	O	W	C	R	D

(A) 58, 10, 67, 75 (B) 77, 22, 67, 88

(C) 96, 42, 79, 87 (D) 89, 34, 86, 96

FOR VISUALLY HANDICAPPED CANDIDATES ONLY

Directions : In Question Nos. **42** to **44,** select the related letter/word/number from the given alternatives.

42. Frog : Amphibian :: Whale : ?

(A) Fish (B) Reptile

(C) Amphibian (D) Mammal

43. Giant : Dwarf : : Genius : ?

(A) Wicked (B) Gifted

(C) Idiot (D) Short

44. 20 : 60 : : 40 : ?

(A) 10 (B) 14 (C) 8 (D) 12

Directions : In Question Nos. **45** to **47,** find the odd number/letters/number pair from the given alternatives.

45. (A) Phi (B) Gamma

(C) Delta (D) Peso

46. (A) Contact lens (B) Spectacles

(C) Microphone (D) Binoculars

47. (A) 121 : 341 (B) 183 : 392

(C) 235 : 427 (D) 289 : 501

Directions : In Question Nos. **48** to **50,** find the missing term of the series from the given responses.

48. B, F, K, ?, X

(A) P (B) Q (C) R (D) S

49. 10, 18, 28, 40, 54, 70, ?

(A) 85 (B) 86 (C) 87 (D) 88

50. LMPS, VWZC, FGJM, ?

(A) MNQS (B) OPRT

(C) PQTW (D) QTWX

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Part – II
ENGLISH LANGUAGE

Directions : In Question Nos. **51** to **55**, sentences given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate oval (●) in the Answer Sheet.

51. She had always hoped that her daughter would become _____ doctor.

(A) an
(B) the
(C) a
(D) none of the above

52. Due to heavy rains, water had _____ in the low lying areas.

(A) gathered (B) stagnated
(C) assembled (D) entered

53. This man was an accomplice _____ the thief.

(A) of (B) in
(C) with (D) from

54. The sick units are detached _____ the main group of companies.

(A) off (B) from
(C) with (D) by

55. Let me congratulate you _____ your success.

(A) at (B) for
(C) with (D) on

Directions : In Question Nos. **56** to **60**, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

56. Equilibrium

(A) Composure (B) Imbalance
(C) Stability (D) Inequality

57. Paucity

(A) Paragon (B) Pronounce
(C) Plethora (D) Persuade

58. Hostile

(A) Joyful (B) Helpful
(C) Friendly (D) Violent

59. Effeminate

(A) Feminine
(B) Androgynous
(C) Soft
(D) Manly

60. Reprimanded

(A) Rebuked (B) Praised
(C) Admonished (D) Shouted

Directions : In Question Nos. **61** to **65**, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

61. Retaliate

(A) Pardon (B) Corrupt
(C) Avenge (D) Rejoice

62. Epidemic

(A) Endemic (B) Local
(C) Widespread (D) Natural

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63. Quicken
(A) Accelerate (B) Delay
(C) Hinder (D) Stop

64. Transient
(A) Temporary (B) Durable
(C) Timely (D) Transparent

65. Compensate
(A) Compile
(B) Make up for
(C) Result in
(D) Complete

Directions : In Question Nos. **66** to **70**, four alternatives are given for the Idiom/Phrase underlined in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

66. Our school is <u>within a stone's throw</u> of the railway station.
(A) within a certain radius
(B) very far off
(C) at a short distance
(D) within a definite distance

67. I want <u>to tell you in a nut shell</u>, lust for money and power ruined her life.
(A) to tell as objectively as possible
(B) confidentially
(C) in detail
(D) in a brief manner

68. Deepak did not care for his family, he wanted <u>to gather roses only</u>.
(A) to save money miserly
(B) to paint a rosy picture of the past
(C) to seek all enjoyments of life
(D) to obtain fame by hardwork

69. <u>A close-fisted person</u>
(A) A powerful person
(B) A miser
(C) A close friend
(D) A cowardly person

70. <u>To feather one's nest</u>
(A) To harbour ill feelings
(B) To build one's house
(C) To enrich oneself when opportunity occurs
(D) To get something in abundance

Directions : In Question Nos. **71** to **75**, a part of the sentence is underlined. Below are given alternatives to the underlined part at (A), (B), (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed your answer is (D). Mark your answer in the Answer Sheet.

