# NATIONAL TALENT SEARCH EXAMINATION
## (SAMPLE PAPERS)

Time Duration: 3 Hrs   **Maximum Marks: 200**

Questions 1to 5 find which option must be replaced in ' ? '

1.

(1)   (2)   (3)   (4)

1)   2)   3)   4)

2.

(1)   (2)   (3)   (4)

1)   2)   3)   4)

3.

A   B   C   D

1)   2)   3)   4)

4.

1) 2) 3) 4)

5.

1) 2) 3) 4)
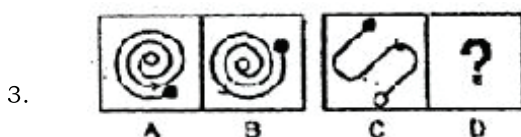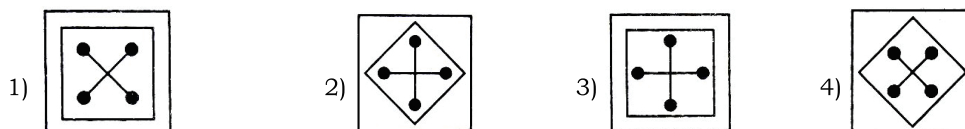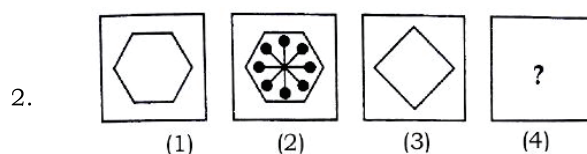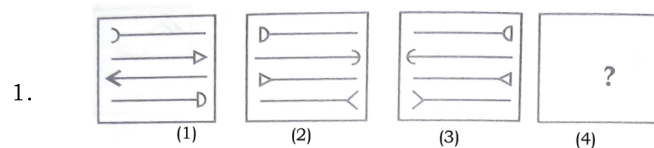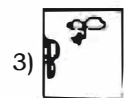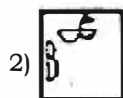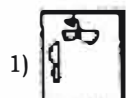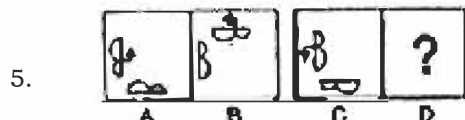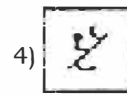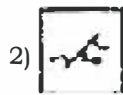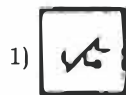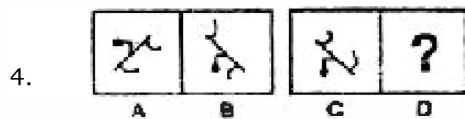
Question No 6 to 15 select a figure which will continue the same series

6.

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

1) 2) 3) 4)

7.

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

1) 2) 3) 4)

8.

1) 2) 3 4)

9.

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

1) 2) 3) 4)

10.

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

1)   2)   3)   4)

11.

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

1)   2)   3)   4)

12.

1)   2)   3)   4)

13.

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

1)   2)   3)   4)

14.

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

1)   2)   3)   4)

15.

```
○           ✡    ∧ U ∧ □ N □ ▲ ◠
=    ✡ ↑      U      N      ◠ ↑   Y
S  C  ✕ ⇌ ☾ C ↑  P ☾    ● P       ●
 (A)     (B)      (C)      (D)      (E)
```

