NTSE – NOVEMBER, 2015
MENTAL ABILITY AND
SCHOLASTIC APTITUDE TEST

Time : 180 Minutes

Mental Ability Test	:	50 Marks
Language Comprehensive Test	:	50 Marks
Aptitude Test	:	100 Marks
Total	:	**200 Marks**

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you answer the questions. Answers are to be SHADED on a SEPARATE OMR Answer Sheet given, with HB Pencil. Read the Instructions printed on the OMR Sheet carefully before answering the question.

1. Please write your Center Code Number and Roll Number very clearly (only one digit in one block) on the OMR Sheet as given in your admission card. Please see that no block is left unfilled and even zeros appearing in the Center Code Number are correctly transferred to the appropriate blocks on the OMR Sheet as shown in the example given in the OMR Sheet. For all the subsequent purpose your Center Code Number and Roll Number shall remain the same as given on the Admission Card.

2. The Test is in THREE PARTS. Part – I (Mental Ability) consists of 50 Questions (Q. Nos. 1 to 50), Part-II (Language Comprehensive Test) consists of 50 Questions (Q. Nos. 51 to 100) and Part- III (Aptitude Test) consists of 100 questions (Q. Nos. 101 to 200).

3. All questions carry one mark each.

4. Since all questions are compulsory, do not try to read through the whole question paper before beginning to answer it.

5. Begin with the first question and keep trying one question after another till you finish all three parts

6. If you do not know the answer to any question, do not spend much time on it and pass on to next one. If time permits, you can come back to the questions which you have left in the first instance and try them again.

7. Since the time allotted to the question paper is very limited, you should make the best use of it by not spending too much time on any question.

8. A black page is provided for rough work at the end of each part.

9. REMEMBER YOU HAVE TO SHADE ANSWERS ON A SEPARATE OMR SHEET PROVIDED.

10. Answer to each question is to be indicated by SHADING the circle having the number of the correct alternative in OMR Sheet from among the ones given for the corresponding question in the booklet.

11. Now turn to the next page and start answering the questions.

12. After the examination, you should hand over the OMR Sheet to the Invigilator of the room.

13. The candidate need not return this Question Paper booklet and can take it after completion of the examination. No candidate should leave the examination hall before the end of the examination.

PART – I
MENTAL ABILITY TEST
(Q.Nos. 1 to 50)
Max. Marks : 50

Note : SHADE the correct alternatives in the OMR Answer Sheet provided, from amongst the ones given against the corresponding question in the Question Booklet. For shading the circles, use HB Pencil.

Question (1 to 6) : In the Number series given below, one Number is missing. Each series is followed by five alternative answers (1), (2), (3), (4) and (5). One of them is the right answer. Identify and indicate it as per the "instructions".

1. 2, 12, 36, 80, 150, ………
   1) 242   2) 262   3) 252   4) 232   5) 272

1. 3

2. 992, 552, …….., 132, 30, 6
   1) 305   2) 306   3) 312   4) 326   5) 356

2. 5

3. 1695, 1700, 1710, 1727, 1753, …..
   1) 1760   2) 1790   3) 1780   4) 1770   5) 1800

3. 2

4. 85, 66, 187, 200, 369, 386, ……
   1) 675   2) 575   3) 475   4) 875   5) 975

4. No Answer

5. 20, 141, 310, 599, 960, 1489, …….
   1) 2430   2) 2330   3) 2230   4) 2130   5) 2530

5. 2

6. 1900, 939, ………., 377, 376
   1) 396   2) 698   3) 498   4) 598   5) 798

6. 3

Directions : Questions (7 to 10) are based on letter analogy. There are two pairs of letter combinations in each Question., The first (left-side) pair has some relationship between its members. In the second pair, one member is missing. Find this out from answers (1), (2), (3), (4) and (5) such that this pair has similar relationship as the first pair. Indicate your answer as per the instruction.

7. CGKO : AEIM :: DHLP : ………..
   1) BFJN   2) GJFN   3) FNJI   4) BJNF   5) FJNI

7. 1

8. 876 : FGH :: 345 : ………
   1) CDE   2) EDC   3) DEC   4) CED   5) LED

8. 2

9.   BARODA : CBSPEB :: ……..: CPNCBZ
     1) MADRAS   2) BOMBAY   3) BANGURU   4) BANGLA   5)HYDERA

9. 2

10.   CARPET: TCEAPR ::..... : LNAATOI
      1) NATIONPL   2) NATIONAL   3) NATIOLNL   4) NATERANL 5) NATRELAN

10. No Answer

Directions : Questions (11 to 15) : Read the following information carefully and -answer the Questions given-below.

11.   If code of BOARD is CPBSE, then code of CHAIR ....
      1) DIJBS   2) DIBJS   3) DIJSB   4) DISJB   5) DJBSI

11. 2

12.   If code of BHOPAL is EERMDI then code of NAGPUR is .....
      1) QXJMXO   2) QXJMXQ   3) QXMJXO   4) ZXJMXP   5) QMJXOP

12. 1

13.   MONKEY is coded as XDJMNL, then code of TIGER is ....
      1) QDFHS   2) SDFHS   3) SHFDS   4) OJFHS   5) SHSFD

13. 1

14.   Code of APPLE is 50, then the code of ORANGE is ....
      1) 60   2) 70   3) 80   4) 50   5) 40

14. 1

15.   If CIRCLE is coded as DKUFI\IF, then the code of SQUARE is
      1) TSXDFT   2) TSXDTF   3) TXSDFT   4) TXDTFS   5) TXTDSF

15. 2

Directions : Questions (16 to 20) :. In each of the Questions, the numbers are arranged in a certain order. In one place, a Question mark is given. Find out which one of the answers will replace the Question mark ?

16.

7	11	14
8	?	10
9	10	16
6	10	8

     1) 8   2) 10   3) 9   4) 11   5) 12

16. 3

17.

1) 49   2) 50   3) 48   4) 55   5) 60

17. 2

18.

1)5   2)7   3)4   4)6   5)8

18. 3
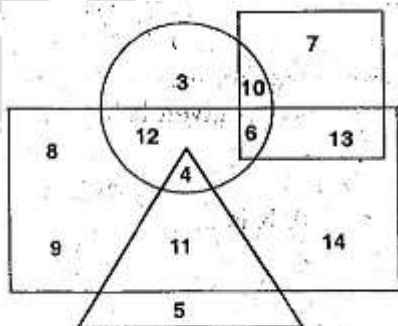
19.

1) 235   2) 141   3) 144   4) 188   5) 165

19. 4

20.

1)7   2)9   3)6   4)10   5)8

20. 4

Directions : Questions (21 to 25) : With the help of given diagram, answer the following Questions making the right choice from the given alternatives. Indicate the answer as e e instructions.

1) Rectangle represents Males
2) Triangle represents Educated
3) Circle represents Urban
4) Square represent Civil servants.

21. Who among the following is an , educated male, who is not an urban resident ?
1) 4   2) 5   3) 9   4) 11   5) 6

21. 4

22. Who among the following is neither a civil servant nor educated, but is urban and not a male ?
    1)2   2)3   3)6   4)10   5)5

22. 2

23. Who among the following is an educated male, who hails from urban area ?
    1)4   2)2   3)11   4)5   5)6

23. 1

24. Who among the following is uneducated and also an urban male ?
    1)2   2)3   3)11   4)12   5)5

24. 4

25. Who among the following is only a civil servant but neither a male nor urban oriented and uneducated ?
    1)7   2)8   3)9   4)14   5)6

25. 1

Directions Questions (26 to 30) Four alternatives are alike but one is different from others. Find out the different one and write its answer as per instruction.