71. Boil the potatoes and then <u>crush it until soft</u>.
(A) smash it
(B) knead it
(C) mash it
(D) No improvement

72. They presented him <u>a beautiful expensive designer gold</u> pen.
(A) an expensive designer beautiful gold
(B) a beautiful gold expensive designer
(C) a designer gold beautiful expensive
(D) No improvement

73. Hitler was an absolute <u>potentate</u>.
(A) dictator
(B) militant
(C) ruler
(D) No improvement

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74. Having completion of the course, the students left college.
(A) On completion of
(B) In order to complete
(C) Down the completion
(D) No improvement

75. Will you please give me a warm glass of water ?
(A) Will you please give me a glass of warm water ?
(B) Will you please give I a warm glass of water ?
(C) Would you please give I a warm glass of water ?
(D) No improvement

Directions : In Question Nos. **76** to **80**, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

76. Animals that eat flesh
(A) Herbivorous (B) Carnivorous
(C) Omnivorous (D) Insectivorous

77. A fictitious name especially one assumed by an author
(A) Nick name (B) Pseudonym
(C) Sobriquet (D) Pet name

78. Animals which suckle their young
(A) Herbivores (B) Mammals
(C) Carnivores (D) Omnivores

79. A drug or other substance that induces sleep
(A) Reviver (B) Stimulant
(C) Energic (D) Sedative

80. A speech delivered without any preparation
(A) Temporary (B) Exemplary
(C) Extempore (D) Contemporary

Directions : In Question Nos. **81** to **85**, four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the Answer Sheet.

81. (A) Noticible (B) Noticeible
(C) Noticable (D) Noticeable

82. (A) Bilieve (B) Beleive
(C) Believe (D) Beleeve

83. (A) Planeing (B) Planning
(C) Planing (D) Planinng

84. (A) Ubiqutous (B) Ubequitous
(C) Ubiquitous (D) Ubequitus

85. (A) Exenerate (B) Exonerate
(C) Exanrate (D) Exonarate

Directions : In Question Nos. **86** to **95**, in the following passage some of the words have been left out. Read the passage carefully and choose the correct answer to each question out of the four alternatives and fill in the blanks.

No child is **86** spoilt child by birth. It is **87** family conditions and circumstances **88** which a child grows up **89** spoil him. It is common experience that a **90** wanted child or the only child **91** his parents is more prone to **92** spoilt. Such a child becomes arrogant and insolent **93** of the overindulgence and over-protection of the parents. Sometimes it **94** seen that a **95** child also tends to become a nuisance.

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86. (A) them (B) the
(C) a (D) an

87. (A) a (B) the
(C) an (D) them

88. (A) at
(B) on
(C) over
(D) under

89. (A) those
(B) this
(C) that
(D) these

90. (A) much (B) more
(C) little (D) less

91. (A) off (B) for
(C) of (D) in

92. (A) become
(B) becoming
(C) becomes
(D) became

93. (A) so
(B) and
(C) why
(D) because

94. (A) is (B) are
(C) was (D) were

95. (A) neglect
(B) neglected
(C) neglects
(D) neglecting

Directions : In Question Nos. **96** to **100**, some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the oval (●) corresponding to the appropriate letter (A, B, C). If a sentence is free from errors, blacken the oval corresponding to (D) in the Answer Sheet.

96. At this time of the year / (A)
the mountains are / (B)
usually covered with ice. / (C) No error (D)

97. One of my friends (A) / are (B) /
an I.A.S. officer. (C) / No error (D)

98. Paradise Lost (A) / is (B) / a epic poem. (C) /
No error (D)

99. After toiling very hardly / (A)
over a long period of time / (B)
he found that he had met no profit at all. / (C)
No error (D)

100. Excuse (A) / me (B) / interrupting you. (C) /
No error (D)

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Part – III
QUANTITATIVE APTITUDE

101. If 7 men working 7 hrs a day for each of 7 days produce 7 units of work, then the units of work produced by 5 men working 5 hrs a day for each of 5 days is

(A) $\frac{25}{343}$ (B) $\frac{125}{49}$ (C) $\frac{49}{125}$ (D) $\frac{343}{25}$

102. In a regular polygon if one of its internal angle is greater than the external angle by 132°, then the number of sides of the polygon is

(A) 14 (B) 12 (C) 15 (D) 16

103. If V_1, V_2 and V_3 be the volumes of a right circular cone, a sphere and a right circular cylinder having the same radius and same height, then

(A) $V_1 = \frac{V_2}{2} = \frac{V_3}{3}$ (B) $\frac{V_1}{2} = \frac{V_2}{3} = V_3$