1)
```
▲ ◠ Y
Ⴤ    △
↑
```

2)
```
▲ ◖ Y
=    ▷
↑
```

3)
```
▲ ◖ Y
Ⴤ    S
↑
```

4)
```
▲ Ⴤ Y
▷   ◖
↑
```

16. Which number will replace the question mark ?


```
9      8  6      7  9      6
|  (230)  |  (110)  |  (?)   |
7      6  3      4  5      4
 (a)        (b)        (c)
```
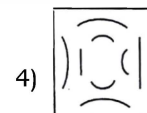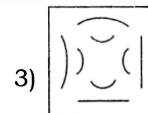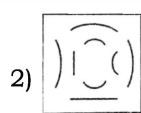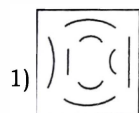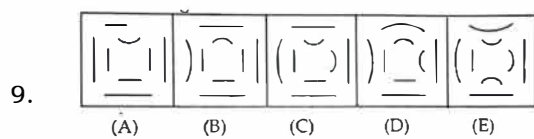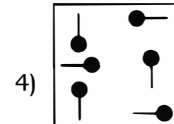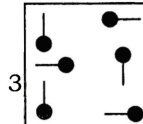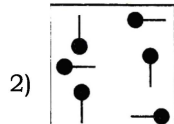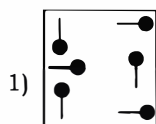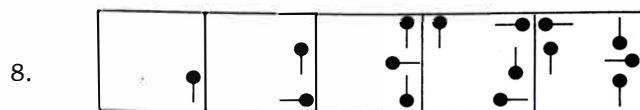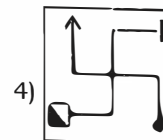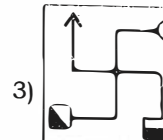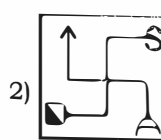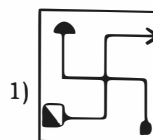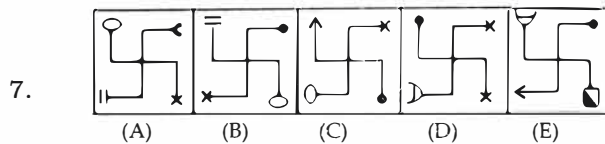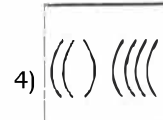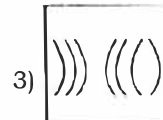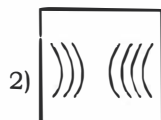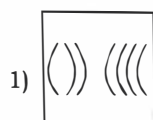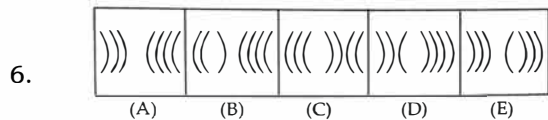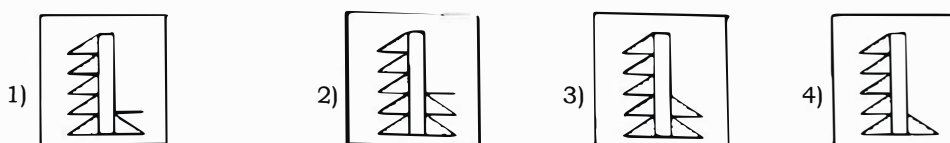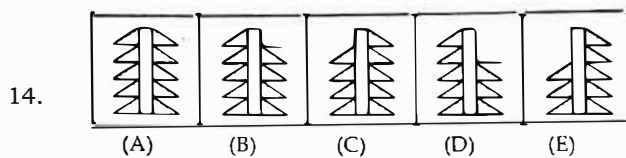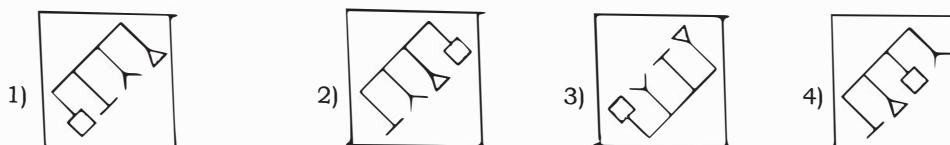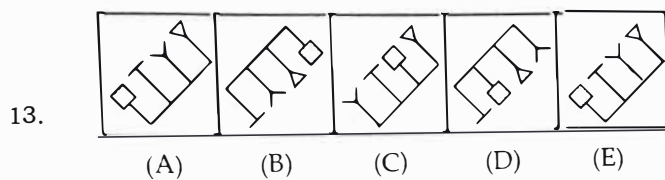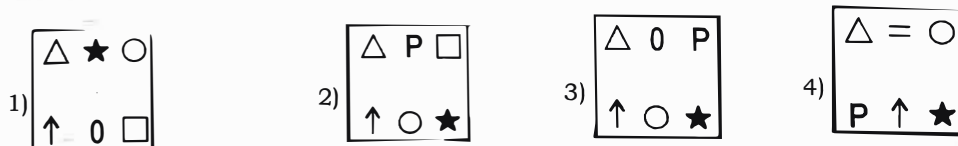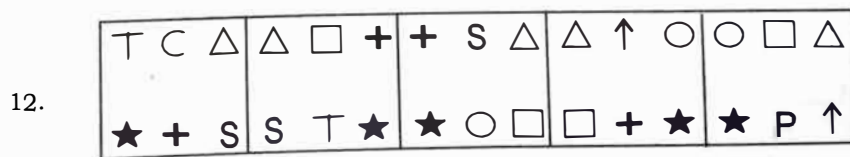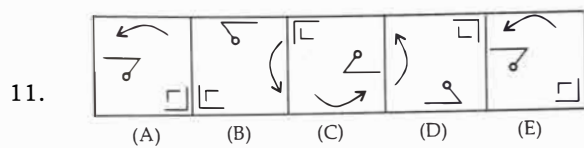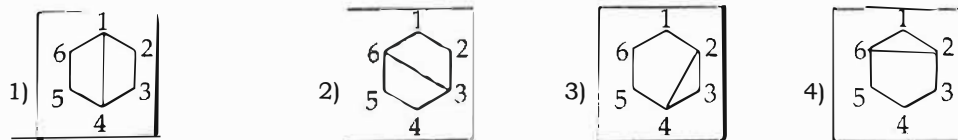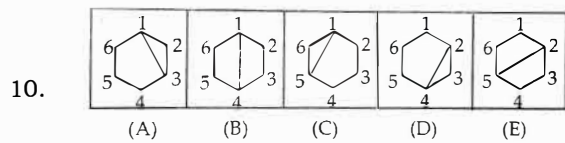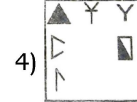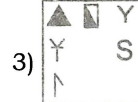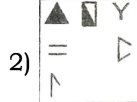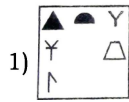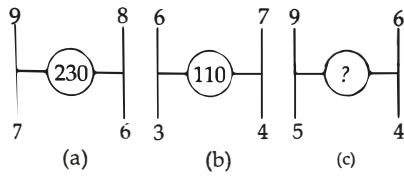
1) 128 2) 148 3) 158 4) 118

17. Which number will replace the question mark ?

```
9    17   16
5     4    8
5     4    ?
9    17    8
```

1) 3 2) 4 3) 9 4) 10

18. Which one will replace the question mark ?

```
 4    5    6
 2    3    7
 1    8    3
21   98    ?
```

1) 94 2) 76 3) 16 4) 73

19. Which one will replace the question mark ?

```
16   28   29
13   12   16
14   10   15
15   30    ?
```

1) 60 2) 30 3) 20 4) 45

20. Which one will replace the question mark ?


```
(93) (27)   (79) (38)   (67) (16
   \  /        \  /        \  /
   (63)        (37)        (42)
    |           |           |
   (3)         (4)         (?)
```
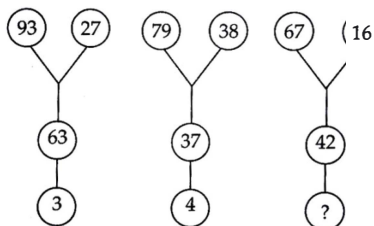
1) 5 2) 6 3) 8 4) 9

21. Which one will replace the question mark

$$\frac{1}{2} \qquad \frac{3}{2}$$

$$2 \qquad 2 \qquad \frac{8}{3}$$

$$? \qquad \frac{19}{5}$$
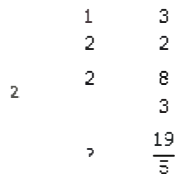
1) $\frac{1}{2}$ 2) $\frac{2}{3}$ 3) $\frac{3}{4}$ 4) $\frac{4}{5}$

22. Which one will replace the question mark ?

5
32   ?   44   7
6
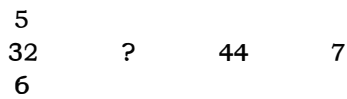
1) 33   2) 38   3) 32   4) 37

23. Which one will replce the question mark ?

    1   3
3 (510) 5 2 (650) 4 0 (?) 2
    4   6   8
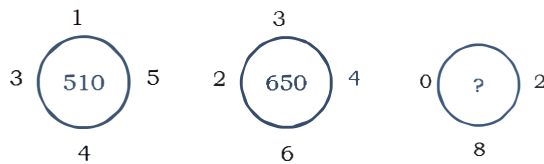
1) 660   2) 670   3) 610   4) 690

