

## PART - A

## GENERAL INTELLIGENCE &amp; REASONING

Direction: In questions no. 1 to 6, select the related word/letters/number from the given alternatives.

1. UMPRE : GAME :: ?  
 (A) Legislator : election  
 (B) Moderator : debate  
 (C) Prodigy : wonder  
 (D) Chef : banquet
2. HCM : FAK :: SGD : ?  
 (A) ESQ (B) GES (C) QES (D) QIS
3. FILM : ADGH :: MILK : ?  
 (A) HDGE (B) HDGF  
 (C) HEGF (D) ADFG
4. A HOP : CKSU :: B J M F :: ?  
 (A) DQKM (B) C J W M  
 (C) E Z U Q (D) DMQK
5. 583 : 488 :: 292 : ?  
 (A) 378 (B) 487 (C) 381 (D) 291
6. 25 : 625 :: 35 : ?  
 (A) 875 (B) 635 (C) 1575 (D) 1205
7. Arrange the following words in per order in the dictionary:  
 (i) Ambitious (ii) Ambiguous  
 (iii) Ambiguity (iv) Animation  
 (v) Anima's  
 (A) (iii), (ii), (i), (v), (iv)  
 (B) (ii), (i), (iv), (v), (i)  
 (C) (iii), (i), (iv), (i), (v)  
 (D) (ii), (i), (v), (iv), (i)

Direction: In questions no. 8 to 11, find the odd word/number/letters/number pair from the given alternatives.

8. (A) 240 (B) 304 (C) 272 (D) 210
9. (A) Silver (B) Platinum  
 (C) Zinc (D) Bronze
10. (A) MTF (B) SLB (C) RKO (D) UNG
11. (A) CENT (B) JUCS  
 (C) MCKV (D) CZHL
12. Which one of the given responses would be a meaningful order of the following:  
 (i) Papa (ii) Larva  
 (iii) Molt (iv) Eggs  
 (A) (iv), (ii), (i), (i) (B) (i), (ii), (i), (ii)  
 (C) (iv), (i), (i), (ii) (D) (iv), (i), (ii), (ii)

13. Which one of the given responses would be a meaningful order of the following continents in ascending order of area?  
 (i) South America (ii) Africa  
 (iii) Europe (iv) Australia  
 (v) North America  
 (A) (ii), (v), (i), (iv), (iii)  
 (B) (ii), (i), (v), (iv), (iii)  
 (C) (ii), (i), (v), (iii), (iv)  
 (D) (ii), (iv), (i), (iii), (iv)

Direction: In questions no. 14 to 21, a series is given with one term missing. Choose the correct alternative from the given ones.

14. 17, 43, 81, 131, \_\_, ?  
 (A) 300 (B) 195 (C) 375 (D) 468
15. X, O, K, S, \_\_, ?  
 (A) C (B) D (C) E (D) B
16. 
$$\begin{array}{ccc} 6 & 15 & 20 \\ 8 & 4 & 5 \\ 3 & 5 & 20 \\ \hline 51 & 65 & ? \end{array}$$
 (A) 120 (B) 51 (C) 12 (D) 56
17. 

16	25	9
36	64	81
10	15	?

 (A) 12 (B) 12 (C) 14 (D) 11
18. 5, 11, 23, 47, 95, \_\_\_\_  
 (A) 161 (B) 169 (C) 190 (D) 191
19. BEAG, IXCI, FIEK, \_\_\_\_  
 (A) FCG (B) FKL  
 (C) IJME (D) HKGM
20. 2, 29, 38, 47, \_\_, ?  
 (A) 52 (B) 58 (C) 59 (D) 56
21. 

2	9	11	7
8	5	13	-3
7	?	10	(-4)
6	4	10	?

 (A) 3 and 2 (B) (-3) and 2  
 (C) 5 and (-2) (D) (-3) and (-2)

SPACE FOR ROUGH WORK

22. A man travels 4 km due north, then travels 6 km due east and further travels 4 km due north. How far he is from the starting point?  
 (A) 8 km (B) 10 km  
 (C) 6 km (D) 14 km
23. If MUSICAL is written as KWQKACJ, how can SPRINKLE be written?  
 (A) QRPKLMJG (B) URTKPMNG  
 (C) QRBKCNJG (D) QNPGLJJC
24. Ram and Sam start walking towards North and cover 20 metres. Ram turns to his left and Sam to his right. After sometime, Ram walks 10 metres, in the same direction in which he turned. On the other hand, Sam walks only 7 metres. Later, Ram turns towards his left and Sam to his right. Both walk 25 metres forward. How far is Ram from Sam now?  
 (A) 17 metres (B) 5 metres  
 (C) 10 metres (D) 20 metres
25. N is more intelligent than M. M is not as intelligent as Y. X is more intelligent than Y but not as good as N. Who is the most intelligent of all?  
 (A) M (B) Y (C) N (D) X
- Direction :** In questions no. 26 and 27, from the given alternatives select the word which cannot be formed using the letters of the given word.
26. COURAGEOUS  
 (A) COURSE (B) GRACE  
 (C) SECURE (D) ARGUE
27. SPECIFICATION  
 (A) FAINTING (B) TONIC  
 (C) PACIFIC (D) FACTION
28. If MEAT is written as TEAM, then BALE is written as :  
 (A) EBLA (B) EALB  
 (C) ELAB (D) EABL
29. If 'P' means '+', 'Q' means '×', 'R' means '÷' and 'S' means '-', then:  
 $44 Q 9 R 12 S 6 Q 4 P 16 = ?$   
 (A) 25 (B) 112 (C) 36 (D) 124
30. There are 19 hockey players in a club. On a particular day, 14 were wearing the hockey shirts prescribed. None of them were without either hockey pants or shirts. Eleven were wearing the prescribed hockey pants. How many were in complete uniform?  
 (A) 6 (B) 9 (C) 7 (D) 8
31. If  $-$  stands for addition,  $\times$  for multiplication,  $\div$  for subtraction, and  $+$  for division, then which of the following is correct?  
 (A)  $25 - 15 + 5 + 4 \times 16 = 21$   
 (B)  $25 + 11 - 4 \div 10 \times 6 = 20$   
 (C)  $25 \times 12 - 14 \div 4 + 6 = 16$   
 (D)  $25 + 12 + 14 \div 2 \times 4 = 15$
32. A direction pole was situated on the Road Crossing. Due to an accident, the pole turned in such a manner that the pointer which was showing East, started showing South. Sita, a traveller went to the wrong direction thinking it to be West. In what direction actually she was travelling?  
 (A) East (B) South  
 (C) North (D) West
33. Ram cycled 10 km southward from his home turned right and cycled 6 km, turned right cycled 10 km, turned left and cycled 15 km. How many km will he have cycled to reach straight home?  
 (A) 16 km (B) 20 km  
 (C) 10 km (D) 21 km
34. Which of the following interchange of signs would make the given equation correct?  
 $5 + 3 \times 8 - 12 \div 4 = 3$   
 (A)  $-$  and  $\div$  (B)  $+$  and  $\times$   
 (C)  $+$  and  $+$  (D)  $+$  and  $-$
35. Which of the following interchange of sign would make the given equation correct?  
 $(20 - 4) \times 4 + 16 = 36$   
 (A)  $+$  and  $-$  (B) 5 and 5  
 (C) 16 and 6 (D)  $\div$  and  $+$
36. If WATER is written as YCVGT, then what is written as HKTG?  
 (A) REFI (B) ERIF (C) IRFE (D) FIRE