(C) $\frac{V_1}{3} = \frac{V_2}{2} = V_3$ (D) $\frac{V_1}{3} = V_2 = \frac{V_3}{2}$

104. Successive discounts of 15% and 20% amount to a single discount of

(A) 35% (B) 32%
(C) 30% (D) 28%

105. The marked price of an article is 10% higher than the cost price. A discount of 10% is given on the marked price. In this kind of sale, the seller bears

(A) no loss, no gain (B) a loss of 5%
(C) a gain of 1% (D) a loss of 1%

106. The ratio of the length of a school ground to its width is 5 : 2. If the width is 40 m, then the length is

(A) 200 m (B) 100 m
(C) 50 m (D) 80 m

107. My grandfather was 9 times older than me 16 years ago. He will be 3 times of my age 8 years from now. Eight years ago, the ratio of my age to that of my grandfather was

(A) 3 : 8 (B) 2 : 5
(C) 1 : 2 (D) 1 : 5

108. A man purchased 7 bags of rice at the rate of ₹ 800 each, 8 bags of rice at ₹ 1000 each and 5 bags of rice at the rate of ₹ 1200 each. What is the average cost of one bag of rice ?

(A) ₹ 1000 (B) ₹ 980
(C) ₹ 1120 (D) ₹ 1050

109. A train runs from Howrah to Bandel at an average speed 20 km/hr and returns at an average speed of 30 km/hr. The average speed (in km/hr.) of the train in the whole journey is

(A) 20 (B) 22.5 (C) 24 (D) 25

110. Salim had to sell vegetables worth ₹ 5,750 for ₹ 4,500 due to heavy rainfall. What is the loss percentage that he has incurred ?

(A) 21.74% (B) 23.47%
(C) 20% (D) 23.45%

111. If selling price of an article is $1\frac{1}{3}$ of its cost price, find gain %.

(A) 25% (B) $33\frac{1}{3}\%$
(C) 1.33% (D) $66\frac{2}{3}\%$

112. A class has two sections, which contain 20 and 30 students. The pass percentage of these sections are 80% and 60% respectively. The pass percentage of whole class is

(A) 60 (B) 68 (C) 70 (D) 78

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113. A number is first decreased by 20%. The decreased number is then increased by 20%. The resulting number is less than the original number by 20. Then the original number is
(A) 200 (B) 400 (C) 500 (D) 600

114. A truck travels 90 km/hr for the first $1\frac{1}{2}$ hours. After that it travels 70 km/hr. Find the time taken by the truck to travel 310 kilometres.
(A) 2.5 hrs (B) 3 hrs
(C) 3.5 hrs (D) 4 hrs

115. The amount ₹ 2,100 became ₹ 2,352 in 2 years at simple interest. If the interest rate is decreased by 1%, what is the new interest ?
(A) ₹ 210 (B) ₹ 220
(C) ₹ 242 (D) ₹ 252

116. The value of $\frac{4x^3 - x}{(2x+1)(6x-3)}$ when $x = 9999$ is
(A) 1111 (B) 2222
(C) 3333 (D) 6666

117. If $a^3 + b^3 = 9$ and $a + b = 3$, then the value of $\frac{1}{a} + \frac{1}{b}$ is
(A) $\frac{1}{2}$ (B) $\frac{3}{2}$ (C) $\frac{5}{2}$ (D) -1

118. If $x = \sqrt{3} - \frac{1}{\sqrt{3}}$ and $y = \sqrt{3} + \frac{1}{\sqrt{3}}$, then the value of $\frac{x^2}{y} + \frac{y^2}{x}$ is
(A) $\sqrt{3}$ (B) $3\sqrt{3}$
(C) $16\sqrt{3}$ (D) $2\sqrt{3}$

119. If $(x - 2)$ is a factor of $x^2 + 3Qx - 2Q$, then the value of Q is
(A) 2 (B) -2 (C) 1 (D) -1

120. If $a + b = 12$, $ab = 22$, then $(a^2 + b^2)$ is equal to
(A) 188 (B) 144 (C) 34 (D) 100

121. Length of a side of a square inscribed in a circle is $a\sqrt{2}$ units. The circumference of the circle is
(A) $2\pi a$ units (B) πa units
(C) $4\pi a$ units (D) $\frac{2a}{\pi}$ units

122. The sides of a rhombus are 10 cm each and a diagonal measures 16 cm. Area of the rhombus is
(A) 96 sq. cm. (B) 160 sq. cm.
(C) 100 sq. cm. (D) 40 sq. cm.