24. Which number replaces the question marks ?

        32
162
98 18   8
     2 50
126 ?
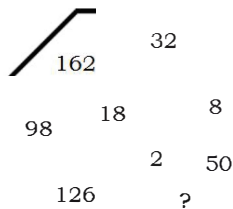
1) 11   2) 19   3) 15   4) 72

25. Which one will replace the quesion mark ?

    4   8   5
6 | 14   6 | 14
  8   8
    18 14   22 11   15
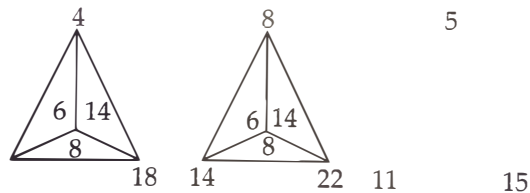
1) 8   2) 14   3) 10   4) 6

Question from 26 to 35 for rare similar in certain manner one is not like other four, choose the figure which is different from the rest.
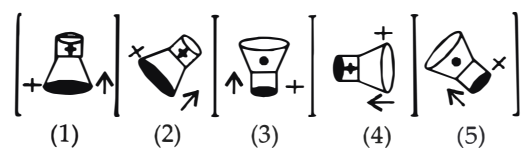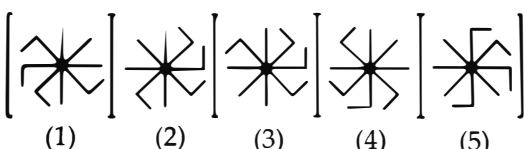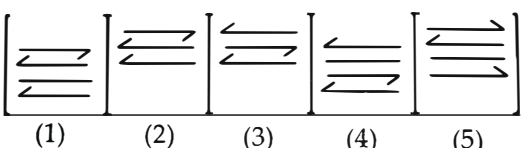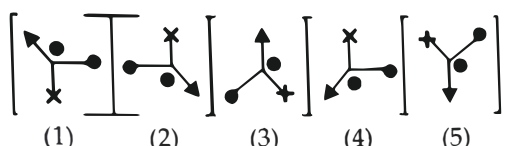
26.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

27.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

28.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

29.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 5

30.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

31.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

32.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

33.

(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

34.
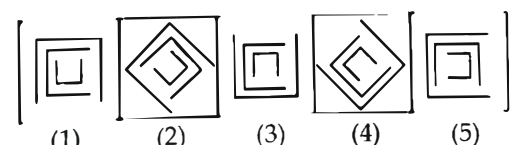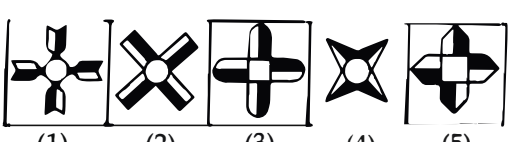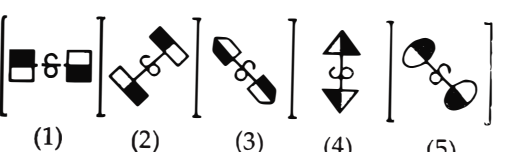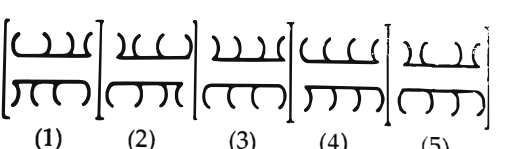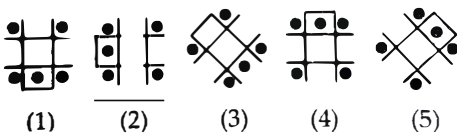
(1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 4   4) 5

35.

(1) (2) (3) (4) (5)

1) 1   2) 2   3) 3   4) 4

36. How many reactangles does the following figure have ?
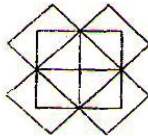
1) 10   2) 12   3) 13   4) 14

37. How many squares are there in the figure given below ?
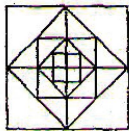
1) 12   2) 13   3) 16   4) 17

38. Find the number of triangles in the following figure
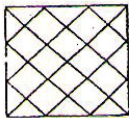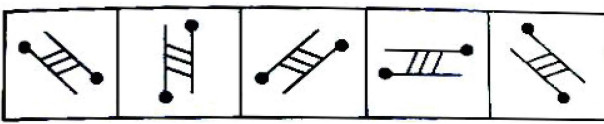

1) 28   2) 32   3) 36   4) 40

39. How many triangles and squares are there in the given figure ?
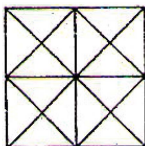
1) 44 triangles, 10 squares   2) 14 triangles, 16 square
3) 24 triangles, 6 squares   4) 24 triangles, 9 squares

40. Count the number of triangles and squares in the figure given below
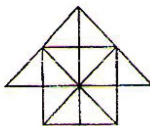
1) 26 triangles, 5 squares   2) 26 triangles, 6 squares
3) 27 triangles, 6 squares   4) 27 triangles, 5 squares

41.

(1) (2) (3) (4) (5)

1) 1   2) 2   3) 3   4) 5

42.

     (1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

43.

1) 1   2) 2   3) 3   4) 4

44.

     (1)   (2)   (3)   (4)   (5)

1) 1   2) 2   3) 3   4) 4

45.

     (1)   (2)   (3)   (4)   (5)
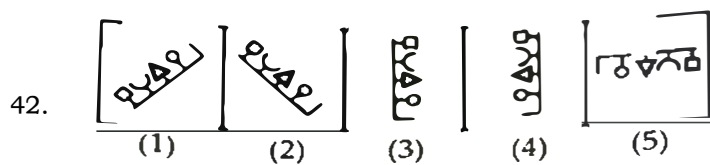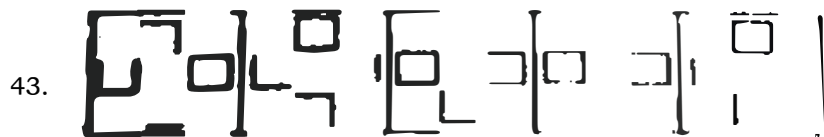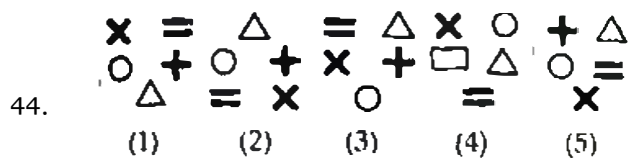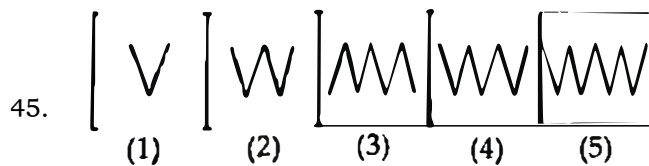
1) 1   2) 2   3) 3   4) 4

46.   Find missing number

14	4	20
8	12	22
19	14	?