SPACE FOR ROUGH WORK

**Direction:** In questions no. 37 and 38, two statements are given followed by two conclusions I and II. You have to consider the 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.

37. **Statement I:** Some keys are locks, some locks are numbers.

**Statement II:** All numbers are letters, all letters are words.

**Conclusion I:** Some words are numbers.

**Conclusion II:** Some locks are letters.

- (A) Conclusion I follows  
 (B) Conclusion II follows  
 (C) Conclusion I and II follows  
 (D) None of the conclusion follows

38. **Statement I:** The constitution assures the fundamental rights.

**Statement II:** Parliament has right to amend the constitution.

**Conclusion I:** Parliament included fundamental rights in the constitution

**Conclusion II:** Parliament did not assure the fundamental rights.

- (A) Only conclusion I follows  
 (B) Only conclusion II follows  
 (C) Both conclusions I and II follows  
 (D) None of them

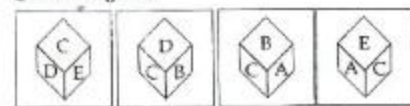
39. A cube which is painted red on the outer surface is of 2 inches height, 2 inches wide and 2 inches across. If it is cut into one-inch cubes as shown by dotted lines, indicate the number of cubes which are red on two sides?



- (A) 4 (B) 6 (C) 8 (D) 0

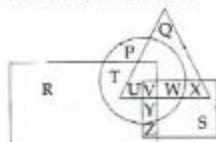
40. Four position of dice are given below. Which letter will be opposite to D?

**Question figures:**



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

41. In the given figure, Circle represents persons having Car, triangle represents persons having Motor Cycle, square represents persons having Autorickshaw, rectangle represents persons having Cycle. Find the region where persons having Car, Motor Cycle, Cycle but not Autorickshaw.



- (A) V (B) W (C) X (D) U

42. Identify the response figure in which the figure given are found.

**Question figure:**

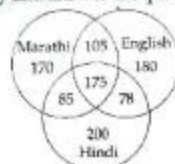


**Answer figures:**



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

**Direction:** In questions no. 43 and 44, study the following diagram carefully and answer the questions based on it.



43. The diagram shows the survey on a sample of 1000 persons with reference to their knowledge of English, Hindi and Marathi. How many know all the languages?

- (A) 105 (B) 85 (C) 78 (D) 175

44. The diagram shows the survey on a sample of 1000 persons with reference to their knowledge of English, Hindi and Marathi. 105 people know \_\_\_\_\_ languages.

- (A) Marathi, English  
 (B) Hindi, Marathi, English  
 (C) Marathi, Hindi  
 (D) English, Hindi

SPACE FOR ROUGH WORK

**Direction:** In questions no. 45 and 46, which answer figure will complete the pattern in the question figure?

45. Question figure:



Answer figures:

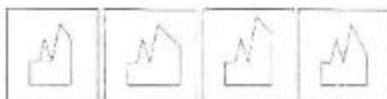


(A) (B) (C) (D)

46. Question figure:



Answer figures:



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

47. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

Question figures:



Answer figures:



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

48. 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. 'N' can be represented by 02, 24, etc. and 'Q' can be represented by 56, 78 etc. Similarly, you have to identify the set for the word 'SPORTS':

Matrix - I					Matrix - II					
	0	1	2	3	4	5	6	7	8	9
0	L	M	N	O	K	S	T	Q	R	P
1	N	M	K	L	O	S	Q	P	R	T
2	L	K	M	O	N	P	R	T	Q	S
3	N	O	K	M	L	S	R	P	Q	T
4	O	M	K	L	N	P	Q	R	S	T

(A) 67, 55, 31, 57, 69, 87

(B) 58, 77, 20, 85, 79, 97

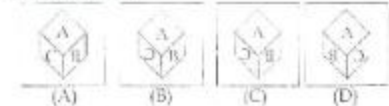
(C) 24, 66, 40, 85, 89, 58

(D) 87, 20, 23, 85, 75, 67

49. If a mirror is placed on the line XY then which of the answer figures is the right image of the given figure?



Answer figures:



50. From the given answer figures, select the one in which the question figure is hidden/embedded.

Question figure:



Answer figures:



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

SPACE FOR ROUGH WORK

## PART - B

## GENERAL AWARENESS

51. Indira Gandhi Prize for Peace, Disarmament and Development - 2012 was awarded to :  
 (A) Sunita Williams  
 (B) Chanda Kochhar  
 (C) Ellen Johnson Sirleaf  
 (D) Tereza Fajksova
52. In dicots the pollen-grains possess :  
 (A) two germ pores (B) three germ pores  
 (C) four germ pores (D) one germ pore
53. Acceptable "Noise Pollution Level" in India range between :  
 (A) 16 - 35 dec (B) 40 - 45 dec  
 (C) 70 - 100 dec (D) 10 - 15 dec
54. Externality theory is the basic theory of the following branch of Economics :  
 (A) Environomics  
 (B) Fiscal Economics  
 (C) International Economics  
 (D) Macro Economics
55. Multi-purpose river valley projects are the "New temples of modern India".  
 The above statement is made by :  
 (A) Motilal Nehru  
 (B) Mahatma Gandhi  
 (C) Rajiv Gandhi  
 (D) Jawaharlal Nehru
56. What type of information system would be recognised by digital circuits ?  
 (A) Binary system  
 (B) Both hexadecimal and binary system  
 (C) Only Roman system  
 (D) Hexadecimal system
57. Who was **not** a politician ?  
 (A) L.K. Gujral  
 (B) S.L. Bahuguna  
 (C) J. Jayalalitha  
 (D) H.N. Bahuguna
58. Who gave the title of "Mahamana" to Madan Mohan Malviya ?  
 (A) Dada Bhai Naurozi  
 (B) Gopal Krishna Gokhale  
 (C) Mahatma Gandhi  
 (D) Bal Gangadhar Tilak
59. First Hindu-American to enter in the US House of Representative as senator is :  
 (A) Sunita Williams  
 (B) Jyoti Sengupta  
 (C) Ami Bera  
 (D) Tulsi Gabbard
60. Pick out the correct match :  
 (A) Fleshy foods - Calcium and Protein  
 (B) Fish - Starch and Vitamin  
 (C) Milk - Fibre and Minerals  
 (D) Egg yolk - Protein and Fat
61. Who was the Viceroy at the time of Quit India Movement ?  
 (A) Lord Mountbatten (B) Lord Wavell  
 (C) Lord Lin Lithgow (D) Lord Irwin
62. Expand the term IPCC :  
 (A) International Panel of Climate Control  
 (B) Interim Panel of Climate Change  
 (C) Intergovernmental Panel on Climate Change  
 (D) International Pollution Control Council
63. Who described the Government of India Act, 1935 as a new charter of bondage ?  
 (A) Mahatma Gandhi  
 (B) Rajendra Prasad  
 (C) Pt. Jawaharlal Nehru  
 (D) B.R. Ambedkar
64. Endosulfan spray on cashew crop resulted in the pollution to the tune of tragedy in :  
 (A) Kerala (B) Andhra Pradesh  
 (C) Karnataka (D) Tamil Nadu
65. "Functional Finance" is associated with :  
 (A) Adolph Wogner (B) Adam Smith  
 (C) Adams (D) Abba 'P' Lerner
66. 'Farad' is the unit of :  
 (A) Capacitance (B) Inductance  
 (C) Resistance (D) Conductance
67. Which of the following is an impact printer ?  
 (A) Ink-jet printer  
 (B) Bubble-jet printer  
 (C) Laser printer  
 (D) Daisy wheel printer



68. The percentage of nitrogen present in ammonium sulphate is :  
 (A) 21% (B) 25%  
 (C) 30.5% (D) 18%
69. Identify the odd term amongst the following group :  
 (A) Optical fibre  
 (B) Twisted pair wire  
 (C) Microwaves  
 (D) Coaxial cable
70. Who was the other Congress leader who joined with Motilal Nehru to start the Swaraj Party in 1923 ?  
 (A) B.G. Tilak (B) Chittaranjan Das  
 (C) M.K. Gandhi (D) G.K. Gokhale
71. In which part of the Indian Constitution, the fundamental duties are enshrined ?  
 (A) IV A (B) IV B (C) V (D) IV
72. Who of the following enjoys the rank of Cabinet Minister in Union Cabinet ?  
 (A) Judge of Supreme Court  
 (B) Secretary to Government of India  
 (C) Political Advisor to PM  
 (D) Deputy Chairman of Planning Commission
73. India and Japan inked two agreements during November 2012 to enable Tokyo to import from India :  
 (A) Rare earth minerals  
 (B) Basmati type rice  
 (C) Rubber based products  
 (D) Leather goods
74. Aung San Suu Kyi is a native to :  
 (A) China  
 (B) Myanmar  
 (C) Arunachal Pradesh  
 (D) Tibet
75. DPT vaccine is administered to prevent diseases like :  
 (A) Diphtheria, Pertussis and Tetanus  
 (B) Dengue, Pertussis and Typhoid  
 (C) Dengue, Polio and Tetanus  
 (D) Diphtheria, Pertussis and Typhoid
76. The WISE Prize-2012, also known as the "Nobel Prize for Education" was conferred by the WISE Summit in Doha on :  
 (A) Dr. Madhav Chavan  
 (B) Dr. Yash Pal  
 (C) Dr. M.S. Swaminathan  
 (D) Dr. APJ Abdul Kalam
77. Diamonds are priced higher than water because :  
 (A) they are sold by selected firms with monopolistic powers.  
 (B) their marginal utility to buyers is higher than that of water.  
 (C) their total utility to buyers is higher than that of water.  
 (D) consumers do not buy them at lower prices.
78. Ethanol containing 5% water is known as :  
 (A) Dilute alcohol  
 (B) Power alcohol  
 (C) Rectified spirit  
 (D) Absolute alcohol
79. Of the following land uses, which is restricted to Special Economic Zones ?  
 (A) Educational Institutions  
 (B) Free trade Centres  
 (C) Marketing Centres  
 (D) Information Technology Companies
80. The eastward continuation of the Brazil current is called :  
 (A) South Atlantic drift  
 (B) Counter Equatorial drift  
 (C) West Atlantic drift  
 (D) North Atlantic drift
81. The most powerful woman in business in India as rated by the "Fortune" for the year 2012 is :  
 (A) Prabha Parameswaran  
 (B) Debjani Ghosh  
 (C) Anjali Bansal  
 (D) Chanda Kochhar
82. Communication satellites are used to :  
 (A) receive communication signal only  
 (B) receive and redirect communication signal  
 (C) provide information of natural resources only  
 (D) transmit communication signal only