26. 1) Nagpur   2) Varanasi   3) Mathura   4) Haridwar   5) Allahabad

26. 1

27. 1) 9416   2) 5202   3) 7128   4) 3236   5) 1572

27. 3

28. 1) Sociologist   2) Neurologist   3) Economist   4) Educationist   5) Psychologist

28. 2

29. 1) DJRT   2) CRVZ   3) HJNV   4) BFLR   5) HLXZ

29. 2

30. 1) BGL   2) FKP   3) AEI   4) CHM   5) DIN

30. 1

Directions : Questions (31 to 35) : Equations have become wrong due to wrong order of signs. Choose the correct order of signs from the five alternatives given under each Question, so that the equation becomes right. Write it in your answer as per instruction.

31. $6+3= 4\times22$
    1)×+=   2)+−+   3)=×−   4) +−=   5)+×+

31. 1

32. $12\div3 = 4\times11$
    1)++=   2)×−=   3)+−=   4)×=−   5)+=×

32. 3

33. 16**×**4+3= 7
 1)÷**×**=   2)−+=   3)+=−   4)+−=   5)÷+=

33. 5

34. 7÷3=8−13
 1)÷+=   2)**×**−=   3)÷=+   4)−+=   5)−**×**=

34. 2

35. 15−3**×**4 = 9
 1)+**×**=   2)**×**−=   3)+−=   4)÷+=   5)+÷=

35. 4

Directions : Questions (36 to 40) are based on letter series. In each Question, some letters are missing shown by (….). The missing letters are given in proper sequence as one of the five alternatives given under each Question. Find out the correct alternative.

36. A ….. BBC ……AAB………CCA……BBCC
 1) BACB   2) ABBA   3) CABA   4) AABC   5) ACBA

36. 5

37. BC…..B…..C……..B…..CCB
 1) BBCB   2) CBBC   3) CBCB   4) BCBC   5) CCBB

37. 3

38. C…..BBB……..ABBBB………ABBB………..
 1) BACBB   2) AABCB   3) ABACB   4) ABCCB   5) ABBCC

38. No Answer

39. C……….BCCD………..CCDB……….CDBCC……….BC
 1) DBCD   2) DBDD   3) BDAA   4) BDCD   5) DCBD

39. 1

40. BA…….B………..AAB………A……….B
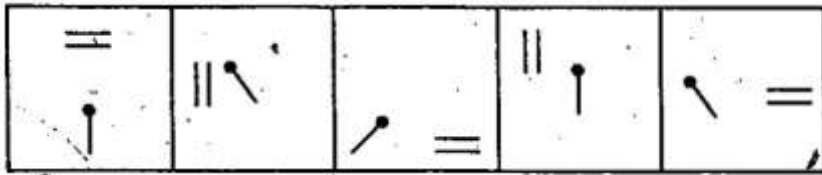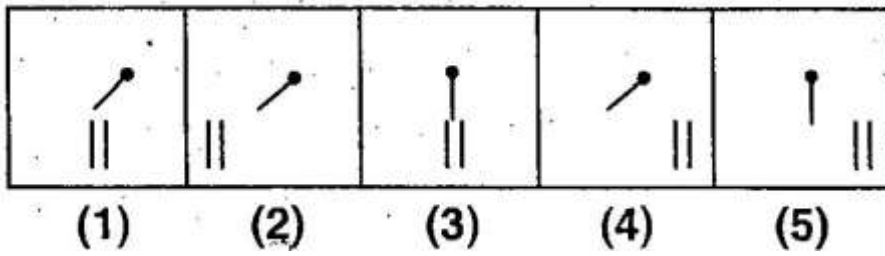 1) AABB   2) BABB   3) BAAB   4) ABBA   5) ABAA

40. 4

Directions : Questions (41 to 45) : In each of the following Questions given below, which among the five answer figures should be the sixth figure of the Problem figures to continue the sequence ?
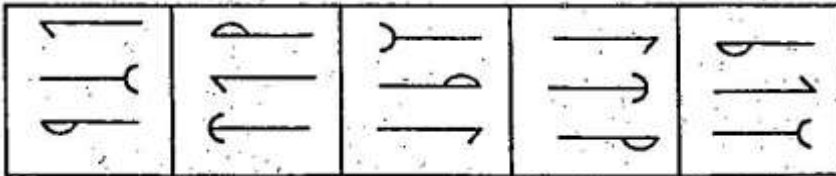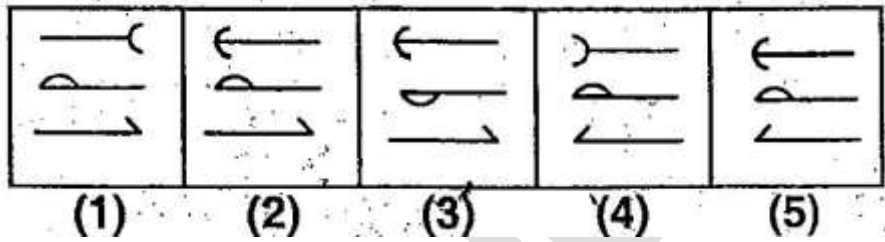
41. Problem Figures

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

41. 3

42.   Problem Figures

Answer Figures

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

42. 1

43.   Problem Figures

Answer Figures

(1)   **(2)**   **(3)**   **(4)**   **(5)**
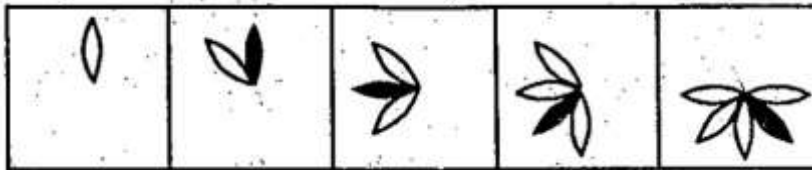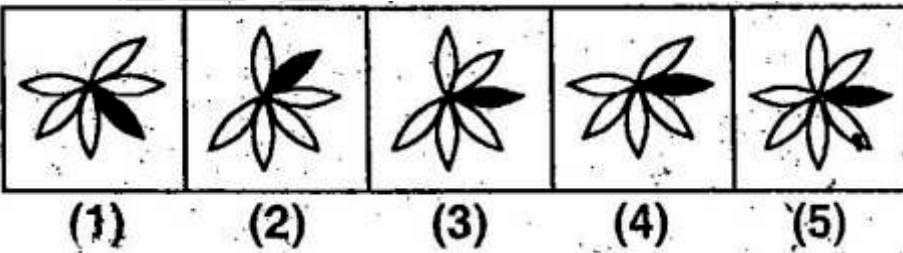
43. 4