1) 35   2) 40   3) 45   4) 55

47.   Find the missing number

36	23	15
29	39	27
47	?	53

1) 33   2) 23   3) 43   4) 53

48.   Find the missing number

6	4	100
8	5	189
11	3	?

1) 128   2) 138   3) 148   4) 158

49. Find the missing number

8	6	72
5	12	90
12	9	?

1) 152   2) 162   3) 122   4) 102

50. Find the missing number

39	3	12
54	2	46
184	?	59

1) 4   2) 6   3) 5   4) 3

L.C.T (51 - 100)

Answer the follwing comprehension 1 and II

i. I consider myself something of an authority on apologies, because a quick temper has provided me with plenty of opportunities to make them. In one of my earliest memories, my mother is telling me, Don't look at the ground when you say, 'I' m sorry .'Hold your head up and look the person in the eye, he'll know you mean it.

My mother thus conveyed the first principle of successful apology: it must be direct. you must never pretend to be doing something else. you do not leaf through a sheaf of correspondence while apologizing to a subordinate after blaming her for a mistake that turned out be your fault. you do not apologize to a hostess, whose guest of honour you insulted, by sending flowers the next day without having mentioned your behaviour.

51. According to the author's mother, the best way to apologize is
    1) to say 'sorry' while looking at the ground
    2) to look the person in the eye, even if you don't say 'sorry'
    3) while saying 'I' m sorry' look the person in the eye
    4) to hold your head up and avoid looking at the person

52. The successful way of apology is that it
    1) should not be mixed up with other activities
    2) could be made casually even when you are busy
    3) should be hinted at indirectly of the person concerned
    4) could be made seriously while doing other activities

53. You should apologize for your bad behavior at a party by sending
    1) flowers to the guest of your hostess
    2) flowers to your hostess at your leisure
    3) flowers to your hostess with a note of apology
    4)only a note of a apology the next day

54. The phrase 'leaf through a book' means to
    1) copy from a book
    2) turn over the pages of a book quickly
    3) read a book seriously
    4) turn over a new leaf

55. The author considers himself to be authority on apologies because
    1) his mother trained him how to apologize
    2) he has read many books on how to apologize
    3) he has apologized many a time
    4) he has been offered apologies in many ways

ii.   we stumbled slowly along in the darkness, with the back loom of the craggy hills around us, and the yellow speck of light burning steadily in front. there is nothing so deceptive as the distance of a light upon a pitch-dark night, and sometimes the glimmer seemed to be far away upon the horizon, and sometimes it might have been within a few yards of us. but at last we could see whence it came, and then we know that we were very close.

56.   the word "stumbled" in the first line suggests that the narrator and his friend
    1) had very poor sight
    2) were walking on an uneven road
    3) had their attention fixed on the distant light
    4) were trying to keep their movements secret

57.   The last sentence suggests that when they discovered the source of the light,
    1) they were surprised by its closeness
    2) they were greatly relieved
    3) they were very pleased
    4) they were utterly disappointed

58.   For the narrator and his friend, the effect of the dimlight was
    1) to create confusion with regard to distance
    2) to brighten an otherwise hopeless situation
    3) to indicate divine intervention
    4) to lesson the difficulty of their mission

59.   The passage as a whole indicates that the mission of the author and his companions was
    1) to investigate the nature of countryside
    2) to detect the movements of suspicious
    3) to study supernatural phenomena
    3) to trace the light to its place of origin

60.   The author and his friend were walking
    1) across a dark, bushy stretch
    2) along a lonely, winding road
    3) across a lonely, hilly country side
    4) along an ill-lit and ill-maintained forest road

II.   One word substitutes

61.   Government by one man
    1) anarchy   2) monarchy   3) autocracy   4) democracy

62.   One who walks in one's sleep
    1) dreamer   2) somnambulist   3) neomatic   4) ignorant

63.   A person suffering from nervous break down
    1) eccentric   2) neurotic   3) lunatic   4) mongrel

64.   A book or paper written in hand
    1) hand written   2) manuscript   3) edition   4) draft

65.   The practice of having more than one wife at a time
    1) ploy gamy   2) monogamy   3) polyandry   4) digamy

66.   One who abstains totally from alcoholic drinks
    1) recluse   2) teetotaler   3) sceptic   4) stoic

67.   A cluster of houses in village
    1) mohalla   2) hamlet   3) colony   4) sector

68.   A place where money is coined
    1) mint   2) press   3) treasury   4) bank

69.   A professional rider in horse races
    1) rider   2) horse courser   3) jockey   4) coach

70.   The house of an eskimo
    1) hamlet   2) dower   3) igloo   4) hut

III. Fill in the blanks using correct the form of the verb.

71. He_____ a letter to this pen-friend every month.
    1) writes   2) is writing   3) was writing   4) am writing
72. She offered me an apple, but I was not hungry as I_____lunch
    1) was just eating   2) just ate
    3) had just eaten   4) have just eaten
73. At this time tomorrow I _____ on the beach on florida
    1) will havebeen lying   2) will be lying
    3) will lie   4) lie
74. I____ for more than an hour before she finally arrived.
    1) had waited   2) had been waiting
    3) was wiating   4) waited
75. I____ for a few minutes when a noise out side the window woke me up.
    1)only slept   2) had only been sleeping
    3) was only sleeping   4) had only slept
76. I was so relieved when I found my keys. I ___ for them whole morning.
    1) was looking   2) had been looking
    3) looked   4) had looked
77. Why are you in such a hurry a this morning? I_____ a bath and had'nt noticed what time it was
    1) was having   2) had been having
    3) had had   4) had
78. At the end of the next month I have____for exactly 25 years.
    1) will marry   2) will have been married
    3) drove   4) had been driving
79. My best friend and I____ each other for over fifteen years
    1) have known   2) has known   3) know   4) had known
80. Your pencils____if you ___ your school bag more carefully
    1) would break, will pack   2) wouldn't break, peck
    3) wouldn't break, packed   4) will not break, wouldn't pack