83. What is the first sermon of Buddha called as ?  
 (A) Brahmajalasutta  
 (B) Dharmachakkapabattanasutta  
 (C) Kachchayanagottasutta  
 (D) Mahaparinirvansutta
84. Where are the Todas found ?  
 (A) Tamil Nadu  
 (B) Rajasthan  
 (C) Arunachal Pradesh  
 (D) Madhya Pradesh
85. The "One Straw Revolution" was written by :  
 (A) Richard Carlson  
 (B) M.S. Swaminathan  
 (C) Norman Borlaug  
 (D) Masanobu Fukuoka
86. Who wrote the book "Why Socialism" ?  
 (A) Mahatma Gandhi  
 (B) Acharya Narendra Dev  
 (C) M.N. Roy  
 (D) Jayaprakash Narayan
87. Hypothermia occurs due to loss of excessive heat from body due to sudden low body temperature in :  
 (A) Frogs (B) Human beings  
 (C) Lizards (D) Snakes
88. The disease that has been eradicated from the world is :  
 (A) Leprosy (B) Poliomyelitis  
 (C) Chicken pox (D) Small pox
89. The vacancy of the office of the President must be filled within :  
 (A) 6 months (B) 12 months  
 (C) 1 month (D) 3 months
90. Non Resident Indians (NRI) Day is marked on :  
 (A) January 9 (B) January 17  
 (C) January 19 (D) January 7
91. Blood is a :  
 (A) connective tissue  
 (B) epithelial tissue  
 (C) muscular tissue  
 (D) reproductive tissue
92. The natural disaster in which carbon-di-oxide suddenly erupts from a deep lake water is known as \_\_\_\_\_ .  
 (A) Lacustrine (B) Fluvial  
 (C) Glacial (D) Liminic
93. Steel is more elastic than rubber because it :  
 (A) requires larger deforming force  
 (B) is never deformed  
 (C) is deformed very easily  
 (D) is harder than rubber
94. The hormone used as an oral contraceptive is :  
 (A) Cortisone (B) Progesterone  
 (C) Testosterone (D) Aldosterone
95. Transboundary pollution (or) Acid rain is caused by :  
 (A) Carbon monoxide  
 (B) Carbon dioxide  
 (C) Hydrocarbon  
 (D) Nitrogen oxide and sulphur dioxide
96. Stains of rust on clothes can be removed by :  
 (A) Oxalic acid (B) Petrol  
 (C) Alcohol (D)  $H_2O_2$
97. From which of the following banks did Madan Mohan Malaviya take loans for financing "The Hindustan Times" ?  
 (A) Punjab National Bank  
 (B) Bank of Maharashtra  
 (C) Bank of Baroda  
 (D) State Bank of India
98. Which of the following is an endemic species ?  
 (A) Horn bill (B) Indian Rhino  
 (C) Pink head duck (D) Nicobar pigeon
99. Blood group was discovered by :  
 (A) William Harvey  
 (B) Landsteiner  
 (C) Pavlov  
 (D) Alexander Fleming
100. "Whether I earned your vote or not, I have listened to you, I have learned from you. You have made me a better President", as said by :  
 (A) Barack Obama  
 (B) George Bush  
 (C) APJ Abdul Kalam  
 (D) Pranab Mukherjee

**PART - C**  
**QUANTITATIVE APTITUDE**

101. A person distributes his pens among four friends A, B, C, D in the ratio  $\frac{1}{3} : \frac{1}{4} : \frac{1}{5} : \frac{1}{6}$ . What is the minimum number of pens that the person should have?  
(A) 57 (B) 65 (C) 75 (D) 45
102. If  $x \neq 0, y \neq 0$  and  $z \neq 0$  and  $\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2} = \frac{1}{xy} + \frac{1}{yz} + \frac{1}{zx}$ , then the relation among  $x, y, z$  is:  
(A)  $x + y + z = 0$  (B)  $x + y = z$   
(C)  $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 0$  (D)  $x = y = z$
103. If  $a \sin \theta + b \cos \theta = c$  then the value of  $a \cos \theta - b \sin \theta$  is:  
(A)  $\pm \sqrt{-a^2 + b^2 + c^2}$   
(B)  $\pm \sqrt{a^2 + b^2 - c^2}$   
(C)  $\pm \sqrt{a^2 - b^2 - c^2}$   
(D)  $\pm \sqrt{a^2 - b^2 + c^2}$
104. If  $x = a \sec \theta \cos \phi, y = b \sec \theta \sin \phi, z = c \tan \theta$ , then the value of  $\frac{x^2}{a^2} + \frac{y^2}{b^2} - \frac{z^2}{c^2}$  is:  
(A) 1 (B) 4 (C) 9 (D) 0
105. Mohan gets 3 marks for each correct sum and loses 2 marks for each wrong sum. He attempts 30 sums and obtains 40 marks. The number of sums solved correctly is:  
(A) 15 (B) 20 (C) 25 (D) 10
106. If  $\frac{\sec \theta + \tan \theta}{\sec \theta - \tan \theta} = \frac{5}{3}$ , then  $\sin \theta$  is equal to:  
(A)  $\frac{1}{4}$  (B)  $\frac{1}{3}$  (C)  $\frac{2}{3}$  (D)  $\frac{3}{4}$
107. The marked price of a watch was ₹ 720. A man bought the same for ₹ 550.80 after getting 2 successive discounts, the 1<sup>st</sup> being 10%. What was the 2<sup>nd</sup> discount?  
(A) 14% (B) 15% (C) 18% (D) 12%
108. Two pipes, P and Q can fill a cistern in 12 and 15 minutes respectively. If both are opened together and at the end of 3 minutes, the first is closed, how much longer will the cistern take to fill?  
(A) 5 minutes (B)  $8\frac{1}{2}$  minutes  
(C)  $8\frac{1}{4}$  minutes (D)  $8\frac{3}{4}$  minutes
109. The average age of 14 girls and their teacher's age is 15 years. If the teacher's age is excluded, the average reduces by 1. What is the teacher's age?  
(A) 32 years (B) 30 years  
(C) 29 years (D) 35 years
110. The square root of  $33 - 4\sqrt{35}$  is:  
(A)  $\pm(2\sqrt{7} + \sqrt{5})$  (B)  $\pm(\sqrt{7} + 2\sqrt{5})$   
(C)  $\pm(\sqrt{7} - 2\sqrt{5})$  (D)  $\pm(2\sqrt{7} - \sqrt{5})$
111. The cost of manufacture of an article was ₹ 900. The trader wants to gain 25% after giving a discount of 10%. The marked price should be:  
(A) ₹ 1250 (B) ₹ 1200  
(C) ₹ 1000 (D) ₹ 1500
112. Three sides of a triangular field are of length 15 m, 20 m and 25 m long respectively. Find the cost of sowing seeds in the field at the rate of 5 rupees per sq. m.  
(A) 300 (B) 600 (C) 750 (D) 150
113. If  $a^2 + 1 = a$ , then the value of  $a^{12} + a^6 + 1$  is:  
(A) -3 (B) 1 (C) 2 (D) 3