44.   Problem Figures

Answer Figures

(1) (2) (3) (4) (5)
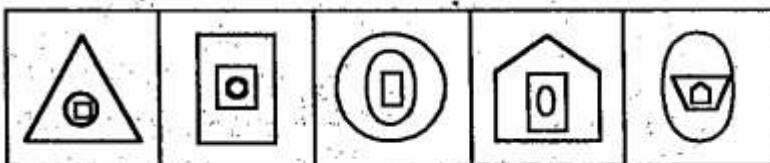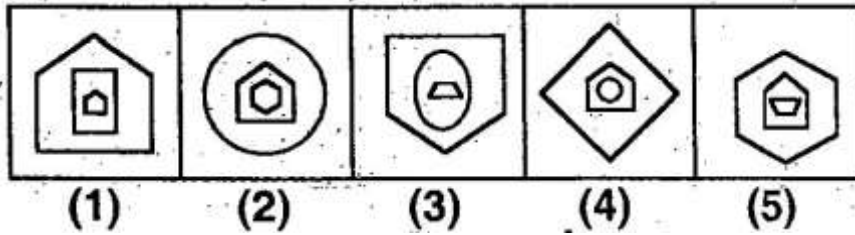
44. 1

45. Problem Figures

Answer Figures

(1) (2) (3) (4) (5)
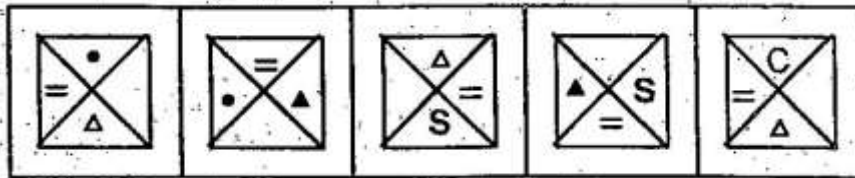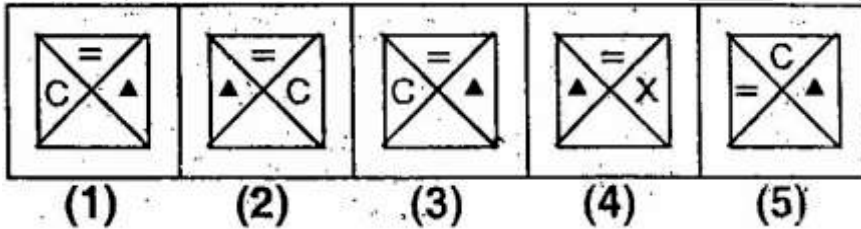
45. 1 or 3

Directions : Questions (46 to 50 : In each of the following questions, a selected pair of figures (unlettered) is followed by five lettered pair of figures. Out of these five, four have relationship similar to that in the original pair. Only one pair of figures does not have similar relationship. Select that pair of figures, which does not have a similar relationship that in the unlettered pair.

46. Problem Figures   Answer Figures

(1) (2) (3) (4) (5)
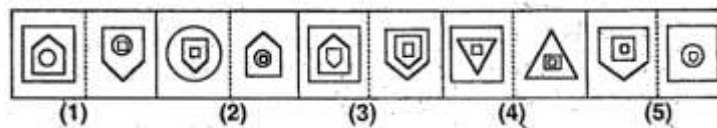
46. 2

47. Problem Figures   Answer Figures

(1) (2) (3) (4) (5)
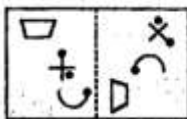
47. 4

48. Problem Figures   Answer Figures

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

48. 3

49. Problem Figures   Answer Figures
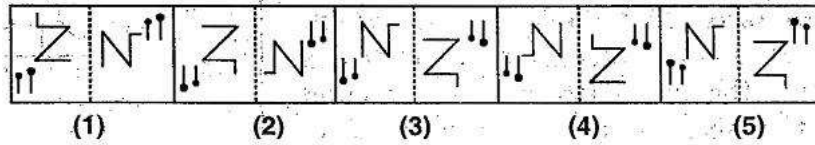

49. 3
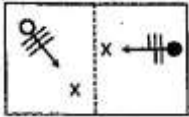
50. Problem Figures   Answer Figures
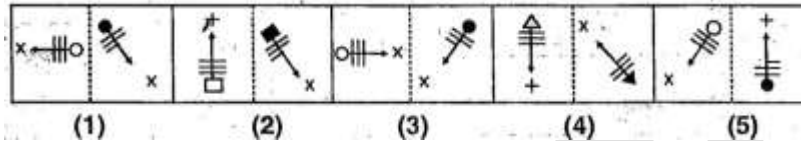
50. 1

English

Questions (51-55) : Read the following and answer the questions given after it.

  Observe the dilemma of the fungus; it is a plant, but it possesses no chlorophyll. While all other plants put the sun's energy to work for them

  Observe, the dilemma of the fungus; it is a plant, but it possesses no chlorophyll. While all other plants put the sun's 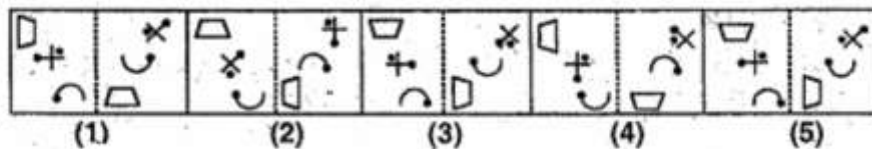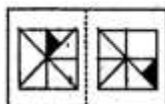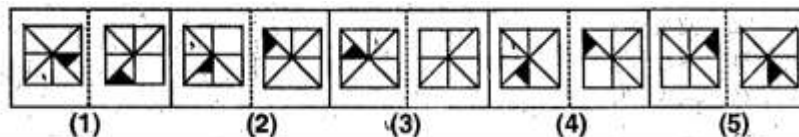energy to work for them combining the nutrients of ground and air into the body structure, the chlorophylless fungus must look elsewhere for an energy supply. If finds it in those other plants which, having received their energy free from the sun, relinquish it at some point in their cycle either, animals (like us humans) or to fungi.

  In, the search for, energy the fungus has become the earth's major source of rot and decay. Wherever you see mold forming on a piece of bread, or a pile of leaves turning to compost, or a blown-down tree becoming pulp on the ground, you are watching a fungus eating. Without fungus action the earth would be piled high with dead plant life of past centuries. In fact, certain plants which contain resins that are toxic to fungi will last indefinitely; specimens of the redwood; for instance, can still be found resting on the forest floor, centuries after having been blown down.

51. Which of the following words best describes the fungus as depicted in the passage?
  1) Unevolved 2) Sporadic 3) Toxic 4) Parasitic

51. 4

52. The passage states all the following about fungi EXCEPT ...
  1) They are responsible for the decomposition of much plant life.
  2) They, cannot live completely apart from other plants.
  3) They are poisonous to resin-producing plants.
  4) They are vastly different from other plants.

52. 3

53. The author's statement that "You are watching, a fungus eating" is best described as
    1) figurative   2) ironical   3) parenthetical   4) contradictory

53. 2

54. The author is, primarly, concerned with ………
    1) warning, people 'of the angers of fungi
    2) describing the actions of fungi.
    3) writing a humorous essay on fungi
    4) explaining the, long life of some redwoods.

54. 2

55. As per the passage which plants found resting on the forest floor for centuries.?
    1) fungi   2) rosewood   3) redwood   4) blown down plants

55. 3

Read the following passage.

A businessman recently had the most unlucky day's fishing. He was standing on a low bridge when he had the misfortune to' knock his tin of bait into the river. Leaning over the side of the bridge, he tried to hook the tin and pull it out of the river. As he did so, his car keys fell out of his pocket and disappeared in the water.