IV. Idioms and phrases

81. He was caught between the devil and deep sea
    1) devil and dead sea   2) devil and the deep blue sea
    3) death and the deep sea   4) death and the devil sea
82. He is normally a calm man __it was surprise to see him put his foot down.
    1) stomp furiously   2) resign with out putting up a fight
    3) take a firm stance   4) walk away friskily
83. It has been a while since I graduated from college____ can help me jog my memory a bit
    1) help me run in circles   2) enhance my recall
    3) gives clues that would help me recall
    4) help me become filter
84. The police searched every nook and each cranny for the thieves.
    1) every nook and each cranny   2) under each cranny for the thieves
    3) all nooks crannies   4) every nook and cranny
85. I need some one to give me legs up here
    1) give me 2 push up   2) push my leg up
    3) help me out   4) leave me alone
86. When failure seemed imminent, the soldiers decided to go down swinging
    1) leave and run   2) surrender
    3) do the most while they could   4) change sides

87. He has made his mark in the world of cricket.
    1) gained an unsavoury reputation   2) scored many centuries
    3) distinguished himself   4) played for his country
88. He was at the prime of his career when he called off a day.
    1) called off a day   2) called it a day
    3) was called off for a day   4) called it off for a day
89. You need to stop following your tail and get some real work done.
    1) following your tail   2) beating around your tail
    3) pulling around your tail   4) chasing your tail
90. The opposition spokes person has put his foot in the mouth yet again
    1) spoken eloquently
    2) criticized the ruling early
    3) changed his statement
    4) staid something embarrassing or inappropriate

Cloze Test

V. **Fill in each of the numbered blanks in the following passage with the most suitable word out of the alternatives given against each number.**

    The world bank will take a decision soon on whether to continue supporting the sarovar dam on the Narmada, which it had been funding ..1...it was launched. an internal..2..of the sardar sarovar project...3..by the bank, following protests.4.., some environmental groups, is...5..completion and its board..6..expected to decide in may or...7...1993, whether to continue funding the ...8...the bank's vice president for...9..sustainable development, Ismail seralgdin...10...commendations to the board soon, according to world bank sources here.

91. 1) as   2) since   3) when
92. 1) assessment   2) opinion   3) examination
93. 1) commissioned   2) launched   3) constituted
94. 1) against   2) of   3) by
95. 1) getting   2) nearing   3) having
96. 1) was   2) is   3) had been
97. 1) april   2) august   3) june
98. 1) effort   2) project   3) people
99. 1) socially   2) economically   3) environmentally
100. 1) whom   2) who   3) whose

PHYSICS (101 - 113)

101. From the diagram given a long side, calculate acceleration
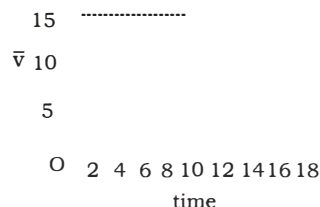
    1) $1.5 \, \text{m/s}^2$ 2) $2 \, \text{m/s}^2$ 3) $3 \, \text{m/s}^2$ 4) $5 \, \text{m/s}^2$

102. A body falls from rest freely under gravity with an acceleration of $9.8 \, \text{m/s}^2$. Neglecting air resistance, the distance travelled by the body during the third second of its motion will be
    1) 14.7 m   2) 24.5 m   3) 19.6 m   4) 29.4 m

103. A body of mass 'm' accelerate uniformly from rest to a speed of 'v' in 't' sec. The average power delivered is
    1) $\dfrac{mv^2}{t}$ 2) $\dfrac{mv^2}{2t}$ 3) $\dfrac{1}{mv^2}$ 4) $\dfrac{mv^2}{4t}$

104. Three blocks of masses m_1, m_2 and m_3 are connected by massless strings as shown in the figure on a frictionless table. They are pulled with a force of 40 N. If $m_1 = 10$ kg, $m_2 = 6$ kg and $m_3 = 4$ kg, then tension t_2 will be

m_3—T_1—m_2—T_2—m_1—40 N

1) 10 N   2) 20 N   3) 32 N   4) 40 N

105. A planet orbits the sun in an elliptical path as shown in the figure. Let v_P and v_A be speed of the planet when at perihelion and aphelion respectively. Which of the following relations is correct?
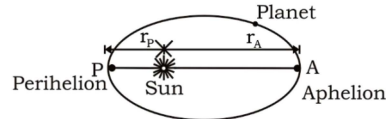
1) $\dfrac{r_P}{r_A} = \dfrac{v_A}{v_P}$ 2) $\dfrac{r_P}{r_A} = \dfrac{v_P}{v_A}$ 3) $\dfrac{r_P}{r_A} = \sqrt{\dfrac{v_P}{v_A}}$ 4) $\dfrac{r_P}{r_A} = \sqrt{\dfrac{v_A}{v_P}}$

106. A cubical tank of side 9m is half filled with water. Now it is accelerated towards right with acceleration $\dfrac{g}{3}$. Find the depth of water at each end A & B

$a = \dfrac{g}{3}$
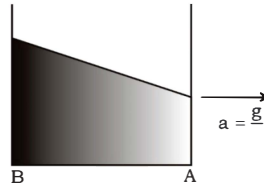
1) $\dfrac{3}{2}m, \dfrac{4}{2}m$ 2) 8m, 6m   3) 3m, 6m   4) $\dfrac{1}{2}m, \dfrac{5}{3}m$

107. In the network shown below, the ring has zero resistance. The equivalent resistance between the points A and B is
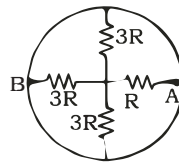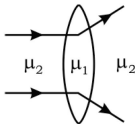
1) 2R   2) 4R   3) 7 R   4) 10 R

108. Masses of three wires of same material are in the ratio 1 : 3 : 5 and their lengths are in the ratio 5 : 3 : 1. If they are connected in series with a battery then the ratio of heats produced in them will be