SPACE FOR ROUGH WORK



114. A, B, C and D purchase a gift worth ₹ 60. A pays  $\frac{1}{2}$  of what others are paying, B pays  $\frac{1}{3}$ rd of what others are paying and C pays  $\frac{1}{4}$ th of what others are paying. What is the amount paid by D?  
(A) 16 (B) 13 (C) 14 (D) 15
115. If  $a+b = a + b + \frac{a}{b}$ , then the value of  $12 \div 4$  is:  
(A) 20 (B) 21 (C) 48 (D) 19
116. If the median drawn on the base of a triangle is half its base, the triangle will be:  
(A) right-angled (B) acute-angled  
(C) obtuse-angled (D) equilateral
117. Taking any three of the line segments out of segments of length 2 cm, 3 cm, 5 cm and 6 cm, the number of triangles that can be formed is:  
(A) 3 (B) 2 (C) 1 (D) 4
118. If  $x^2 + y^2 + z^2 = 2(x - y - z) - 3$ , then the value of  $2x - 3y + 4z$  is [ Assume that  $x, y, z$  are all real numbers ]:  
(A) 9 (B) 1 (C) 3 (D) 0
119. A swimmer swims from a point A against a current for 5 minutes and then swims backwards in favour of the current for next 5 minutes and comes to the point B. If  $AB = 100$  metres, the speed of the current (in km per hour) is:  
(A) 0.4 (B) 0.2 (C) 1 (D) 0.6
120. Two circles of same radius 5 cm, intersect each other at A and B. If  $AB = 8$  cm, then the distance between the centres is:  
(A) 6 cm (B) 8 cm  
(C) 10 cm (D) 4 cm
121. ABCD is a rhombus. AB is produced to F and BA is produced to E such that  $AB = AE = BF$ . Then:  
(A)  $ED > CF$  (B)  $ED \perp CF$   
(C)  $ED^2 + CF^2 = EF^2$  (D)  $ED \parallel CF$
122. The radius of the circumcircle of a right angled triangle is 15 cm and the radius of its inscribed circle is 6 cm. Find the sides of the triangle.  
(A) 30, 40, 41 (B) 18, 24, 30  
(C) 30, 24, 25 (D) 24, 36, 30
123. Find the maximum number of trees which can be planted, 20 metres apart, on the two sides of a straight road 1760 metres long.  
(A) 180 (B) 178 (C) 174 (D) 176
124. A contractor undertook to finish a certain work in 124 days and employed 120 men. After 64 days, he found that he had already done  $\frac{2}{3}$  of the work. How many men can be discharged now so that the work may finish in time?  
(A) 48 (B) 56 (C) 40 (D) 50
125. If the lengths of the sides of a triangle are in the ratio 4 : 5 : 6 and the inradius of the triangle is 3 cm, then the altitude of the triangle corresponding to the largest side as base is:  
(A) 7.5 cm (B) 6 cm  
(C) 10 cm (D) 8 cm
126. Each of the two circles of same radius  $a$  passes through the centre of the other. If the circles cut each other at the points A and B and O, O' be their centres, area of the quadrilateral AOBO' is:  
(A)  $\frac{\sqrt{3}}{2} a^2$  (B)  $a^2$   
(C)  $\frac{1}{4} a^2$  (D)  $\frac{1}{2} a^2$
127. The arithmetic mean of the scores of a group of students in a test was 52. The brightest 20% of them secured a mean score of 80 and the dullest 25%, a mean score of 31. The mean score of remaining 55% is:  
(A) 50% (B) 51.4% approx.  
(C) 54.6% approx. (D) 45%

SPACE FOR ROUGH WORK

128. In a  $\triangle ABC$ ,  $\angle A : \angle B : \angle C = 2 : 3 : 4$ . A line  $CD$  drawn  $\parallel$  to  $AB$ , then the  $\angle ACD$  is:  
 (A)  $40^\circ$  (B)  $60^\circ$  (C)  $80^\circ$  (D)  $20^\circ$
129. The curved surface area and the total surface area of a cylinder are in the ratio  $1 : 2$ . If the total surface area of the right cylinder is  $616 \text{ cm}^2$ , then its volume is:  
 (A)  $1232 \text{ cm}^3$  (B)  $1848 \text{ cm}^3$   
 (C)  $1632 \text{ cm}^3$  (D)  $1078 \text{ cm}^3$
130. A person observed that he required 30 seconds less time to cross a circular ground along its diameter than to cover it once along the boundary. If his speed was  $30 \text{ m / minute}$ , then the radius of the circular ground is (Take  $\pi = \frac{22}{7}$ ):  
 (A)  $5.5 \text{ m}$  (B)  $7.5 \text{ m}$   
 (C)  $10.5 \text{ m}$  (D)  $3.5 \text{ m}$
131. If  $a + b + c = 0$ , then the value of  $\left(\frac{a+b}{c} + \frac{b+c}{a} + \frac{c+a}{b}\right) \left(\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}\right)$  is:  
 (A)  $8$  (B)  $-3$  (C)  $9$  (D)  $0$
132. A sum of money is sufficient to pay A's wages for 21 days and B's wages for 28 days. The same money is sufficient to pay the wages of both for:  
 (A)  $12 \frac{1}{4}$  days (B)  $14$  days  
 (C)  $24 \frac{1}{2}$  days (D)  $12$  days
133. Arvind purchased a wrist watch with 30% discount on the labelled price. He sold it with 40% profit on the price he bought. What was his percent loss on the labelled price?  
 (A)  $2$  (B)  $6$  (C)  $4$  (D)  $8$
134. ABC is an isosceles triangle with  $AB = AC$ . A circle through B touching AC at the middle point intersects AB at P. Then  $AP : AB$  is:  
 (A)  $4 : 1$  (B)  $2 : 3$  (C)  $3 : 5$  (D)  $1 : 4$
135. A man standing in one corner of a square football field observes that the angle subtended by a pole in the corner just diagonally opposite to this corner is  $60^\circ$ . When he retires  $80 \text{ m}$  from the corner, along the same straight line, he finds the angle to be  $30^\circ$ . The length of the field, in  $\text{m}$ , is:  
 (A)  $40$  (B)  $20\sqrt{2}$   
 (C)  $20$  (D)  $40\sqrt{2}$
136. If  $a, b, c$  are non-zero,  $a + \frac{1}{b} = 1$  and  $b + \frac{1}{c} = 1$ , then the value of  $abc$  is:  
 (A)  $-1$  (B)  $3$  (C)  $-3$  (D)  $1$
137. A, B, C walk  $1 \text{ km}$  in  $5$  minutes,  $8$  minutes and  $10$  minutes respectively. C starts walking from a point, at a certain time, B starts from the same point  $1$  minute later and A starts from the same point  $2$  minutes later than C. Then A meets B and C at times.  
 (A)  $\frac{5}{3}$  min,  $2$  min (B)  $1$  min,  $2$  min  
 (C)  $2$  min,  $3$  min (D)  $\frac{4}{3}$  min,  $3$  min
138. Value of  $(\tan 1^\circ \tan 2^\circ \tan 3^\circ \dots \tan 89^\circ)$  is:  
 (A)  $1$  (B)  $89$   
 (C) undefined (D)  $0$
139. The greatest common divisor of  $3^{333} + 1$  and  $3^{334} + 1$  is:  
 (A)  $2$  (B)  $1$   
 (C)  $3^{333} + 1$  (D)  $20$

