NTSE STG1 – 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 a HB pencil. Read the Instructions printed on the OMR Sheet carefully before answering the questions.

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 the 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 blank 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 the 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 the completion of the examination. No candidate should leave the examination hail before the end of the examination.

PART I
MENTAL ABILITY (Q. No. 1 – 50)

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

Directions:
Questions (1 to 5): In the number series given below, one number is missing. Each series is followed by five alternatives (1), (2), (3), (4) and (5). One of them is the right answer. Identify and indicate it as per the "Instructions".

1.   2, 7, 14, 23, …….., 47
    (1) 31   (2) 28   (3) 34   (4) 38   (5) 35

2.   4, 6, 12, 14, 28, 30, …………
    (1) 32   (2) 64   (3) 62   (4) 60   (5) 48

3.   11, 13, 17, 19, 23, 29, 31, 37, 41, …………
    (1) 43   (2) 47   (3) 51   (4) 53   (5) 59

4.   15, 31, 63, 127, 255, …………
    (1) 513   (2) 511   (3) 523   (4) 517   (5) 515

5.   14, 26, 50, 98, …………
    (1) 78   (2) 194   (3) 196   (4) 190   (5) 148

Directions:
Questions (6 to 10): These questions are based on letter analogy. There are two pairs of letter combinations in each question. The first (left hand 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 "Instructions".

6.   ABCD: WXYZ : : EFGH : ……?.......
    (1) STUV   (2) STVU   (3) VUTS   (4) VTSU   (5) SVUT

7.   KNQT: LORU : : ADGJ : ……?.......
    (1) BCFI   (2) BEHI   (3) BCHI   (4) BEHK   (5) BDGJ

8.   ABCXYZ : DEFUVW : : GHIRST : ……?.......
    (1) JNOPKL   (2) MNOLKJ   (3) JKLOPQ   (4) JOKPLN   (5) JKLMNO

9.   BDFH : IKMO : : QSUW : ……?.......

(1) YZBD   (2) WZCE   (3) XZDB   (4) YZDB   (5) XZBD

10.   PRINCIPAL : LAPICNIRP : : ADOLESCENCE : ......?.......
         (1) ECNCESELODA   (2) ECNECSLEODA
         (3) ECNSCEELODA   (4) ECNECSELODA   (5) ECNCESLEODA

Directions:

Questions (11 to 15): In the following questions Letters/Letter groups are arranged in a particular order with some underlying criterion. Study the order and choose the answer from the alternative to fill the gaps.

11.   DKY, FJW, HIU, JHS, ...
         (1) KGR   (2) KFR   (3) KFS   (4) LGR   (5) LGQ

12.   QPO, NML, KJI, ..., EDC
         (1) CAB   (2) HGF   (3) HGI   (4) IGF   (5) FGH

13.   AB, BA, ABC, CBA, ABCD, ...
         (1) DACB   (2) DBAC   (3) DCAB   (4) CABD   (5) DCBA

14.   ELFA, GLFA, ILJA, ..., MLNA
         (1) OLPA   (2) KLMA   (3) LLMA   (4) KLLA   (5) OLLA

15.   ABDH, BDHP, CFLX, DHPF, ...
         (1) ENTK   (2) EKNT   (3) EJTN   (4) ELFR   (5) EJNT

Directions:

Questions (16 to 20): In each of the following questions, five words are given. Four of them are alike in some way. One is different from them. Identify and indicate it as per the "Instructions".

16.   (1) Port Blair   (2) Silvassa   (3) Kavaratti   (4) Daman   (5) Agartala

17.   (1) Argentina   (2) Afghanistan   (3) Bangladesh   (4) Vietnam   (5) Malaysia

18.   (1) Sarod   (2) Sarangi   (3) Tabla   (4) Violin   (5) Veena

19.   (1) Cricket   (2) Volleyball   (3) Billiards   (4) Fencing   (5) Baseball

20.   (1) Tyre   (2) Clutch   (3) Speed   (4) Brake   (5) Gear

Directions:

Questions (21 to 25): In these questions there is a certain relationship between two words on one side of : :, and only one word is given on the other side of ::. The missing word is to be found out from the given alternatives (1), (2), (3), (4) and (5) so that relationship is the same as for the other pair. Identify the correct answer and indicate it as per the "Instructions".