123. The diameter of the front wheel of an engine is $2x$ cm and that of rear wheel is $2y$ cm. To cover the same distance, find the number of times the rear wheel will revolve when the front wheel revolves 'n' times.
(A) $\frac{n}{xy}$ times (B) $\frac{yn}{x}$ times
(C) $\frac{nx}{y}$ times (D) $\frac{xy}{n}$ times

124. The length, breadth and height of a cuboid are in the ratio 3 : 4 : 6 and its volume is 576 cm^3. The whole surface of the cuboid is
(A) 216 cm^2 (B) 324 cm^2
(C) 432 cm^2 (D) 460 cm^2

125. The perimeter and length of a rectangle are 40 m and 12 m respectively. Its breadth will be
(A) 10 m (B) 8 m (C) 6 m (D) 3 m

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126. ST is a tangent to the circle at P and QR is a diameter of the circle. If $\angle RPT = 50°$, then the value of $\angle SPQ$ is
(A) 40° (B) 60° (C) 80° (D) 100°

127. If PA and PB are two tangents to a circle with centre O such that $\angle AOB = 110°$, then $\angle APB$ is
(A) 90° (B) 70° (C) 60° (D) 55°

128. In ΔABC, two points D and E are taken on the lines AB and BC respectively in such a way that AC is parallel to DE. Then ΔABC and ΔDBE are
(A) similar only if D lies outside the line segment AB
(B) congruent only if D lies outside the line segment AB
(C) always similar
(D) always congruent

129. The internal bisectors of the angles B and C of a triangle ABC meet at I.
If $\angle BIC = \frac{\angle A}{2} + X$, then X is equal to
(A) 60° (B) 30° (C) 90° (D) 45°

130. In a ΔABC, the medians AD, BE and CF meet at G, then which of the following is true ?
(A) $AD + BE + CF > \frac{1}{2}(AB + BC + AC)$
(B) $2(AD + BE + CF) > (AB + BC + AC)$
(C) $3(AD + BE + CF) > 4(AB + BC + AC)$
(D) $4(AD + BE + CF) > 3(AB + BC + AC)$

131. The product of all the prime numbers between 80 and 90 is
(A) 83 (B) 89
(C) 7387 (D) 598347

132. The greatest number that will divide 729 and 901 leaving remainders 9 and 5 respectively, is
(A) 15 (B) 16 (C) 19 (D) 20

133. On simplification,
$\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\ldots\ldots\ldots\left(1-\frac{1}{n}\right)$
is equal to
(A) $\frac{1}{n}$ (B) $\frac{2}{n}$
(C) $\frac{2(n-1)}{n}$ (D) $\frac{1}{n(n-1)}$

134. Find the sum of first five terms of the following series :
$\frac{1}{1\times4} + \frac{1}{4\times7} + \frac{1}{7\times10} + \ldots\ldots\ldots + \ldots\ldots\ldots$
(A) $\frac{9}{32}$ (B) $\frac{7}{16}$ (C) $\frac{5}{16}$ (D) $\frac{1}{210}$

135. 5349 is added to 3957. Then 7062 is subtracted from the sum. The result is <u>not</u> divisible by
(A) 4 (B) 3 (C) 7 (D) 11

136. How many men need to be employed to complete a job in 5 days, if 15 men can complete $\frac{1}{3}$ of the job in 7 days ?
(A) 20 (B) 21 (C) 45 (D) 63

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137. If $\tan 2\theta \cdot \tan 3\theta = 1$, where $0° < \theta < 90°$, then the value of θ is

(A) $22\frac{1}{2}°$ (B) $18°$ (C) $24°$ (D) $30°$

138. If $\cos^2\alpha - \sin^2\alpha = \tan^2\beta$, then the value of $\cos^2\beta - \sin^2\beta$ is

(A) $\cot^2\alpha$ (B) $\cot^2\beta$
(C) $\tan^2\alpha$ (D) $\tan^2\beta$

139. If $\sqrt{3}\tan\theta = 3\sin\theta$, then the value of $(\sin^2\theta - \cos^2\theta)$ is

(A) 1 (B) 3 (C) $\frac{1}{3}$ (D) none

140. If $\sin(A + B) = \sin A \cos B + \cos A \sin B$, then the value of $\sin 75°$ is

(A) $\frac{\sqrt{3}+1}{\sqrt{2}}$ (B) $\frac{\sqrt{2}+1}{2\sqrt{2}}$

(C) $\frac{\sqrt{3}+1}{2\sqrt{2}}$ (D) $\frac{\sqrt{3}+1}{2}$

141. ABC is a right angled triangle, right angled at B and $\angle A = 60°$ and AB = 20 cm, then the ratio of sides BC and CA is

(A) $\sqrt{3} : 1$ (B) $1 : \sqrt{3}$
(C) $\sqrt{3} : \sqrt{2}$ (D) $\sqrt{3} : 2$

Directions : Study the following table and answer the questions **142** to **145**.