SPACE FOR ROUGH WORK

140. The value of a machine depreciates every year at the rate of 10% on its value at the beginning of that year. If the current value of the machine is ₹ 729, its worth 3 years ago was :

(A) ₹ 1000 (B) ₹ 750.87  
(C) ₹ 947.10 (D) ₹ 800

141. A person bought two bicycles for ₹ 1600 and sold the first at 10% profit and the second at 20% profit. If he sold the first at 20% profit and the second at 10% profit, he would get ₹ 5 more. The difference of the cost price of the two bicycle was :

(A) ₹ 50 (B) ₹ 40  
(C) ₹ 25 (D) ₹ 75

142. If  $\cos x + \cos^2 x = 1$ , the numerical value of  $(\sin^{12} x + 3\sin^{10} x + 3\sin^8 x + \sin^6 x - 1)$  is :

(A) -1 (B) 2 (C) 0 (D) 1

143. The price of sugar having gone down by 10%, a consumer can buy 5 kg more sugar for ₹ 270. The difference between the original and reduced price per kg is :

(A) 75 paise (B) 53 paise  
(C) 62 paise (D) 60 paise

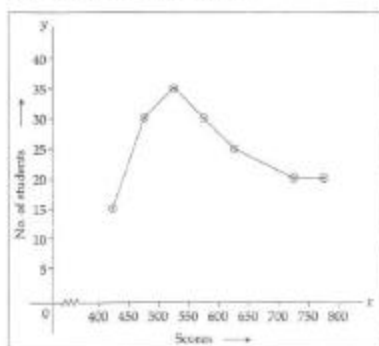
144. The table given below shows production of five types of cars by a company from the year 1998 to 2003. Study the table and answer question.

Years →	1998	1999	2000	2001	2002	2003	Total
Types ↓							
P	10	18	16	15	11	18	88
Q	14	12	13	12	11	14	76
R	16	20	14	13	15	12	90
S	5	8	12	14	20	31	90
T	26	18	24	20	23	21	132
Total	71	76	79	74	80	96	476

In which year the production of cars of all types taken together was approximately equal to the average of the total production during the period :

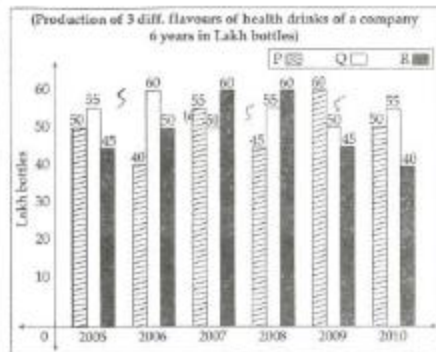
(A) 1999 (B) 2000 (C) 2002 (D) 1998

145. The adjoining diagram is frequency polygon for the scores of students in a test. What is the total number of students appeared in the test ?



(A) 180 (B) 200 (C) 250 (D) 150

A health drink company prepares the drinks of 3 different flavours P, Q, R. The production of 3 flavours over a period of six years has been expressed on bar graph provided below. Study the graph and answer the questions from 146 to 150.



146. In which of the following years the percentage of rise or fall in production from the previous year is maximum for the flavour of Q ?

(A) 2007 (B) 2009  
(C) 2010 (D) 2006

SPACE FOR ROUGH WORK

147. The percentage of the total production of flavour R in 2007 and 2008 with respect to the production of flavour P in 2005 and 2006 :
- (A) 102.25% (B) 115.35%  
(C) 133.33% (D) 97.67%
148. The average annual production of which flavour was maximum in the given period ?
- (A) P and Q both (B) Q only  
(C) P and R both (D) P only
149. What was the approximate decline in the production of flavour R in 2010 as compared to the production of 2008 in percentage ?
- (A) 45.33% (B) 33.33%  
(C) 30.33% (D) 53.33%
150. What is the difference between the average production of flavour Q in 2008, 2009 and 2010 from that of flavour P in 2005, 2006 and 2007 in lakh bottle is:
- (A) 50 (B) 0.5  
(C) 5.5 (D) 5