21.   Manipuri : Manipur :: Kathakali : ....?.......
         (1) Karnataka   (2) Tamil Nadu   (3) Kerala

(4) Telangana   (5) Andhra Pradesh

22.   Pt. Ravishankar : Sitar :: Bismillah Khan : …….?.......
    (1) Sarod   (2) Santoor   (3) Shehnai   (4) Flute   (5) Tabla

23.   Ornithologist : Birds :: Anthropologist : …….?.......
    (1) Plants   (2) Animals   (3) Mankind   (4) Environment   (5) Fishes

24.   My Experiments with Truth : M. K. Gandhi :: India Wins Freedom : …….?.......
    (1) Nehru   (2) Indira Gandhi   (3) Maulana Azad
    (4) Chandrasekhar Azad   (5) Rajendra Prasad

25   Australia : Kangaroo :: Nepal : …….?.......
    (1) Buffalo   (2) Lion   (3) Cow   (4) Tiger   (5) Elephant

Directions:
Questions (26 to 30): These questions are based on the following diagrams. Study them carefully and indicate the correct answer as per the "Instructions".
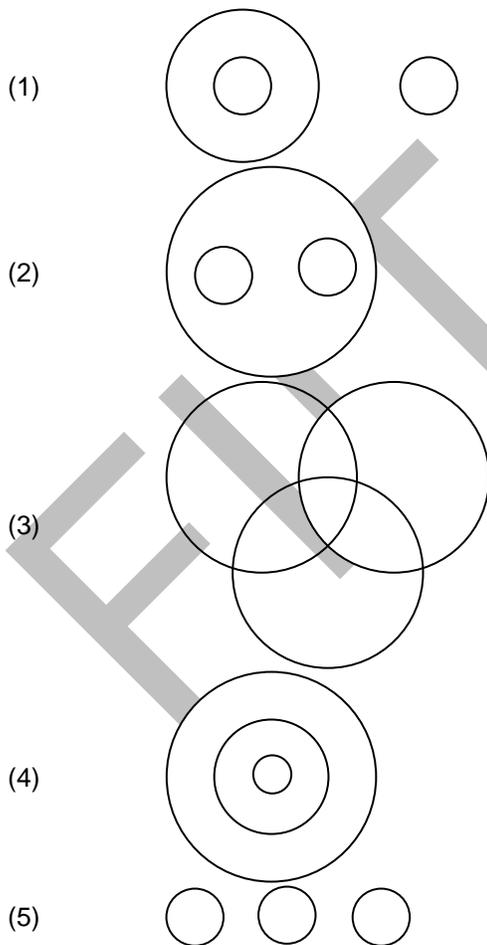

26.   Lions, Foxes and animals

27.   Manager, Labour union, Worker

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28.   Country, State, City

29.   Politicians, Poets, Women

30.   Sparrows, Birds, Mice

Directions:
Questions (31 to 35): With the help of the given diagram, answer the following questions making the right choice from the given alternatives. Indicate the answer as per the "Instructions".

31.   The region which represents the people who are intelligent, honest and truthful but not hardworking is denoted by………………………
        (1) e (2) g (3) f
        (4) i (5) j

32.   The people possessing all the qualities are represented by………………..
        (1) e (2) g (3) f
        (4) i (5) j

33.   The region which represents people who are not intelligent but posses all other three qualities is denoted by ………..
        (1) b (2) e (3) g
        (4) i (5) f

34.   People who are not hardworking honest and truthful but intelligent are represented by……………………
        (1) d (2) c (3) l
        (4) j (5) m

35.   People who are not honest and truthful but are hardworking and intelligent both, are represented by………..
        (1) a (2) b (3) c
        (4) e (5) g

Direction:
Questions (36 to 38): If in a certain language, ENTRY is coded as 12345 and STEADY is coded as 931785. How are the following words coded? Identify the right answer and indicate it as per the "Institutions".