Population of a locality from 1988 to 1992

Year	Men	Women	Children	Total	Increase (+) or decrease (–) over preceding year
1988	65104	60387	–	146947	–
1989	70391	62516	–	–	+ (11630)
1990	–	63143	20314	153922	–
1991	69395	–	21560	–	–(5337)
1992	71274	65935	23789	160998	–

142. The number of children in 1988 is

(A) 31236 (B) 125491
(C) 14546 (D) 21456

143. The total population in 1989 is

(A) 144537 (B) 158577
(C) 146947 (D) 149637

144. Number of children in 1989 is

(A) 25670 (B) 14040
(C) 13970 (D) 15702

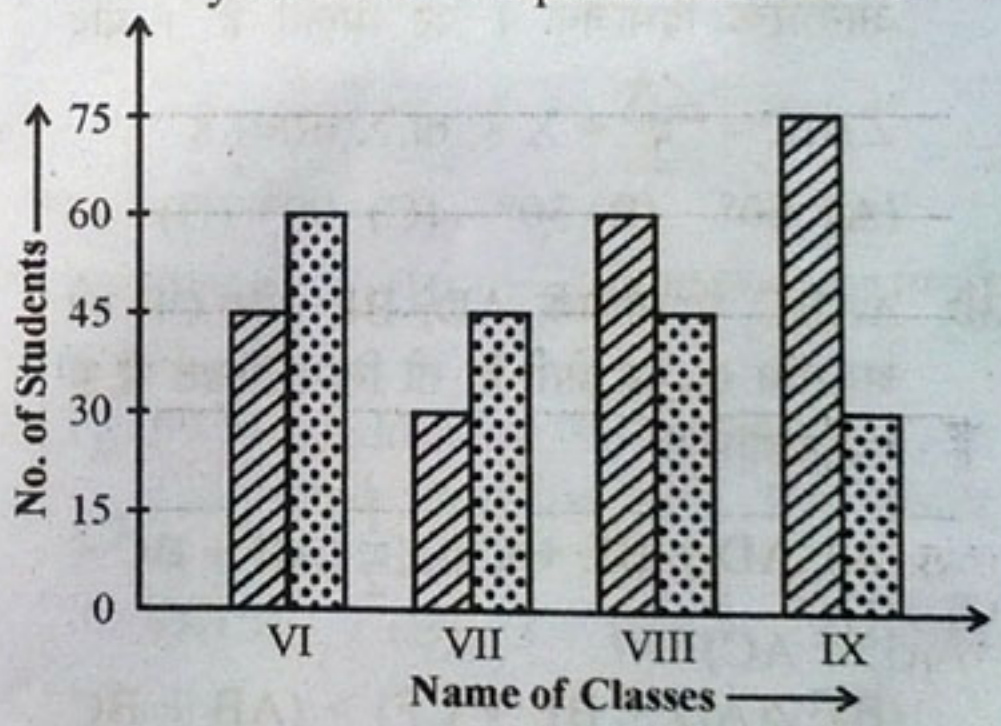
145. Number of women in 1991 is

(A) 57630 (B) 56740
(C) 52297 (D) 62957

Directions : Study the double bar graph given below and answer question Nos. **146** to **150** :

▨ : No. of students participating in the school exhibition in the year 2013 of a particular school.

▩ : No. of students participating in the cultural events of school in the year 2013 of a particular school.