1) 5 : 9 : 5   2) 25 : 9 : 1   3) 125 : 15 : 1   4) 25 : 15 : 9

109. The north pole of a magnet is moved into a coil through the coil through the end A. Simultaneously the north pole of another magnet is moved into the coil through the end B as shown in the figure. The direction of induced emf will

A   B

N] (00000) [N
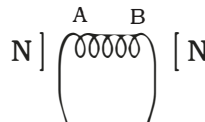
1) Be in the anticlockwise direction as seen through the end A   2) Be in the clockwise direction as seen through the end B

3) Depend on the speed with which the two magnets are moved

4) Depend on the speed with which the magnets are moved and the strengths of the magnets

110. A conducting rod of length l is falling with a velocity v perpendicular to a uniform horizontal magnetic field B. The potential difference between its two ends will be

1) 2 B l v   2) B lv 3) 0.5 B lv 4) $B^2 \ell^2 v^2$

111. A plane mirror is placed at the bottom of a tank containing a liquid of refractive index μ. P is a small object at a height h above the mirror. AN observer O vertically above P, outside the liquid sees P and its image in the mirror. The apparent distance between these two will be

1) $2\mu h$ 2) $\dfrac{2h}{\mu}$ 3) $\dfrac{2h}{\mu - 1}$ 4) $h\left(1 + \dfrac{1}{\mu}\right)$

112. A convex lens made up of material of refractive index μ_1, is immersed in a medium of refractive index μ_2 as shown in the figure. The relation between μ_1 and μ_2 is

1) $\mu_1 < \mu_2$ 2) $\mu_1 > \mu_2$ 3) $\mu_1 = \mu_2$ 4) $\mu_1 = \sqrt{\mu_2}$

113. A person can see clearly only upto a distance of 25 cm. He wants to read a book placed at a distance of 50 cm. What kind of lens does he require for his spectacles and what must be its power?

1) Concave, - 1.0 D   2) Convex, + 1.5 D   3) Concave, - 2.0 D   4) Convex, + 2.0 D

CHEMISTRY (114 – 126)

114. Line spectrum is characteristic of
1) Atoms   2) Molecules
3) Any substance in the solid state   4)Any substance in the liquid state

115. For which species Bohr's theory does not apply
1) H   2) Be   3) He^+ 4) Li^{2+}

116. The shape of an orbital is decided by
1) Principal quantum number   2) Azimuthal quantum number
3) Magnetic quantum number   4) Radial wave function

117. The (n+1) value for the 3p energy level is
1) 4   2) 7   3) 3   4) 1

118. An element has configuration 2,8,1. It belongs to
1) 1 group and 3rd period   2) 3 group and 1st period
3) 1 group and 8th period   4) 17group and 3rd period

119. The longest period that contains 32 elements and the shortest period are
1) Sixth period, first period   2) Fourth period, second period
3) Fifth period, third period   4) Third period, seventh period

120. At the end of each period the valence shell is
1) Incomplete   2) Half filled   3) Singly occupied 4) Completely filled

121. The most significant contribution towards the development of periodic table was made by
1) Mendeleef   2) Avagadro   3) Dalton   4) Gay-lussac

122. Which is an ionic compound?
1) HCl   2) Na_2O 3) CO_2 4) SO_2

123. Solid NaCl is a bad conductor of electricity because
1) There are no ions   2) Solid NaCl is covalent
3) There are no movement of ions   4) There are no electrons

124. Octet rule is not valid for
1) CO_2 2) H_2O 4) CO

125. Which of the following contains both ionic and covalent bonds?
1) CCl_4 2) NaCl   3) KCl   4) KCN

126. Bonds present in NH_4Cl are
1) Ionic   2) Covalent   3) Dative   4) All

BIOLOGY (127 - 140)

127. Match the following:
     1) Riboflavin   a) Fertility disorder
     2) Cyanocobalomin b) Pernicious anaemia
     3) Claciferol   c) Delayed dention, Rickets
     4) Tocoferol   d) Photophobia, red and sour tongue
     1) 1-d, 2-b, 3-c, 4-a   2) 1-c, 2-d, 3-a, 4-b
     3) 1-b, 2-c, 3-a, 4-c   4) 1-d, 2-c, 3-b, 4-a

128. Identify the events of photosynthesis occur in stroma.
     1) Conversion of light energy to chemical energy
     2) Splitting of water molecule
     3) Reduction of CO_2 to Carbohydrate
     4) All the above

129. Dodder belongs to the family
     1) Morning glory family   2) Convolvulaceae
     3) Both 1 and 2   4) Fabaceae

130. Trypsin: Pancres: Ptyalin: ?
     1) Salivary glands 2) Small intestine 3) Gastric juice 4) Liver

131. Which of the following diseases is caused due to protein caloric malnutrition:
     1) KwashioKor   2) Marasmus   3) Obesity   4) Both 1 and 2

132. Energy obtained by a cell from a catabolic reaction is immediately stored in the form of
     1) Pyruvic acid   2) Glocose   3) ATP   4) Lactic acid

133. Kreb's cycle is a characteristic feature of
     1) Eulcaryotes   2) Prokaryotes   3) Both 1 and 2   4) All of these

134. Which of the following can be seen in aerobic respiration

     1) Lactic acid+energy 2) Ethanol+CO_2+Energy 3) CO_2+H_2O+Energy 4) None of these

135. Chlorophyll and Hemoglobin are the pigment molecules which can be distinguished by the pressure of:
     1) Chlorophyll-Mg, Hemoglobin-zink   2) Chlorophyll-Iron, Hemoglobin-Mg
     3) Chlorophyll-Mg, Hemoglobin-Fe   4) Chlorophyll-Mg, Hemoglobin-Ca

136. Semi lunar values guard the junction of
     1) Left ventricle and aorta   2) Right ventricle and aorta
     3) Left ventricle and pulmonary artery 4) Right ventricle and pulmonary vein

137. Lymph contains
     1) Less proteins than blood plasma   2) More proteins than blood plasma
     3) Equal amount of proteins as in blood plasma   4) Does not contain protein

138. Pepsin differ form trypsin, because it digests
     1) Proteins in acidic medium in duodenum   2) Proteins in alkaline medium is stomach
     3) Proteins in acidic medium in stomach   4) Proteins in alkaline medium in stomach

139. A 10th class student has not taken the food in lunch. After some time she is feeling more hungry because of secretion of:
     1) Leptin   2) Gherlin   3) Bile juice   4) All of these