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36.   TENANT
        (1) 312123   (2) 312723   (3) 317223
        (4) 312327   (5) 312721

37.   ARREST
        (1) 744589   (2) 744193   (3) 744189
        (4) 744593   (5) 744583

38.   ENDEAR
        (1) 178174   (2) 174189   (3) 124189
        (4) 128174   (5) 124574

Direction:
Questions (39 to 42): These questions are based on simple arithmetic principles. Find the right answer from the alternatives and indicate it as per the "Instructions".

39. $\left(\dfrac{1}{4}\right)^{-2} = ...$

        (1) 2   (2) $\dfrac{-1}{2}$ (3) $\dfrac{-1}{16}$

        (4) $\dfrac{1}{16}$ (5) 16

40. $\dfrac{0.1 \times 0.1 - 0.01 \times 0.01}{0.11} = ...$
        (1) 0.01   (2) 0.09   (3) 0.10
        (4) 0.11   (5) 1.00

41. $12\dfrac{1}{2}\% = ...$
        (1) 0.8   (2) 1.25   (3) 0.125
        (4) 12.5   (5) 0.08

42.   The value of $\dfrac{1}{2+\dfrac{1}{3\dfrac{1}{4+\dfrac{1}{5}}}}$ is…………

        (1) $\dfrac{5}{46}$ (2) $\dfrac{68}{157}$ (3) $\dfrac{157}{68}$

        (4) $\dfrac{21}{110}$ (5) $\dfrac{110}{21}$

Direction:
Questions (43 to 46) : Each question has four problem figures (a), (b), (c) and (d). Figure (d) has only a question mark '?'. Figure (b) bears a certain relationship to (a). Similarly one of the answer figures bears similar relationship to (c). Find out and indicate it as per the "Instructions".

43.   Problem Figures

(a)	(b)	(c)	(d)

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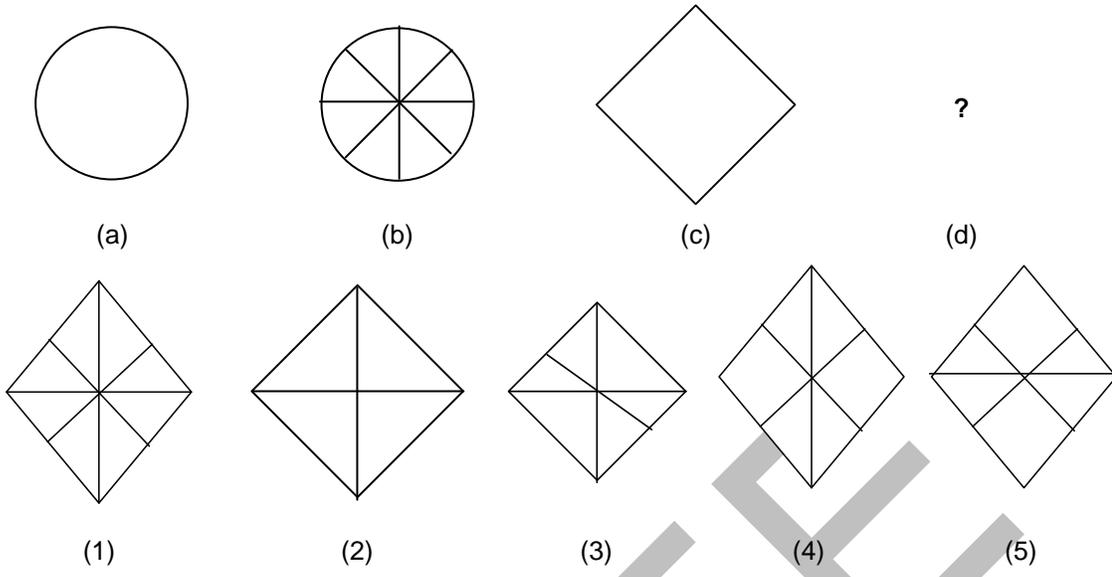
44.   Problem Figures