146. The class having maximum numbers of participants in exhibition is

(A) Class IX (B) Class VIII
(C) Class VII (D) Class VI

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147. The average of the number of students participating in cultural events is
(A) 48.75 (B) 52.5 (C) 45 (D) 50

148. The average of the number of students participating in exhibition is
(A) 48.75 (B) 52.5 (C) 45 (D) 50

149. The ratio of the participants in exhibition of class IX with the total participants of class IX is
(A) 5 : 7 (B) 5 : 14
(C) 1 : 4 (D) 3 : 5

150. The percentage of students of class VIII participating in cultural event out of total participants of cultural event is
(A) 30% (B) 25% (C) 35% (D) 40%

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142. If $a + \frac{1}{a} = 2$, then the value of $\frac{5a^2 + 5}{3a^2 + 9a + 3}$ is
(A) $\frac{2}{3}$ (B) 0 (C) $\frac{1}{3}$ (D) 1

143. If $(5x - 1)(px + 1)$ and $3p(3x - 1)$ are equal when $x = 1$, then the value of p is
(A) 2 (B) –1 (C) 0 (D) 1

144. If the sum of all internal angles and sum of all external angles of a regular polygon are equal, then the number of sides of the polygon is
(A) 7 (B) 6 (C) 5 (D) 4

145. The value of $\cos^2 20° + \cos^2 70°$ is
(A) 1 (B) 0 (C) 2 (D) 3

146. The value of $\frac{2 \tan 30°}{1 - \tan^2 30°}$
(A) $\frac{1}{\sqrt{3}}$ (B) $\frac{2}{\sqrt{3}}$
(C) $2\sqrt{3}$ (D) $\sqrt{3}$

147. What is the simplest value of $\frac{\sqrt{.0121} \times \sqrt{.0225}}{\sqrt{.09}}$?
(A) 0.50 (B) 0.55
(C) 0.055 (D) 0.05

148. Two numbers are in the ratio of 5 : 8. If 12 be added to each, then they are in the ratio of 3 : 4. The value of the first number is
(A) 20 (B) 15 (C) 10 (D) 5

149. A sum is invested at compound interest payable annually. The interest in two successive years was ₹ 900 and ₹ 981. Find the sum.
(A) ₹ 9,000 (B) ₹ 9,100
(C) ₹ 9,900 (D) ₹ 10,000

150. Mr. X was given an increment of 25% on his salary. His new salary is ₹ 6,525. What was his salary before increment ?
(A) ₹ 5,200 (B) ₹ 5,000
(C) ₹ 5,002 (D) ₹ 5,220

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Part – IV
GENERAL AWARENESS

151. How many judges are there in Supreme Court ?
(A) 25 (B) 26
(C) 30 (D) 31

152. During the reign of Bindusara there was unrest at _____.
(A) Ujjayani
(B) Pushkalavati
(C) Takshasila
(D) Rajagriha

153. The Crimean War in 1854-1856 was fought between _____.
(A) Russia and Turkey
(B) USA and England
(C) Russia and Japan
(D) England and France

154. The "Last Supper" a famous Renaissance Painting was a master piece of _____.
(A) Michael Angelo
(B) Titian
(C) Leonardo da Vinci
(D) Raphael

155. Varahamihira was
(A) An Astronaut
(B) A Space Shuttle
(C) A power Station
(D) An Ancient Astronomer

156. Talking to one's own self
(A) Sinecure
(B) Soliloquy
(C) Pessimist
(D) Philanthropist

157. Rift Valley is formed
(A) between two anticlines
(B) between two faults
(C) erosion of synclinal basin
(D) due to volcanic eruption

158. Lake formed by Aswan Dam in Africa
(A) Chad (B) Victoria
(C) Nassar (D) Tanganyika

159. The word 'insolation' means
(A) matters which insulates
(B) incoming solar radiation
(C) insoluble matters
(D) none of the above

160. 'Terra rossa' is a Latin word which means
(A) hot area
(B) red terrain
(C) lateritic region
(D) region near to the poles

161. Widening of a river valley takes place due to
(A) Corrosion
(B) Lateral erosion
(C) Corrasion
(D) Hydraulic action

162. Resin is a product of
(A) Grapes
(B) Coniferous trees
(C) Rubber tree
(D) Banyan tree

163. Water of coconut is
(A) liquid nucellus
(B) liquid mesocarp
(C) liquid endocarp
(D) degenerated liquid endosperm

164. Bulbils takes part in
(A) Sexual reproduction
(B) Vegetative reproduction
(C) Food storage
(D) Respiration

165. Fish is a first class protein as it contains
(A) essential amino-acids
(B) non-essential amino acids
(C) all essential fatty acids
(D) no amino acid

166. Stem is usually
(A) Positively phototropic
(B) Negatively phototropic
(C) Negatively geotropic
(D) Positively acrotropic

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167. Bacterial cells do not have
(A) Cell wall
(B) Plasma membrane
(C) Ribosome
(D) Mitochondria