Feeling thoroughly annoyed with himself and his luck, the businessman lent over the bridge to try to see where his keys had gone. As he did so, the bridge collapsed and he fell into the river. This was the last straw. The businessman crawled out of the river went back to his car. There he discovered that he had locked, the doors of and could not get in. His anti-thief lock had immobilized his car. There was nothing left for him to, do but walk sadly home.

Answer the questions given below.

56. How did the tin of bait get into the river ?
    1) The passage does, not say
    2) It fell in when the bridge broke
    3) It fell in when the businessman fell in
    4) The businessman knocked it in accidentally.

56. 4

57. When did the businessman first lean' over the bridge ?
    1) When it broke   2) When the bait fell in.
    3) When his keys fell in.   4) When h, he could not get into his car.

57. 2

58. What was the last straw, according to the passage?
    1) Having to walk home.   2) Being unable to get into his car.
    3) The collapse of the bridge.   4) The loss of his bait.

58. 3

59. What does 'immobilized' mean in the passage ?
    1) destroyed.   2) improved the appearance of
    3) vaccinated   4) made it impossible to move.

59. 4

60. There was nothing left for him. This sentence shows that …….
   1) Everything was stolen   2) There was nothing on his left side
   3) There was no other alternative.   4) lie left nothing behind.

60. 3

Read the following Passage :

Long, long ago, in good, old merry England, there lived in a forest, near the town of Nottinghamshire, a man called Robin Hood. The forest was popularly known as Sherwood forest. He was a good Samaritan benefactor of the poor and the oppressed, robber to the rich. And he was an outlaw. His army comprised of only fifty men, and Robin Hood was so good with the bow and arrow that none could surpass his skill in archery. Needless to say that his men were all dropouts in life, but skilled in one vocation or the other. The villagers and the county folk loved Robin and his men very much. Nobody was ever disappointed or went empty handed, when he sought Robin's help. Surprisingly a man so good was a robber and outlaw. It all happened like this.

Answer the questions below

61. The forest mentioned in the passage was near …………
   1) England   2) Sherwood forest   3) Nottinghamshire   4) A town

61. 3

62. Robin Hood ……………
   1) fought with the oppressed.   2) was a rich man.
   3) took benefits away from the poor.   4) was a benefactor of the poor.

62. 4

63. 'Outlaw' means the one who ......
   1) works within the law   2) respects the law.
   3) obeys the law.   4) works against the law.

63. 4

64. Whoever sought Robin's help ……….
   1) went empty-handed   2) was ever disappointed
   3) received it   4) was surprised.

64. 3

65. The surprising thing was ………
   1) that Robin Hood was an outlaw.   2) that Robin Hood was a robber.
   3) that a man so good 'was a robber.   4) that the man was benefactor of the poor.

65. 2

Directions : Questions (66 – 71) : In the following passage, there are some numbered blanks. Fill in the blanks by selecting the most appropriate word for each blank from the given options.

Paula Dixon was on her way to Hongkong airport when she involved in a road …. (66). She was more seriously …(67) then she ……..(68) at first. Soon after her plane took ……. (69), she felt ill and the cabin staff asked if there were any doctors on board. Professor Wallace and Dr. Wong came forward, and performed an emergency …… (70) on a bottle of mineral water, some brandly and a knife and fork.
In fact, they ….. (71) her life, and Mrs Dixon is extremely grateful to them.

66. 1) episode   2) accident   3) happening   4) event

66. 2

67.   1) injured   2) damaged   3) insured   4) wrecked

67. 1

68.   1) expected   2) assessed   3) experienced   4) realized

68. 1

69.   1) away   2) off   3) up   4) out

69. 2

70.   1) operation   2) surgery   3) treatment   4) cut

70. 2

71.   1) spared   2) rescued   3) saved   4) kept

71. 3

Questions (72 & 73) : The following sentences come from a paragraph. The first and the last sentences, are given. Choose the order in which the three sentences (PQR) should appear to complete the paragraph.

72. S_1 − Even today many countries women continue to be

    S_2 − ……………..

    S_3 − ……………..

    S_4 − ……………..

    S_5 − educational and vocational training.

    (P) neglected and there are far

    (Q) who had the benefit of

    (R) fewer women than in6n Choose from the options given below :

    Choose from the options given below :

    1) PQR   2) PRQ   3) QRP   4) RQP

72. 2

73. S_1 − Science improves our living conditions, but

    S_2 − ……………..

    S_3 − ……………..

    S_4 − ……………..

    S_5 − rejecting or accepting anything, provided there are sufficient reasons for doing so.

    (P) not be afraid of

    (Q) teach us to think straight

    (R) it should also

    Choose from the options given below :

    1) RQP   2) PQR   3) RPQ   4) QRP

73. 1

For each of the following groups of four words, find the incorrectly spelt word

74.   1) apparent   2) pleasent   3) different   4) independent

74. 2

75. 1) exceeding   2) succeeding   3) proceeding   4) preceeding

75. 4

76. 1) occasion   2) accountant   3) neccessary   4) accident

76. 3

77. 1) importance   2) insistance   3) appearance   4) tolerance

77. 2

Directions : Questions (78 - 85) : Select the most appropriate option to fill in the blanks from the given alternatives

78. I'm afraid I have a …………. memory for faces.
     1) weak   2) light   3) poor   4) thin

78. 3

79. She seems to have a natural ………. for drawing.
     1) hand   2) gift   3) present   4) art

79. 1

80. I didn't ……. to sleep until after two this morning.
     1) turn   2) put   3) fall   4) get

80. 4

81. There is little to .... between the two films in terms of entertainment value.
     1) decide   2) choose   3) seperate   4) divide

81. 2

82. There wasn't a ………. of truth in what he said.
     1) ray   2) lump   3) grain   4) pinch

82. 3

83. Only a small ……… of volunteers turned up to help.
     1) armful   2) handful   3) fistful   4) houseful

83. 2

84. Train travel works out considerably cheaper, if you buy a monthly …….. ticket.
     1) periodical   2) overtime   3) season   4) prize

84. 3

85. He didn't have a ……… of evidence to support his claims.
     1) sign   2) scrap   3) sense   4) state

85. 1

Choose the one which best express the meaning of the given phrase.

86. break down
   1) fail   2) very low   3) appropriate   4) to cross

86. 1

87. call on
   1) worry   2) please   3) irritate   4) pay a brief visit

87. 4

88. hold by
   1) touched   2) read quickly   3) destroyed   4) catch hold of

88. 4

89. set forth
   1) explain   2) open   3) country   4) forth number

89. 2

90. give up
   1) postponed   2) adopted   3) abondon   4) amended

90. 3

Directions : Questions (91 - 95) : Select the word which means the same of the given words.

91. Abeyance
   1) obedience   2) discussion   3) suspended action   4) excitement

91. 3

92. Abysmal
   1) bottomless   2) eternal   3) diabolic   4) internal

92. 1

93. Candid
   1) vague   2) outspoken   3) experienced   4) anxious

93. 2

94. Chaste
   1) pure   2) loyal   3) timid   4) curt

94. 1

95. Infirmity
   1) age   2) hospital   3) disability   4) inoculation

95. 3

Directions : Questions (96 - 100) : Select the word which means the opposite of the given words.