140. Match the following

     1) Oesophagus   a) Suppresses hunger

     2) Villi   b) Thin long muscular tube

     3) Chyme   c) Found in small intestine

     4) Letptin   d) Partially digested semi liquid food

                                            e) Responsible for hunger

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

MATHS (141 - 160)

141. In $\triangle ABC$, segment $AD \perp BC$, if $BD = x$ units, then x is
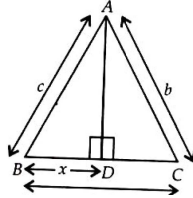

1) $x = \dfrac{c^2 + a^2 - b^2}{2a}$

2) $x = \dfrac{a^2 + b^2 - c^2}{2c}$

3) $x = \dfrac{b^2 + c^2 - a^2}{2b}$

4) $x = \dfrac{b^2 + c^2 - a^2}{2abc}$

142. In an examination A got 25% marks more then B , B got 10% less than C and C got 25% more that D, if D got 320 marks out of 500, the marks obtained by A were
   1) 450　　　　　　2) 405　　　　　　3) 360　　　　　　4) 400

143. In the figure, ABC is a triangle in which AD bisects $\angle A, AC = BC, \angle B = 72^0$ and CD= 1 cm, length of BD (in cm) is
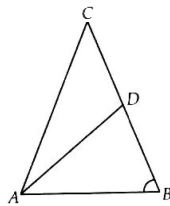
1) 1　　　　　2) $\dfrac{}{2}$　　　　　3) $\dfrac{\sqrt{5}-1}{2}$　　　　　4) $\dfrac{\sqrt{3}+1}{2}$

144. In the figure, BC is a chord of the circle with centre O and A is a point on the minor arc BC. Then $\angle BAC - \angle OBC$ is equal to

1) 30^0　　　　　　2) 60^0　　　　　　3) 80^0　　　　　　4) 90^0

145. In figure, ABC is a quadrant of a circle of radius 14 cm and a semicircle is drawn with BC as diameter. The area of the shaded region is
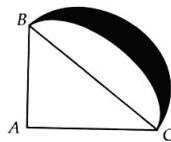
1) 98 cm²　　　　2) 154 cm²　　　　3) 56 cm²　　　　4) None of these

146. If α, β are the zeroes of polynomial $f(x) = x^2 - p(x+1) - c,$ then $(\alpha + 1)(\beta + 1) =$
   1) c-1　　　　　2) 1-c　　　　　3) c　　　　　4) 1+c

147. A five - digit number abcde is such that the number abcde1 is the product of 1 abcde and 3. The sum of the digits of abcde is
   1) 25　　　　　2) 26　　　　　3) 27　　　　　4) 28

148. Let $T = \dfrac{1}{3-\sqrt{8}} - \dfrac{1}{\sqrt{8}-\sqrt{7}} + \dfrac{1}{\sqrt{7}-\sqrt{6}} \quad \dfrac{1}{\sqrt{6}-\sqrt{5}} + \dfrac{1}{\sqrt{5}-2}$. Then,

1) $T<1$ 2) T=1 3) T>2 4) 1<T<2

149. A town's population increased by 1200 people, and then this new population is decreased by 11%. The town now has 32 less people than it did before the 1200 increase. What is the original population ?

1) 1200 2) 11,200 3) 9968 4) 10,000

150. Four points P,Q,R, and S are on a line segment, as shown

$$\underset{\text{P}}{\text{✻}} \qquad \underset{\text{Q}}{\text{✻}} \qquad \underset{\text{R}}{\text{✻}} \qquad \underset{\text{S}}{\text{✻}}$$

if PQ : QR = 1:2 , QR : RS = 8 : 5, then PQ : QS is
1) 3 : 13 2) 1 : 7 3) 1 : 13 4) 4 : 13

151. T = Set of all triangles in a plane,
I = Set of all isosceles triangles, and
S=Set of all acute triangles.
Which of the following diagrams describes the above sets best ?

1)   2)   3)   4)
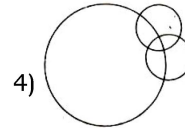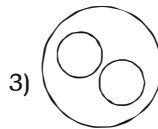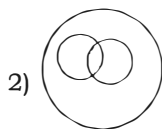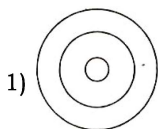
152. A second - hand car was purchased 3 years ago for Rs. 62,500 and now its depreciated value is Rs. 32,000. At what rate percent per annum is it depreciating ?
1) 25 % 2)24% 3) 20% 4) 16%

153. The LCM of $a^2 + 3a + 2, a^2 + 5a + 6$ and $a^2 + 4a + 4$ is

1) $(a+2)^2 (a+3)$ 2) $(a+2)^2 (a+1)$

3) $(a+2)^2 (a+3)(a+1)$ 4) $(a+3)(a+2)(a+1)$

154. If p and q are the roots of the equation $ax^2 + bx + c = 0$, then the value of $\dfrac{p}{q} + \dfrac{q}{p}$ is

1) $b^2 - 2ac$ 2) $\dfrac{b^2 - 2ac}{ac}$ 3) $\dfrac{b^2 - 4ac}{2a}$ 4) $\dfrac{b^2 - 4ac}{ac}$

155. The twentieth term of the GP 5/2, 5/4, 5/8,.... is

1) $5/2^{19}$ 2) $5/2^{20}$ 3) $5/2^{10}$ 4) $5/10^{11}$

156. AB is parallel to QR such that $\dfrac{PA}{AQ} = \dfrac{PB}{BR}$. If PB=2 cm, EC = 4 cm, and QR =9 cm, find the length of AB.

1) 2 2) 1 3) 4 4) 3

157. In the Figure, ADCE is a parallelogram. Then area of $\triangle$ECB equals
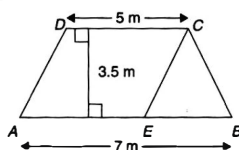
1) 21 m^2 2) 15.5 m^2 3) 3.5 m^2 4) 6.5 m^2

158. Each of the digits 3,5,6,7 and 8 is placed one to a box in the diagram. If the two digit number is substracted from the three digit number, what is the smallest difference ?

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   1) 269   2) 278   3) 484   4) 271
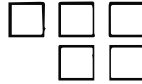
159. The digits 2,4,5,6,8 and 9 can be distributed among the lettered squares in the array so that the sum of the entries on each of the rows and columns is the same number K. What is K ?