### FOR VISUALLY HANDICAPPED CANDIDATES ONLY.

144. If  $a + b + c, p \neq 0$  and  $(a + b + c)p = (b + c - a)$   
 $q = (c + a - b)r = (a + b - c)s$  then  $\frac{1}{q} + \frac{1}{r} + \frac{1}{s} - \frac{1}{p}$   
is:
- (A) -1 (B) 0  
(C)  $a + 2b + 3c$  (D) 1
145. Which number should replace both the asterisks in  
 $\left(\frac{21}{*}\right) \times \left(\frac{189}{*}\right) = 1$  ?
- (A) 63 (B) 189  
(C) 467 (D) 21
146. A buys an article for ₹ 1600 and gets two successive discounts of 20% and 10%. He spends 20% on its repairs and sells at a profit of 25%. The selling price of the article is:
- (A) ₹ 1850 (B) ₹ 1990  
(C) ₹ 1728 (D) ₹ 2050
147. The mean temperature from Monday to Wednesday was 37°C and from Tuesday to Thursday was 34°C. If the temperature on Thursday was  $\frac{4}{3}$  th that of Monday, the temperature on Thursday was:
- (A) 35°C (B) 36°C  
(C) 37°C (D) 34°C
148. A rat takes 5 leaps for every 4 leaps of cat, but 3 leaps of the cat are equal to 4 leaps of the rat. What is the ratio of the speed the rat to that of the cat ?
- (A) 15 : 11 (B) 16 : 15  
(C) 15 : 16 (D) 11 : 15
149. A sells a bicycle to B at a profit of 20%. B sells it to C at a profit of 25%. If C pays ₹ 225 for it, the cost price (in ₹) of the bicycle for A is:
- (A) 120 (B) 125  
(C) 150 (D) 110
150. The distance between two towns is 800 km. A car starts from the first town with a speed of 30 km/hr. At the same time, another car starts from the second town with a speed of 50 km/hr. The distance (in km) of the point where they meet from the first town is:
- (A) 300 (B) 400  
(C) 500 (D) 200

SPACE FOR ROUGH WORK

## PART - D

## ENGLISH COMPREHENSION

**Directions :** In question numbers 151 to 155, 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 error, blacken the oval corresponding to (D) in the Answer Sheet.

151. My sister asked me / that how long /  
 (A) (B)  
I would stay there. / No Error.  
 (C) (D)
152. The teacher, as well as the students, /  
 (A)  
have gone on an excursion /  
 (B)  
to Cooty during their summer vacation. / No Error.  
 (C) (D)
153. The US / don't want / India in the Security Council. /  
 (A) (B) (C)  
No Error.  
 (D)
154. The cruel lady made / her step-daughter to do /  
 (A) (B)  
all the household chores. / No Error.  
 (C) (D)
155. You can eat / as much as you like /  
 (A) (B)  
at the newly lunch bar. / No Error.  
 (C) (D)

**Directions :** In question numbers 156 to 160, sentences are given with blanks to be filled 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.

156. \_\_\_\_\_ the people looked well enough, but when one looked more closely one saw that their faces were filled with despair.  
 (A) At first looking (B) At first observation  
 (C) On first sight (D) At first sight
157. He was assured by his friends \_\_\_\_\_ every type of help in an emergency.  
 (A) by (B) of  
 (C) with (D) about
158. The work \_\_\_\_\_, he left his office.  
 (A) having completed  
 (B) having been completed  
 (C) on being finished  
 (D) having been over

159. Our monthly expenditure \_\_\_\_\_ by five hundred rupees when we decided to buy milk from the milkman.

- (A) shot up (B) got up  
 (C) lifted up (D) grew up

160. He was not a man \_\_\_\_\_ intelligence.

- (A) lacking of (B) devoid of  
 (C) absent of (D) empty of

**Directions :** In question numbers 161 to 163, out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

161. Students are asked to collate for an important programme by the principal.

- (A) describe (B) narrate  
 (C) prescribe (D) assemble

162. Advocate :

- (A) pronounce (B) support  
 (C) determine (D) predict

163. Preamble :

- (A) mediation (B) conclusion  
 (C) introduction (D) definition

**Directions :** In question numbers 164 to 166, choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

164. Wary :

- (A) conscientious (B) daring  
 (C) thifty (D) rash

165. Ambiguous :

- (A) plain (B) clear  
 (C) simple (D) easy

166. Accolade :

- (A) blame (B) reticent  
 (C) decorate (D) permeate

**Directions :** In question numbers 167 to 171, four alternatives are given for the Idiom/Phrase underlined. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

167. To play second fiddle.

- (A) to reduce the importance of one's senior  
 (B) take a subordinate role  
 (C) to do back seat driving  
 (D) to be happy, cheerful and healthy



168. Mary broke a dining-room window and had to face the music when her father got home.  
(A) listen carefully  
(B) ask a lot of questions  
(C) listen to music  
(D) accept the punishment
169. Villagers always call a spade a spade.  
(A) to speak in a straightforward manner  
(B) to call someone a spade  
(C) to speak ill about someone  
(D) to speak about spades
170. I am out of my wits and therefore cannot find a way to solve the problem immediately.  
(A) greatly confused  
(B) helpless without power  
(C) totally ignorant  
(D) not intelligent enough
171. Why are you jumping down my throat? I wasn't even in the house when it happened.  
(A) making a joke (B) scolding me  
(C) forcing me to eat (D) running away

Directions: In question numbers 172 to 181, a sentence/part of the sentence is underlined. Below are given alternatives to the underlined sentence/part of the sentence at (A), (B) and (C) which may improve the sentence. Choose the correct alternative. In case no improvement is needed your answer is (D).

172. He may have grown taller when I last saw him.  
(A) from when I last saw him  
(B) since I last saw him  
(C) before I last saw him  
(D) No improvement
173. While crossing the highway, a five year old child was knocked out by a passing car.  
(A) away (B) up  
(C) down (D) No improvement
174. We are looking forward to see you tomorrow.  
(A) looking forward towards seeing  
(B) looking forward for seeing  
(C) looking forward to seeing  
(D) No improvement
175. The clients are waiting outside since morning and will continue to wait until you meet them.  
(A) have waited (B) have been waiting  
(C) were waiting (D) No improvement

176. The workers are hell bent at getting what is due to them.  
(A) hell bent on getting  
(B) hell bent for getting  
(C) hell bent upon getting  
(D) No improvement
177. During his long discourse, he did not touch that point.  
(A) touch upon (B) touch in  
(C) touch of (D) No improvement
178. They could not tell me why did he not eat his lunch.  
(A) why not had he eaten  
(B) why he did not eat  
(C) why had he not eaten  
(D) No improvement
179. He who will bid the highest will get the product.  
(A) who bids the highest  
(B) who the highest bids  
(C) who would bid the highest  
(D) No improvement
180. If he had time he will call you.  
(A) would have (B) would have had  
(C) has (D) No improvement
181. John had told me that he hasn't done it yet.  
(A) told (B) tells  
(C) was telling (D) No improvement

Directions: In question numbers 182 to 188, out of the four alternatives, choose the one which can be substituted for the given words / sentence and indicate it by blackening the appropriate oval [●] in the Answer Sheet.