96. MODESTY
   1) reserve   2) boldness   3) mindless   4) humility

96. 2

97. ACQUITTED
     1) entrusted   2) convicted   3) burdened   4) freed

97. 2

98. COMPLIMENT
     1) praise   2) applaud   3) insult   4) thank

98. 3

99. VIRTUOUS
     1) vicious   2) vulger   3) miserly   4) insincere

99. 3

100. EXTRAVAGANT
      1) wonderful   2) developing   3) disappearing   4) economical

100. 4

-- ROUGH WORK --

PART- III

APTITUDE TEST (Q. Nos. 101 to 200)

Max. Marks - 1000

Note:

i. Subjects, Questions S1.No. and Marks allotted:

1. Physics	101 to 113 Questions	13 Marks
2. Chemistry	114 to 126 Questions	13 Marks
3. Biology	127 to 140 Questions	14 Marks
4. Mathematics	141 to 160 Questions	20 Marks
5. History	161 to 175 Questions	15 Marks
6. Geography	176 to 190 Questions	15 Marks
7. Political Science	191 to 195 Questions	05 Marks
8. Economics	196 to 200 Questions	05 Marks

PHYSICS

101. A balloon is moving up from the ground in such a way that its acceleration is linearly decreasing with its height above the ground. It starts from the ground with acceleration 4 m/s^2 and with zero initial velocity. Its acceleration becomes zero at a height 3 m. The speed of the balloon at a height 1.5 m is ……..
    1) 4 m/s   2) 8 m/s   3) 6 m/s   4) 3 m/s

101. 4

102. An electric bulb rated for 500 W at 100 V is used in a circuit having a 200 V supply. The resistance 'R' that must be kept in series with the bulb so that the bulb draws 500 W is ….
    1) 30Ω   2) 5Ω   3) 10Ω   4) 20Ω

102. 4

103. A light particle moving horizontally with a speed 12 m/s strikes a very heavy block moving in the same direction at 10 m/s. The collision is one dimensional and elastic. In elastic collision, the conservation of momentum and conservation of kinetic energy are valid. After the collision, the particle will ……
    1) move at 12 m/s opposite to its original direction
    2) move at 8 m/s in its original direction
    3) move at 8 m/s opposite to its original direction
    4) move at 2 m/s in its original direction.

103. 2

104. A Converging bundle of light rays in thee shape of cone with a vertex angle of 45° falls on a circular diaphragm of 20 cm diameter. A lens with power 5D is fixed in the diaphragm. Diameter of face of lens is equal to that of diaphragm. If the vertex angle of new cone is θ, then tan θ = …………
    1) 1.5   2) 2   3) 3   4)√ 3

104. 1

105. A train can accelerate at 20 cm/s^2 and decelerate at 100 cm/s^2. Then the minimum time for the train to travel between the stations 2 km apart is …… (The train should start at one station and stop at another station)
1) 125 s   2) 100 s   3) 155 s   4) 200 s

105. 3

106. An air bubble with a radius IV and an iron ball of same radius are present in water. The distance between the centers of bubble and iron ball is 1 m. Neglect the mass of air in the bubble. The mass of water drop whose size is equal to the size of bubble is 1.5 kg. The densities of water and iron are 1 gm/cm^3 and 8 gm/cm^3 respectively. The force between bubble and iron ball is ………(approximately)
1) repulsive, equal to 2.2×10^{-9} N   2) attractive, equal to 1.1×10^{-9} N
3) repulsive, equal to 1.1×10^{-9} N   4) attractive, equal to 2.2×10^{-9} N

106. 3

107. A uniform wire of resistance 100Ω is melted and made in the form of uniform wire, whose length is double that of the original. The resistance of the new wire is
1) $200\sqrt{2}$Ω   2) 800Ω   3) 200Ω   4) 400Ω

107. 4

108. A circular coil of radius 5 cm is placed in a uniform magnetic field of 0.07 T, so that the direction of magnetic field is normal, to the plane of the coil. If an emf of 1.1 V is induced in it as a result of its rotation through 180° in 0.14 seconds, the number of turns in the coil is …….
1) 70   2) 80   3) 140   4) 160

108. 3

109. A calorimeter contains ice. The energy of 500 calories is required, to heat the system from 270 K to 272 K and energy of 16600 calories is required to heat that system from 272 K to 274 K. The heat capacity is defined as the product of mass of the object and its specific heat. The specific heat of ice is 0.5 cal/gram-K. The heat capacity of calorimeter is ....
1) 150 cal/K   2) 100 cal/K   3) 120 cal/K   4) 180 cal/K

109. 1

110. A point source is located at a distance of 20 cm from the front surface of a glass bi-convex lens. The lens has a thickness of 5 cm and radius of curvature of it's surfaces is 5 cm. The refractive index of glass is 1.5. The distance of image formed by it from the rear surface of this lens is ………. (approximately)
1) 9.2 cm   2) 6.3 cm   3) 5.7 cm   4) 4 cm

110. 4

111. A piece of wood floats in water kept in beaker. If the beaker moves with a vertical acceleration 'a', the wood will ………..
1) remain in the same position relative to the water surface
2) sink deeper in the liquid, if 'a' is downward with $a < g$
3) sink deeper the liquid, if 'a' is upward
4) come out, more from the liquid, if 'a' is downward with $a < g$

111. 1

112. A Car of length 3 in moves at a constant velocity 36km/hr. A man wants to take a photo of side view of the car. The size of the image of the car is 1.5 cm long. The time of exposure needed for the car to get a clear picture, if the image should not Move more than.0.1 mm, is ......
1) 1.5×10^{-3} S 2) 3×10^{-3} S 3) 2.8×10^{-3} S 4) 2×10^{-3} S

112. 4

113. A voltage of 3.6 V is applied to the ends of steel conductor of length 20 m. The resistivity of steel is 1.2×10^{-7} $\Omega - m$ and charge of electron is 1.6×10^{-19} C. If the conductor has a number density 4×10^{28} electrons/m^3, the drift speed of electron is ....
1) 4.1×10^{-5} m/s 2) 2.34×10^{-4} m/s 3) 1.63×10^{-4} m/s 4) 3.24×10^{-4} m/s

113. 2

CHEMISTRY

114. A special technique used now a days for seperation and identification of the constituents in a mixture is chromatography.

The principle is based on difference in adsorption of constituents of a mixture by a surface of an appropriate adsorbent material or solid medium (stationary) phase. The rate of adsorption of la, particular constituent depends upon its solubility in the solvent.

Following diagram shows a chrornatograph obtained for Black ink.
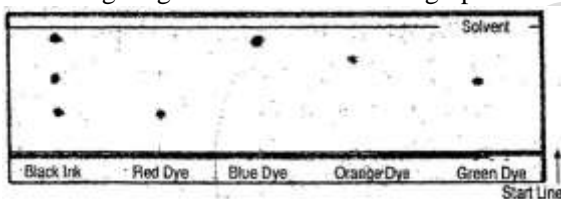
Answer the following question.
1) Pure substance
2) Combination of four different dyes
3) Contains orange and blue dyes
4) Contains red, blue and green dyes

114. 2

115. A sample of Ascorbic acid (vitamin C) is synthesized in the laboratory; it contains 1.50 g of Carbon and 2.00 g Oxygen. Another sample of Ascorbic acid isolated from citrus fruits contains 6.35 g of Carbon. How many grams of Oxygen toes it contain ? Which law do you assume in answering this question ?
1) 7.25 : Law of conservation of mass
2) 6.35: Law of definite proportions
3) 8.47 : Law of definite proportions
4) 6.35: Law of multiple proportions

115. 3

116. Which of the following is Reduction reaction ?
1) Bleaching of coloured objects using moist Chlorine
2) Rancidity of fats
3) Thermite process involving the reaction of Chromium oxide (or) Iron oxide with alumini
4) The poling process involving the removal of impurities from a molten metal.