(a)	(b)	(c)	(d)

Answer Figures

(1)	(2)	(3)	(4)	(5)
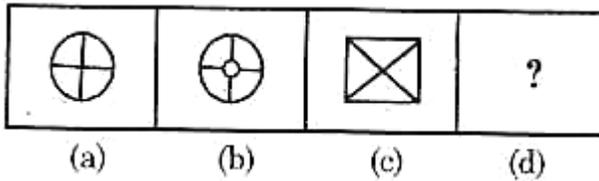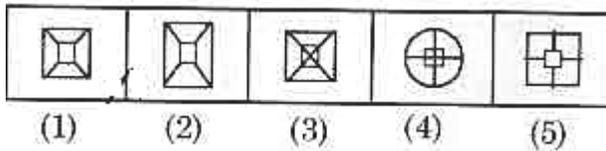
45.   Problem Figures

(a)	(b)	(c)	(d)

Answer Figures

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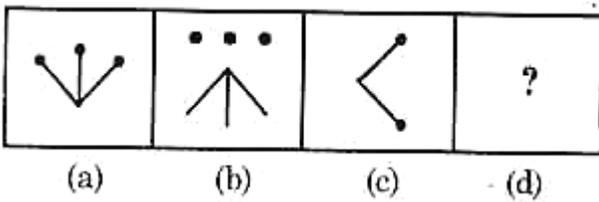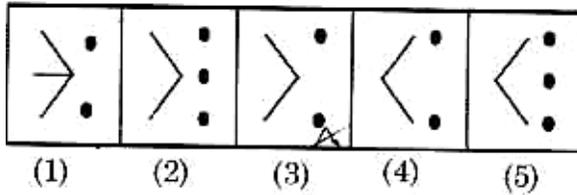
46.   Problem Figures

(a)   (b)   (c)   (d)

Answer Figures

(1)   (2)   (3)   (4)   (5)
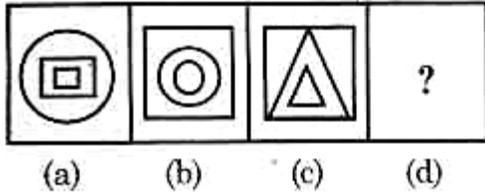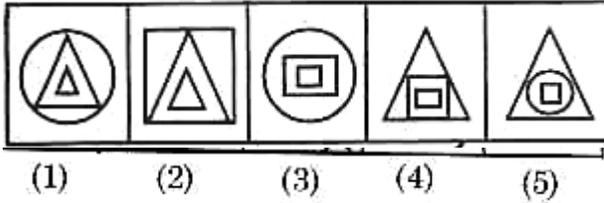
Directions:
Questions (47 to 50) : In these questions there are five problem figures (a), (b), (c), (d) and (e). Figure (e) has a question mark'?'. Select one figure from answer figures (1), (2), (3), (4) and (5) such that the series is completed. Indicate your answer as per the "Instructions".

47.   Problem Figures

(a)   (b)   (c)   (d)   (e)

Answer Figures

(1)   (2)   (3)   (4)   (5)
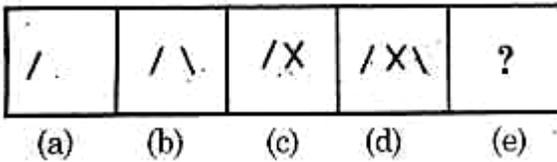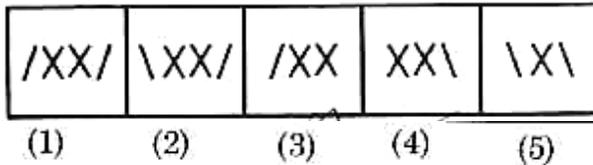
48.   Problem Figures

(a)   (b)   (c)   (d)   (e)