182. A general pardon granted by the Government to political offenders.  
(A) Excuse (B) Honesty  
(C) Amnesty (D) Pardon
183. One who hates women :  
(A) Misogamist (B) Ambivert  
(C) Misanthrope (D) Misogynist
184. One who cannot be corrected :  
(A) Incurable (B) Hardened  
(C) Invulnerable (D) Incurable
185. A school boy who cuts classes frequently is a :  
(A) Sycophant (B) Truant  
(C) Martinet (D) Defeatist
186. Detailed plan of a journey :  
(A) Travel kit (B) Schedule  
(C) Itinerary (D) Travelogue

187. Stealing of ideas or writings of someone else.  
 (A) scepticism (B) mesmerism  
 (C) plagiarism (D) autism
188. A person who consumes human flesh :  
 (A) Javage (B) Captor  
 (C) Carnivore (D) Cannibal

**Directions :** In question numbers 189 and 190, 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.

189. The laboratories are \_\_\_\_\_ with high-tech electronic gadgets.  
 (A) equpped (B) equiped  
 (C) equpeped (D) equipped
190. Software companies have ushered in \_\_\_\_\_ culture along with advanced technology.  
 (A) foreegn (B) forigen  
 (C) foreign (D) foriegn

**Directions :** In question numbers 191 to 200, you have two passages with 5 questions in each passage. Read the passages carefully and choose the best answer to each question out of the four alternatives and mark it by blackening the appropriate oval [●] in the Answer Sheet.

**Passage - I (Question numbers 191 to 195) :**

The World Health Organisation is briefly called W.H.O. It is a specialised agency of the United Nations and was established in 1948.

International health workers can be seen working in all kinds of surroundings : in deserts, jungles, mountains, coconut groves, and rice fields. They help the sick to attain health and the healthy to maintain their health.

This global health team assists the local health workers in stopping the spread of what are called communicable diseases, like cholera. These diseases can spread from one country to another and so can be a threat to world health.

W.H.O. assists different national health authorities not only in controlling diseases but also in preventing them

altogether. Total prevention of diseases is possible in a number of ways. Everyone knows how people, particularly children, are vaccinated against one disease or another. Similarly, most people are familiar with the spraying of houses with poisonous substances which kill disease-carrying insects.

191. "It is a specialised agency of the United Nations and was established in 1948." Here *specialised* means :  
 (A) expert  
 (B) extraordinary  
 (C) uncommon  
 (D) made suitable for a particular purpose
192. "Total prevention of diseases is possible in a number of ways". The author has given illustrations of :  
 (A) only two such ways  
 (B) only one such way  
 (C) more than two such ways  
 (D) none of these ways
193. "International health workers can be seen working in all kinds of surroundings : in deserts, jungles, mountains, coconut groves, and rice fields". Here *International* means :  
 (A) drawn from all countries of the world  
 (B) believing in cooperation among nations  
 (C) belonging to an organisation which has something to do with different nations.  
 (D) belonging to the whole world
194. "W.H.O. assists different national health authorities not only in controlling diseases but also in preventing them altogether". The above sentence implies that :  
 (A) W.H.O. assists more in preventing diseases than in controlling them.  
 (B) W.H.O. assists in controlling diseases only if they have not been prevented.  
 (C) W.H.O. assists both in controlling diseases and in preventing them.  
 (D) W.H.O. assists many others in addition to the national health authorities.
195. "They help the sick to attain health and the healthy to maintain their health". Here *they* stands for :  
 (A) rice fields  
 (B) international health workers  
 (C) jungles  
 (D) deserts

**Passage - II (Question numbers 196 to 200):**

Why don't I have a telephone? Not because I pretend to be wise or pose as unusual. There are two chief reasons; because I don't really like the telephone, and because I find I can still work and play, eat, breathe, and sleep without it. Why don't I like the telephone? Because I think it is a pest and time waster. It may create unnecessary suspense and anxiety, as when you wait for an expected call, that doesn't come; or irritating delay, as when you keep ringing a number that is always engaged. As for speaking in a public telephone booth, it seems to me really horrible. You would not use it unless you were in a hurry, and because you are in a hurry, you will find other people waiting before you. When you do get into the booth, you are half suffocated by the stale, unventilated air, flavored with cheap face-powder and chain smoking; and by the time you have begun your conversation your back is chilled by the cold looks of somebody who is moving about restlessly to take your place.

If you have a telephone in your house, you will admit that it tends to ring when you least want it to ring; when you are asleep, or in the middle of a meal or a conversation, or when you are just going out, or when you are in your bath. Are you strong minded enough to ignore it, to say to yourself, "Ah well, it will be all the same in hundred years time". You are not. You think there may be some important news or message for you. Have you never rushed dripping from the bath, or chewing from the table, or dazed from bed, only to be told that you are a wrong number? You were told the truth. In my opinion all telephone numbers are wrong numbers. If, of course, your telephone rings and you decide not to answer it, then you will have to listen to an idiotic bell ringing and ringing in what is supposed to be the privacy of your own home. You might as well buy a bicycle bell and ring it yourself.

196. The author does not have a telephone because :
- (A) he poses as unusual  
(B) he would prefer to do something else  
(C) he thinks that it can create unnecessary suspense and anxiety.  
(D) he pretends to be wise
197. '..... your back is chilled by the cold looks of somebody' means :
- (A) you feel cold at the back  
(B) you feel uneasy because the person next in the queue looks at you restlessly  
(C) people are very cold  
(D) others look at you angrily
198. 'All telephone numbers are wrong numbers', because :
- (A) the author always gets wrong calls  
(B) whenever he tries it always goes wrong.  
(C) he doesn't give much importance to telephone and telephone numbers.  
(D) none of the statements given above.
199. 'Ah well, it will be all the same in hundred years time'. This sentence means :
- (A) Things have not changed for the past 100 years.  
(B) Things will remain the same for 100 years to come.  
(C) One should be strong minded.  
(D) Nothing is going to change even if you don't answer the telephone bell.
200. He hates speaking in a public telephone booth because :
- (A) he is suffocated by the stale, unventilated air, flavoured with cheap face powder and chain-smoking.  
(B) others look at him angrily  
(C) the other side may not know your number  
(D) it is costlier

- o o o -