116. 3

117. The value of 'X' in $K_2 Al_2 (SO_4)_x \cdot 24 H_2 O$ is ....
1) 1 2) 2 3) 3 4) 4

117. 4

118. Identify the type of reaction for each of the following
as Combination – (p)

Decomposition – (q)
Displacement – (r)
Double displacement –
(s) or Combustion – (t)
(i) A compound breaks apart into its elements
(ii) A metal and a non-metal react to form an ionic compound.
(iii) A compound of Hydrogen and Carbon reacts with Oxygen to produce Carbon-dioxide and water
(iv) Silver ion from $Ag(NO_3)$ (aq.) forms a precipitate with bromide ion from KBr aq.

1) (i) – q (ii) – p (iii) – r (iv) - s   2)(i) – q (ii) – p (iii) – t (iv) - s
3) (i) – s (ii) – r (iii) – q (iv) - p   4)(i) – p (ii) – t (iii) – q (iv) – r

118. 2

119. In which of the following electrovalent compound both cation and anion represent the same inert gas configuration ?
1) Calcium bromide.   2)Magnesium chloride
3) Strontium oxide   4)Potassium sulphide

119. 4

120. Which of the following acid molecule differ from other molecules regarding their total number of valence electrons ?

1) $HClO_4$ 2) $H_3 PO_4$ 3) HNO_3 4) $H_2 SO_4$

120. 3

121. Periodicity in the properties of elements in modern periodic table is due to :
1) A regular increase in atomic weight of elements.
2) Periodicity in the electronic configuration of atom of elements.
3) Successive increase in the atomic number of elements.
4) Existence of families of elements.

121. 2

122. X, Y and Z are the three elements, each one belongs to any one of the groups IA, IIIA and VA. The oxide of X is amphoteric, the oxide of Y is highly acidic, and the oxide of Z is highly basic.

	X	Y	Z
1)	VA	IA	IIIA
2)	IA	VA	IIIA
3)	IIIA	IA	VA
4)	IIIA	VA	IA

122. 3

123. How many orbitals can have the following set of quantum numbers :

$n = 3, l = 2, m_l = -2$
1)1   2)8   3)2   4)4

123. 2

124. While roaming in a parallel universe, you discover the hypothetical element 'X'. You obtain a representative sample of the element and discover that it is made up of three isotopes, X-48, X-52, X-54. To help your science team, calculate the atomic mass of the substance. You send the following drawing of your sample with you report.
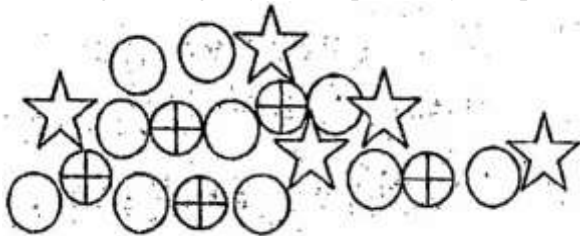
In the report you also inform the science team that the circular ;atoms are X-48, star atoms are X-52 and the remaining crossed circular atoms are X-54. What is the average atomic mass of X ?

1) 50.5   2) 51.5   3) 52.5   4) 53.5

124. 1

125. Nature of a solution depends on its H_3O^+ , but pH notation is used to express the nature of solution because :

1) H_3O^+ value is very high in order to express it as simple number

2) H_3O^+ and OH^- values are same to overcome confusion.

3) H_3O^+ value is extremely small, in order to express the nature of solution as a simple whole number

4) None of the above

125. 3

126. Which of the following is not an allotrope of Carbon ?

1) Diamond.   2)Buckminster fullerence
3) Micelle   4)Graphite.

126. 3

BIOLOGY

127. Decrease of vitamin C and Carotene content in vegetables and fruits is due to ....

1)Excess Potassium content in soil.   2)Excess Phosphate content in soil.
3)Less Nitrogen content in soil.   4)Less Potassium content in soil.

127. 1

128. Navya observed one slide through the microscope. In it, almost the entire cell space was occupied by vacuole. What would it be ?

1) Animal cell   2) Amoeba   3) Mature plant cell   4) Non living cell

128. 3

129. Read the. Following

(A) Nerve cells do not have the ability of regeneration
(B) Nerve cells are one kind of muscle tissue.
(C) No two nerve cells have same appearance.
(D) Nervous tissue, is a fluid tissue.
Which of the following is true ?

1) A and B   2) C and D   3) A and C   4) B and D

129. 3

130. Some plants do not have broad leaves. Leaves are reduced to spines in some plants. Those plants belong to ....
   1) Hydrophytes   2) Mesophytes   3) Marine plants   4) Xerophytes

130. 4

131. Function of Lenticels in plant is ...
   1) Photosynthesis   2) Excretion   3) Respiration   4) Coordination

131. 3

132. Match the items in Column – I with Column – II

Column-I	Column-II
(A) Riboflavin	(i) Anemia
(B) Folic acid	(ii) Scurvy
(C) Retinol	(iii) Glossitis
(D) Ascorbic acid	(iv) Night blindness

   Select the correct matching
   1) A-(iii), B-(i), C-(iv), D-(ii)   2) A-(iv), B-(i), C-(ii), D-(iii)
   3) A-(iii), B-(iv), C-(i), D-(ii)   4) A-(ii), B-(i), C-(iv), D-(iii)

132. 1

133. Blood flows from legs to heart through the veins against the gravity. How is it possible ?
   1) Thickness of vein's wall   2) Less rigid walls of veins
   3) Valves in the veins   4) Rigid walls of veins.

133. 3

134. 'Uremia' is related to ....
   1) Uterus   2) Kidney   3) Lungs   4) Umbilical cord

134. 2

135. Growth of pollen tubes towards ovule for 'fertilization is due to ....
   1) Thigmotropism 2) Phototropism   3) Chemotropism   4) Hydrotropism

135. 3

136. If you want to produce plants like orange, grape, rose for commercial purpose, which method do you choose.?
   1) Cutting   2) Grafting   3) Tissue culture   4) Layering

136. 1

137. Choose the incorrect statement about Darwinism.
   1) Nature only selects which organism should. survive.
   2) Survival of the fittest.
   3) Inheritance of acquired characters.
   4) Variations are passed from parent to off-springs through heredity.

137. 3

138. In the given figure, various trophic levels are shown in the form of pyramid. At which trophic level the minimum energy is available ?
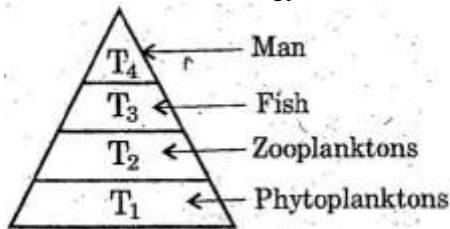
1) Phytoplanktons 2) Man   3) Fish   4) Zooplankton

138. 2

139. The three It's, which can, help us to conserve natural resources for future generation are
   1) Reduce, Regenerate, Redistribute.   2) Reduce, Recycle, Regenerate.
   3) Reduce, Reuse, Recycle.   4) Redistribute, Regenerate, Recycle.