168. A wire of resistance R is cut into 'n' equal parts. These parts are then connected in parallel. The equivalent resistance of the combination will be
(A) nR (B) $\frac{R}{n}$
(C) $\frac{n}{R}$ (D) $\frac{R}{n^2}$

169. A bullet hits and gets embedded in a solid block resting on a horizontal frictionless table. Which physical quantity is conserved in this process ?
(A) Momentum and kinetic energy
(B) Momentum alone
(C) Kinetic energy alone
(D) Neither momentum nor kinetic energy

170. An instrument used to measure the density of milk is
(A) Glactometer (B) Lactometer
(C) Calciometer (D) Polarimeter

171. While ascending a hill, the driver of the vehicle keeps the gear ratio
(A) equal to 1
(B) less than 1
(C) greater than 1
(D) either equal to or greater than 1

172. The process of combining strings is known as
(A) Compiling
(B) Combining
(C) Attaching
(D) Concatenation

173. Which component is mainly responsible for doing calculations in computer ?
(A) Random access memory
(B) Control unit
(C) Arithmetic logic unit
(D) Hard disk

174. The inert gas used as beacon light is
(A) Kr (B) Ar
(C) He (D) Ne

175. The chemical name of baking soda is
(A) Sodium carbonate
(B) Sodium bicarbonate
(C) Sodium chloride
(D) Sodium nitrate

176. Chemical formula of washing soda is
(A) $Na_2SO_4.10H_2O$
(B) $NaHCO_3$
(C) $Na_2CO_3.10H_2O$
(D) $Ca(OH)_2$

177. Hydrochloric acid is also known as
(A) Galic acid (B) Picric acid
(C) Muriatic acid (D) Chloric acid

178. Kanchenzunga National Park is located at
(A) Uttar Pradesh
(B) West Bengal
(C) Sikkim
(D) Jammu and Kashmir

179. Biosphere Reserve of India Nanda Devi (UNESCO) is located in the State of
(A) Uttarakhand
(B) Sikkim
(C) Meghalaya
(D) Himachal Pradesh

180. Environment related important International Agreement/Conference – Convention on Biological Diversity took place in 2012 at
(A) Montreal (B) Hyderabad
(C) Vienna (D) Rotterdam

181. In a desert region, soil erosion can be checked by
(A) Contour ploughing
(B) Using farm manure
(C) Tree plantation/Afforestation
(D) Crop rotation

182. The first oil refinery in India was set up at
(A) Barauni
(B) Vishakhapatnam
(C) Digboi
(D) Mumbai

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183. "Mumbai High" is associated with
(A) Steel (B) Petroleum
(C) Mausoleum (D) Jute

184. India switched over to the decimal currency system in
(A) 1955 (B) 1956
(C) 1957 (D) 1958

185. As an export item of India, which spice occupies the top position in value ?
(A) Pepper (B) Chillies
(C) Turmeric (D) Cardamom

186. The fourteen major banks in India were nationalized in the year
(A) 1967 (B) 1968
(C) 1969 (D) 1971

187. One rupee notes are issued by the
(A) Reserve Bank of India
(B) State Bank of India
(C) President of India
(D) Government of India

188. The name of the train "Shatabdi Express" refers to the centenary of
(A) Mahatma Gandhi
(B) Indian National Congress
(C) India's War of Independence
(D) Jawaharlal Nehru

189. Which one of the following is not a rabi crop ?
(A) Mustard (B) Rice
(C) Wheat (D) Gram

190. Kolkata and Delhi are connected by
(A) N.H. No. 1 (B) N.H. No. 2
(C) N.H. No. 9 (D) N.H. No. 6

191. The driest part of India is
(A) Western Rajasthan
(B) Jammu and Kashmir
(C) Gujarat
(D) Madhya Pradesh

192. Small farmers in the country have been defined as those farmers having land holdings of
(A) below one hectare
(B) one to two hectare
(C) two to three hectare
(D) three to four hectare

193. The number of Nationalized Banks in India are
(A) 14 (B) 21
(C) 20 (D) 22

194. Which one of the following goods has only exchange value ?
(A) Diamond (B) Television
(C) Computer (D) Rice

195. How much of India's total geographical area is forest land ?
(A) 20% (B) 23%
(C) 26% (D) 28%

196. The Second Plan gave priority to
(A) Agriculture
(B) Services
(C) Heavy Industries
(D) Foreign Trade

197. The power to decide an Election Petition for the State is vested in the
(A) Parliament
(B) Supreme Court
(C) High Courts
(D) Election Commission