Answer Figures

(1)   (2)   (3)   (4)   (5)
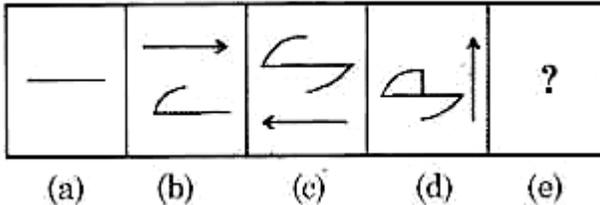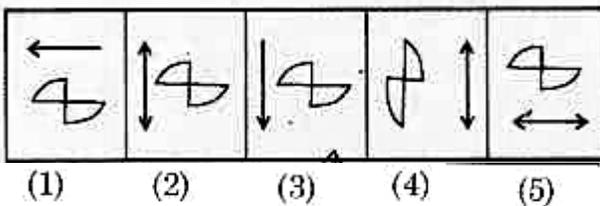
49. Problem Figures
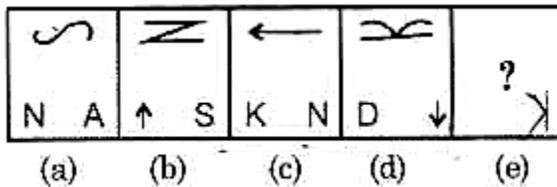
Answer Figures
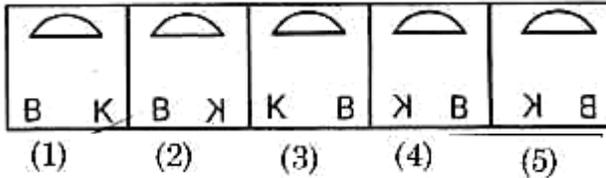
50. Problem Figures
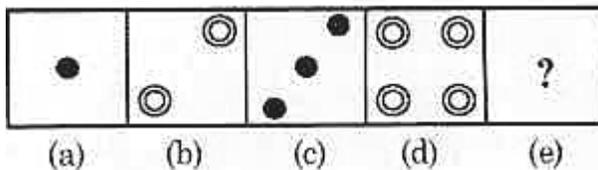
Answer Figures
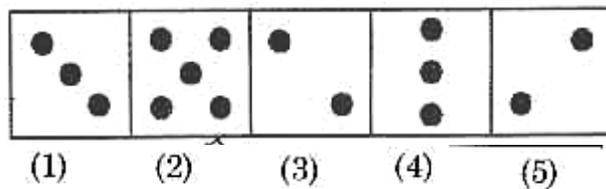
PART II
LANGUAGE COMPREHENSIVE TEST (Q. No. 51 – 100)

Note:- i) **SHADE** the correct alternatives in the **OMR** Answer Sheet provided, from amongst the cnes gjven against the corresponding questions in the Question Booklet. For shading the circles, use a **HB Pencil**.

ii) Q. Nos. 51 to 100 of Language Comprehensive Test contains English Language along with a blank sheet for rough work.

Read the following passage and answer the questions given after it. At the stage of civilization, when many nations are brought into close and vital contact for good and evil, it is essential, as never before, that their gross ignorance of one another should be diminished, that they should begin to understand a little of one another's historical experience and resulting mentality. It is the fault of the English to expect the people of other countries to react as they do, to political and international situations. Our genuine goodwill and good intentions are often brought to nothing, not necessarily in detail but broad outlines of the social and political conditions which have given to each nation its present character.

51. According to the author 'Mentality' of a nation is mainly product of its
(1) history   (2) politics
(3) international position (4) present character

52. The need for a great understanding between nations……

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(1) was always there   (2) is more today then every before
(3) is no longer there   (4) will always be there

53. The character of a nation is the result of its
(1) mentality   (2) gross ignorance
(3) cultural heritage   (4) socio-political conditions

54. According to the author his countrymen should……………
(1) read the story of other nations   (2) have a better understanding of other nations
(3) not react to other nations   (4) have vital contacts with other nations

55. Englishmen like others to react to political situations like
(1) us   (2) themselves   (3) others   (4) each other

Directions:
Questions (56 to 60): Read the following passage and answer the questions given after it. Cricket how I detected chic game when I was young! My family would spend hours and hours watching it on television while I angrily waited for it to end. Every game seemed the same. Yes, one team wan and other team last, hut it was always the same game. Some men pitching a hall, some running hack and forth.