139. 3

140. It is important to make, small check darns across the flooded gullies. Because they ....
   (A) Hold water for, drinking.
   (B) Hold water and prevent soil erosion.
   (C) Recharge ground water.
   (D) Hold water permanently.
   Choose the correct answer :
   1) A and B   2) B and C   3) C and D   4) A and D

140. 2

MATHEMATICS

141. The sum of the co-efficients of $f(x)$, if $(16 x_{16} - 11x + 2) f(x) = 2016 \cdot x_{2015}$ is ………
   1) 143   2) 288   3) 146   4) 165

141. 2

142. If $4^{18} - 1 = 687194a6735$, then the value of a is …….
   1) 6   2) 3   3) 7   4) 5

142. 3

143. If $xyz + xy + xz + yz + x + y + z = 384$, where x, y, z are positive integers, then find the value of $x + y + z$.
   1) 20   2) 17   3) 25   4) 15

143. 1

144. If $x = (123456789)(76543211) + (23456789)^2$, then find the number of zeros in $\sqrt[4]{x}$?
   1) 3   2) 4   3) 5   4) 1

144. 2

145. Express $1 - \dfrac{1}{\sqrt{1+31\sqrt{3}}} + \dfrac{1}{1+31\sqrt{3}}$ in the form $a + b\sqrt{3}$, where a and b are rational numbers, thent he

values of a and b are ……..

1) 1,2　　　　　2) 1, −1　　　　　3) 3,1　　　　　4) 2,1

145. 2

146. In the right-angled triangle shown $MB + MA = BC + AC$. If $BC = 8$ and $AC = 10$, then the value of MB is …………
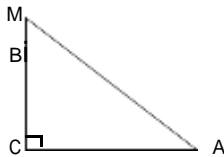
1) $\dfrac{27}{15}$　　　　　2) $\dfrac{40}{13}$　　　　　3) 3　　　　　4) $\dfrac{15}{7}$

146. 2

147. If $x^2 + 2x + 5$ is a factor of $x^4 + Px^2 + Q$, then the value of $P + Q$ is ………..

1) 18　　　　　2) 25　　　　　3) 31　　　　　4) 28

147. 3

148. The altitude of a triangle are 12, 15 and 20. What is the measure of the largest angle in this triangle ?

1) 90°　　　　　2) 60°　　　　　3) 45°　　　　　4) 72°

148. 1

149. The sum of eleven consecutive integers is 2002. What is the smallest of these integers ?

1) 163　　　　　2) 177　　　　　3) 145　　　　　4) 156

149. 2

150. If $\left(a + b + c + d + e + f + g + h + i \right)^2$ is expanded and simplified, how many different terms are in the final answer ?

1) 45　　　　　2) 36　　　　　3) 42　　　　　4) 28

150. 1

151. Three squares have the dimension indicated in the diameter. What is the area of shaded Quadrilateral ?
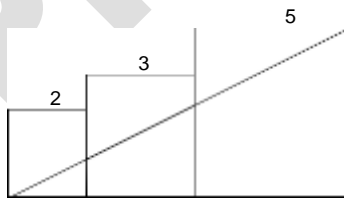
1) 4.5　　　　　2) $\dfrac{16}{7}$　　　　　3) $\dfrac{21}{4}$　　　　　4) 3.6

151. 3

152. The G.C.D. of the numbers $2^{100} - 1$ and $2^{120} - 1$ is ......
   1) $2^{60} - 1$ 2) $2^{20} - 1$ 3) 2^{20} 4) 2^{10}

152. 2

153. The height of an isosceles triangle is 6 cm, the perimeter of the triangle is 36 cm. Then the area of the triangle (in cm^2) is ....
   1) 36   2) 48   3) 52   4) 64

153. 2

154. The roots of $x^3 + 3x^2 + 4x - 11 = 0$ are a, b and c; and that the roots of $x^3 + rx^2 + sx + t = 0$ are $a + b$, $b + c$ and $c + a$, then the value of t is ....
   1) 23   2) 25   3) 20   4) 18

154. 1

155. If $\sec x + \tan x = \dfrac{22}{7}$ and $\operatorname{cosec} x + \cot x = \dfrac{m}{n}$, where $\dfrac{m}{n}$ is in lowest terms, then the value of $m + n$ is ....
   1) 22   2) 33   3) 44   4) 11

155. 3

156. The first term of a sequence is 2005. Each succeeding term is the sum of the cubes of the digits of the previous term. What is the 2005th term of the sequence ?
   1) 250   2) 125   3) 175   4) 100

156. 1

157. If $4^{x_1} = 5, 5^{x_2} = 6, 6^{x_3} = 7,....., 127^{x_{124}} = 128$, what is the value of $x_1 \cdot x_2 \cdot x_3 ....x_{124}$?
   1) 2   2) $\dfrac{5}{2}$ 3) 3   4) $\dfrac{7}{2}$

157. 4

158. In a triangle ABC, $3\sin A + 4\cos B = 6$ and $4\sin B + 3\cos A = 1$, then $\angle C$ in degrees is ......
   1) 30°   2) 60°   3) 90°   4) 125°

158. 1

159. The sum of the digits in $\left(10^{4n_2+8} + 1\right)^2$, where n is a positive integer, is ....
   1) 4   2) $4n$ 3) $2 + 2n$ 4) $4n^2$

159. 1

160. A regular hexagon overlap is formed by placing two congruent equilateral triangles on the top of each other. If the area of each triangle is 27 cm^2, then the area of the hexagon is
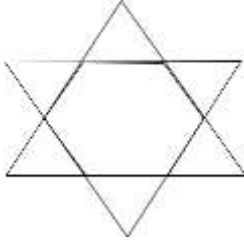
| 1) 20 cm^2 | 2) 18 cm^2 | 3) 16 cm^2 | 4) 15 cm^2 |

160. 2

HISTORY

161. Who was the founder of "Hoa Hao" movement in Mekong delta region ?
    1) Phan Boi   2) Liang Qichao   3) Huynh Phu So   4) Ho Chi Minh

161. 3

162. Who was the viceroy of India in 1930 at the time of Civil Disobedience Movement ?
    1) Lord Irwin   2) Montague   3) Willingdon   4) Minto

162. 1

163. Find out the false statement.
    1) At the beginning of 20th century, disparity across the world was marked by west and rest.

    2) After the first world war, many countries changed over from monarchy rule to democracies.

    3) Socialist societies wanted: to build on the idea of equality and fraternity.

    4) Army members of countries fighting belonged to many different countries and not just those which directly participated in the war.

163. 4

164. Who painted the famous image of Bharat Mata during Swadesi movement in 1905 ?
    1) Bakim Chandra Chottopadhaya   2) Abonindranath Tagore
    3) Rabindranath Tagore   4) Natesha Sastri.