198. How many items are there in the Union List ?
(A) 52 (B) 66
(C) 97 (D) 99

199. What is the maximum gap permissible between two sessions of Parliament ?
(A) One month
(B) Three months
(C) Six months
(D) Twelve months

200. When were the Fundamental Duties incorporated in the Constitution ?
(A) 1975 (B) 1976
(C) 1977 (D) 1979

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MANNER IN WHICH ANSWERS ARE TO BE GIVEN

उत्तर देने की विधि

Directions : Each question or incomplete statement is followed by four alternative suggested answers or completions. In each case, you are required to select the one that correctly answers the question or completes the statement and blacken [●] appropriate oval A, B, C or D by **Black/Blue Ball Point Pen** against the question concerned in the Answer-Sheet.

(For V.H. / Cerebral palsy candidates corresponding oval will be blackened by the scribe.)

The following example illustrates the manner in which the questions are required to be answered.

Example :

Question No. 'Q' –

Out of the four words given below, three are alike in some way and one is different. Find the **ODD** word :

(A) Girl
(B) Boy
(C) Woman
(D) Chair

Explanation **:** In the above example, the correct answer is 'Chair' and this answer has been suggested at 'D'. Accordingly, the answer is to be indicated by blackening [●] the oval by Black/ Blue Ball Point Pen in column 'D' against Question No. 'Q' in the manner indicated below :

Question No. 'Q'

[A] [B] [C] [●]

There is only one correct answer to each question. You should blacken [●] the oval of the appropriate column, viz., A, B, C or D. If you blacken [●] more than one oval against any one question, the answer will be treated as wrong. If you wish to cancel any answer, you should **completely erase** that black mark in the oval in the Answer-Sheet and then blacken the oval of revised response.

You are **NOT** required to mark your answers in this Booklet. All answers must be indicated in the Answer-Sheet only.

निर्देश : प्रत्येक प्रश्न अथवा प्रत्येक अधूरे कथन के बाद चार उत्तर अथवा पूरक कथन सुझाए गए हैं । प्रत्येक दशा में आपको किसी एक को चुनना है जो प्रश्न का सही उत्तर दे अथवा कथन को पूरा करे और आपको उत्तर-पत्रिका में उपयुक्त अण्डाकार खाने A, B, C या D को **काले/नीले बॉल-पॉइन्ट पेन** से काला [●] करना है ।

(दृष्टिबाधित / सेरिब्रल पाल्सी उम्मीदवारों के लिए संगत अण्डाकार लिपिक द्वारा काला किया जाए ।)

नीचे दिए गए उदाहरण से स्पष्ट हो जाएगा कि उत्तर किस प्रकार दिए जाने हैं ।

उदाहरण :

प्रश्न सं. 'क्यू'

नीचे दिए हुए चार शब्दों में तीन कुछ मिलते-जुलते हैं तथा एक कुछ अलग किस्म का है । वह **अलग किस्म** का शब्द बताएँ :

(A) लड़की
(B) लड़का
(C) महिला
(D) कुर्सी

स्पष्टीकरण : ऊपर के उदाहरण में सही उत्तर 'कुर्सी' है और यह उत्तर 'D' में सुझाया गया है । अत: प्रश्न सं. 'क्यू' के सामने कॉलम 'D' के अण्डाकार खाने को काले/नीले बॉल-पॉइन्ट पेन से पूर्णतया काला [●] करके उत्तर नीचे बताई विधि के अनुसार दिया जाना है :

प्रश्न सं. 'क्यू'

[A] [B] [C] [●]

प्रत्येक प्रश्न का केवल एक ही सही उत्तर है । आपको समुचित कॉलम अर्थात् A, B, C या D के अण्डाकार खाने को काला [●] करना है । यदि आप किसी प्रश्न के सामने एक से अधिक अण्डाकार खाने को भरेंगे [●] तो आपका उत्तर ग़लत माना जाएगा । यदि आप किसी उत्तर को रद्द करना चाहते हैं तो आप उत्तर-पत्रिका के उस अण्डाकार खाने से काले निशान को **पूरी तरह से मिटा दें** और तब बदले हुए उत्तर के लिए अण्डाकार खाने को काला कर दें ।

इस पुस्तिका के अन्दर आपको उत्तर अंकित **नहीं** करने हैं । सभी उत्तर केवल उत्तर-पत्रिका में ही दें ।

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