7	a	b	1
c			d
3	e	f	10

   1) 15   2) 16   3) 17   4) 19

160. If a,b and c are digits for which

$$\begin{array}{r} 7\,a\,2 \\ -\,4\,8\,b \\ \hline c\,7\,3 \end{array}$$

then a+b+c =

   1) 14   2) 15   3) 16   4) 17

SOCIAL (161 - 200)

HISTORY

161. Giuseppe Mazzini founded two more under ground societies, first, 'Young Italy' in Marseilles and second is

   1) Young Rome   2) Young Europe   3) Carbonari   4) Young world

162. Customs union formed in 1834 was

   1) Collectivisation   2) Zolleverein

   3) European Economic union   4) Napoleonic code

163. When did "Battle of Leipzing" begin?

   1) 1812   2) 1811   3) 1813   4) 1815

164. The Habsburg were rulers of

   1) Austria-Hungary   2) Dutch republic

   3) Germany   4) Switzerland

165. Louis XVI of the Bourbon family of kings was married to the Austrian princess

   1) Marie Little   2) Barbodex Marie

   3) Marie Antoinette   4) Mary

166. The Declaration of the Rights of man & citizen, painted by artist _____in 1790 in France

   1) Locke   2) Rousseau   3) La barbier   4) Mirabeau

167. Which of the following is true about 'Bastille storming'?

   1) it was a fortress prison in France

   2) It symbolized despotic powers of the French king

   3) French common men used to hate the Bastlle

   4) All of these

168. Which Revolution gave the idea of Liberty, freedom and Equality to the world:

   1) the American Revolution   2) the French Revolution

   3) the Russian Revolution   4) None of these

169. Who stormed the Bastille the fortress prison during the last years of 18th century
    1) Soldiers   2) Peasants
    3) Agitated crowd   4) National Assembly

170. The Duma were council assemblies which were created by the
    1) Lenin   2) Karl Marx   3) Tsar of Russia   4) French king

171. Before 1914, Petrograd was known as
    1) Samara   2) Omsk   3) St Petersburg   4) Moscow

172. 'God save our nobles' this national Anthem is related to the
    1) U.K   2) U.S.A   3) U.S.S.R   4) U.A.E

173. Who amongst these offered chancellorship top Hitler
    1) Churchill   2) Goebbels   3) Helmut   4) Hindenburg

174. In context of Germany what was 'Holocaust'
    1) Nazi propaganda   2) Nazi honour Crosses
    3) Nazi killing operations   4) A nazi school

175. Benito Mussolini was the dictator of
    1) Germany   2) India   3) Italy   4) England

Geography

176. The geographical feature that separates India from Srilanka is
    1) Gulf of cambay   2) Gulf of mannar
    3) gulf of Kutchchh   4) Gulf of Khambat

177. The tropic of cancer passes through
    1) Bihar   2) Chattisgarh   3) Orissa   4) Uttarpradesh

178. Which of the following divisions of India has the oldest landmass
    1) the Himalayas   2) the Northern plain
    3) the Peninsular   4) the Indian desert

179. Which of the following is the oldest route of contact between India and other countries of the world
    1) Ocean routes   2) Maritime contact 3) Land routes   4) Air routes

180. What is the position of India in the world in respect of area?
    1) 6th position   2) 7th position   3) 9th position   4) 8th position

181. The longitudinal Extent of Himalayas from Jammu & Kashmir to Arunachal Pradesh is
    1) 1400 km   2) 2400 km   3) 3400 km   4) 400 km

182. The wind blowing following rivers does not drain into the Arabian sea?
    1) Kaal Baisakhi   2) trade winds   3) Loo   4) Fast track

183. Which of the following rivers does not drain into the Arabian sea?
    1) Narmada   2) Indus   3) Kaveri   4) All of these

184. Which one of the following places receives the second highest rain fall in the world
    1) Silchar   2) Cherrapunji   3) Mawsynram   4) All the above

185. Gurusikhar is the highest peaks in the following ranges
    1) Aravali Ranges   2) Western ghats   3) Eastern ghats   4) Sahyadri

186. _____ is the highest peak in western ghats
    1) Mt Everest   2)   3) Anaimudi   4) Dodabetta

187. The boimes are identified on the basis of
    1) Cities   2) Plants   3) States   4) rocks
188. How many Tiger reserves are there in India
    1) 27   2) 37   3) 55   4) None of these
189. Match List-I with List-II and select the corrcet answer using the code given below

    List-I Forest   **List-Ii Region**
    a) Tropical moist deciduous   (i) Arunachal Pradesh
    b) Tropical dry deciduous   (ii) Sahyadris
    c) Alpine   (iii) middle ganga plain
    d) Tropical wet   (iv) Tarai
    1) a-iv, b-ii, c-i, d-iii   2) a-iv, b-iii, c-i, d-ii
    3) a-iii, b-iv, c-i, d-ii   4) a-i, b-iv, c-ii, d-iii

Polity

190. _____ is the number of deaths per 1000 persons in a year
    1) Mortality rate   2) Birth rate   3) Death rate   4) None of these
191. Charminar of drafting committee is
    1) B.R. Ambedkar   2) Babu Rajendra prasad
    3) Jawaharlal Nehru   4) Nerendra Modi
192. The first president of India is
    1) Jawaharlal nehru   2) Pranabh Mukherjee
    3) Babu rajendra prasad   4) Motilal Nehru
193. Which is the main production activity in villages across India
    1) Transportation   2) Small scale industries
    3) Fishing   4) Farming
194. To grow more than one crop on a a piece of land during the year is known as
    1) Kharif crop   2) Multiple cropping 3) Rabi crop   4) Zaid crop
195. Reasons for poverty in India are
    1) Unemployment   2) Illiteracy
    3) Colonial Administration   4) All
196. Cooperative societies setup shop to sell low priced goods to
    1) Rich people   2) Poor people   3) Educated people 4) Illiterate people
197. F.C.I stands for
    1) Foreign Cooperation with India   2) Food corporation of India
    3) Fossils corporation of India   4) Food coming to India
198. What does food security mean
    1) Availability of food   2) Accessibility of food
    3) Affordability of food   4) All of these
199. To whom is the yellow card issued
    1) to shop keepers   2) To land lords
    3) To government employee   4) People below the poverty line
200. MSP's stands for
    1) Minimum support price   2) Maximum support price
    3) Marginal support price   4) None of these