164. 2

165. Which group demanded a New International Economic Order [NIEO] ?
    1) Group of 77 (G-77)   2) SAARC countries
    3) Group of 8 (G-8)   4) All the above

165. 2

166. Who among the following is not related to Stearn Engine ?
    1) New Comen   2) James Watt   3) James Hargreaves   4) Mathew Boulton

166. 3

167. "Inquisition" means …….
    1) Action, speech or writing that is seen as opposing the government.
    2) A former Roman Catholic Court for identifying and punishing heretics.
    3) A parchment made from the skin of animals.
    4) A sixteenth - century movement to reform the Catholic Church dominated by Rome.

167. 2

168. The newspaper "Sambad Kaumudi" was published by ....
   1) Gangadhar Bhattacharya
   2) Ram Mohan Roy
   3) Keshav Chandra Sen
   4) Rabindranath Tagore

168. 2

169. Who wrote the novel Pariksha-Guru ?
   1) Bharatendu Harischandra
   2) Srinivas Das
   3) Devaki Nandan
   4) Chandu Menon

169. 2

170. Who are referred as Bretton Woods Twins ?
   1) United Nations Organisation (UNO) and International Monetary Fund (IMF).
   2) International Monetary Fund (IMF) and United Nations Children Emergency Fund (UNICEF).
   3) International Monetary Fund (IMF) and International Bank for Reconstruction and Development (IBRD).
   4) International Bank for Reconstruction and Development (IBRD) and United Nations Organisation (UNO).

170. 3

171. Who introduced the reign of terror ?
   1) Mirabeau
   2) Napoleon Bonaparte
   3) John Locke
   4) Maximillien Robespirre

171. 4

172. Who implements the collective farms (Kolkhoz) ?
   1) Stalin   2) Lenin   3) Tsar Nicholas II.   4) Karl Max

172. 1

173. Find the wrongly matched.
   1) Genocide - Nazi mass killing.
   2) Euthanasia - Nazi method of killing a disabled.
   3) Concentration Camp - A place where people were isolated and detained without due process of law.
   4) None of the above.

173. 4

174. In which state of India, do the Gujjar- Bakarwals live ?
   1) Jammu and Kashmir
   2) Rajasthan
   3) Madhya Pradesh
   4) Kerala

174. 1

175. Find the wrongly matched.
   1) Sun Yat-sen - Nationalism, Democracy and Socialism
   2) Chian Kaishek - Militarised the nation
   3) Mao Zedong – Long March
   4) Ken Saro Wiwa – Peasant Revolution.

175. 4

GEOGRAPHY

176. In India, which type of forest among the following occupies the largest area ?
   1) Mountain wet temperature forest
   2) Sub – tropical dry evergreen forest
   3) Tropical moist deciduous forest.
   4) Tropical evergreen forest.

176. 3

177. Black soils in India form in this region.
   1) Upper Gondwana region.
   2) Deccan Traps.
   3) Bundelkhand.
   4) West coastal plains.

177. 2

178. Taxol, a chemical mpound is prepared from a medical plant "Himalayan Yew" [Taxus wallachiana]. This Taxol is used to treat this disease.
   1) Cancer   2) Dengue   3) Filaria   4) Psoriasis

178. 1

179. Which of the following statements is not correct ?
   1) Project Tiger was launched in 1973.
   2) There are 27 Tiger Reserves all over the country.
   3) By 1993, the population of tigers dropped at 3,600
   4) Manas Tiger Reserve is located at Uttaranchal

179. 4

180. Kota Barrage is built across this river.
   1) Penganga   2) Hirakud   3) Beas   4) Chambal

180. 4

181. Which of these is not a Rabi crop ?
   1) Maize   2) Mustard   3) Peas   4) Barley

181. 1

182. Which of the following crop requires less water ?
   1) Wheat   2) Rice   3) Sugarcane   4) Rubber

182. 1

183. Which of the following is wrong related to Bailadila Range ?
   1) High grade Hematites are found in Bailadila range.
   2) Bailadila range is located in Chattisgarh.
   3) Iron ore from these mines is exported to Japan and South Korea via Kolkata port.
   4) None of the above.

183. 4

184. Which one of the following minerals is formed by decomposition of rocks, leaving a residual mass of weathered material ?
   1) Coal   2) Bauxite   3) Gold   4) Copper

184. 2

185. Which one of the following ports is a Tidal port in the West Coast ?
   1) Kandla   2) Marmagao   3) New Mangalore   4) Kochi

185. 1

186. Which one of the following is the latitudinal extent of India ?
    1) $8°4' N - 32°27' N$
    2) $8°4' S - 37°6' N$
    3) $8°4 ' N - 37°6 ' N$
    4) $68°7° E - 97°25° E$

186. 3

187. The highest peak in Peninsular plateau is ……..
    1) Anaimudi   2) Doda Betta   3) Guru Shikhar   4) Mahendragiri

187. 1

188. Which of the following coast receives rainfall during winter ?
    1) Konkan coast   2) Malabar coast   3) Coromandal coast   4) None of the above

188. 3

189. What is the reason for rainfall in North India during winter ?
    1) Advancing Monsoon   2) Western Disturbances
    3) Kal - Baisakhis   4) All of the above

189. 2

190. What is river Brahmaputra known in Tibet ?
    1) Tsong po   2) Jamuna   3) Padma   4) Pinakini

190. 1

POLITICAL SCIENCE

191. Which party has been, in power in West Bengal without a break for 30 years ?
    1) Communist Party of India (CPI).   2) Communist Party of Marxist (CPI - M)
    3) Nationalist Congress Party.   4) Trinamool Congress.

191. 2

192. When was the National Human Rights Commission (NHRC) set up ?
    1) 1953   2) 1983   3) 1993   4) 2003

192. 3

193. This subject is not in the State list.
    1) Police   2) Irrigation   3) Forest   4) Agriculture

193. 3

194. Which of these is not a good reason to say that Indian elections are democratic ?
    1) India has the largest number of voters in the world.
    2) India's Election Commission is very powerful.
    3) In India, every one above the age of 18 has a right to vote.
    4) In India, the losing parties accept the electoral verdict.

194. 1

195. Who among the following is a part of the political executive ?
    1) District Collector.   2) Secretary of the Ministry of Home Affairs.
    3) Home Minister   4) Director General of Police.

195. 3

ECONOMICS

196. Match list-A with list-B and select the correct answers using the codes given below the lists

'A'	'B'
(A) Human Development Report	(i) Government of India
(B) Economic Survey	(ii) World Bank
(C) World Development Indicators	(iii) United Nations Development Programme
(D) Hand Book of Statistics on Indian Economics	(iv) Reserve Bank

1) A – (iv); B – (ii); C – (iii); D – (i)   2) A – (iii); B – (iv); C – (i); D – (ii)
3) A – (i); B – (iv); C – (iii); D – (ii)   4) A – (iii); B – (i); C – (ii); D – (iv)

196. 4

197. Under employment occurs, when people
   1) do not want to work.   2) are working in a lazy manner.
   3) are working less than what they are capable of doing.
   4) are not paid for their work.

197. 3

198. "National Consumer's Day" is observed on ....
   1) December 4th.   2) December 24th.   3) January 4th.   4) January 24th.

198. 2

199. 'Antyodaya Anna Yojana' was launched in the year ....
   1) 2000   2) 2004   3) 2006   4) 2008

199. 1

200. This type of unemployment is found mostly in urban areas -
   1) Seasonal unemployment.   2) Disguised unemployment.
   3) Educated unemployment   4) All the above.

200. 3