Then something happened. I became aid enough to start playing cricket myself with the anther kids in my neighbourhood. We found a place to play whence we could put up a wicket. We played an the streets, in the backyard even en the tops of the building, believe it or not!

I can recall so clearly the sound of the ball hitting the bat and the quick running feet. I can still feel the sun an my face as I played and the bruise and scratches from falling down. I can still see the blue sky fading to darkness behind the buildings as our games continued iota the night. It became my favourite thing in the wand. Now I watch it not with anger, but with fend memories of the endless days and nights spent playing the game.

56. Which title best summarizs the main idea of the passage?
(1) Cricket A game far all the ages   (2) flaw I learned to lave cricket?
(3) The dangers of playing cricket   (4) Learning the rules of a difficult game

57. The word 'detested' is closest in the meaning to……….
(1) heated   (2) played   (3) wanted   (4) watched

58. What beat describes the author's attitude towards cricket when he was very young?
(1) It was boring to watch   (2) It was difficult to learn
(3) It was fun to talk about   (4) It was dangerous to play

59. According to the author, what was surprising about some of the cricket games be played?
(1) They were played without bats   (2) They were played on rooftops
(3) No one cared who won them   (4) No one got hurt playing them

60. The author describes memories of all of the following EXCEPT………..
(A) how the sun felt on his skin   (2) how the ball sounded hitting the bat
(3) how the sky turned from light to dark   (4) how the rules of the game caused arguments

Directions
Question (61 to 65)
Read the following passage and answer the question given after it.

Floods are second only to fire as the meat common of all natural disasters. Scientists recognized a number of conditions, from anew on the ground to human error that canoe flooding. When deep snow melts it creates a large amount of water. Although deep snow alone rarely canoes floods when it occurs together with heavy rain and sudden warmer weather it can lead to serious flooding. Rivera that are coveted in ice can aloe lead

to flooding. When ice begins to melt the surface of the ice cracks and breaks into large pieces. These pieces of ice move and form a dam in the river, causing the water behind the dam to rise and flood the land upstream. If the dam breaks suddenly the large amount of water hold behind the dam can flood the areas downstream too. Broken ice dams are not the only dam problems that can canoe flooding, when a large human-made dam breaks or fails to hold the water collected behind it, the result can be devastating. Dams contain ouch huge amount of water behind them that sudden breaks occurring with destructive force of the water is like a great tidal wave unleashed. Dam waters can travel tens of kilometres, drown and crush every thing and creature in their path.

61. What is the most common natural disaster?
    (1) Flood   (2) Fire   (3) Wind damage   (4) Rain

62. How does deep snow cause flooding?
    (1) Melting snow causes flooding.   (2) Too much rain causes flooding
    (3) Sudden warm temperatures contained with heavy rain causes flooding.
    (4) Freezing water causes flooding.

63. A broken human made dam compared to……….
    (1) a tsunami   (2) a tidal wave   (3) a broken ice dam   (4) overflowing

64. Which of the following best describes how a frozen river can cause a flood?
    (1) The ice in the river melts quickly and causes a flood.
    (2) The ice in the river cracks into pieces that eventually creates a dam causing the water to overflow.
    (3) The ice in the water cracks causing the water to overflow.
    (4) The water behind the dam collects and when the dam breaks it causes flooding upstream.

65. How far can dam water travel when it is unleashed from a broken dam?
    (1) Less then ten kilometres   (2) Tens of kilometres
    (3) Thousands of kilometres   (4) Tens of thousands of kilometres downstream

Directions:
Questions (66 to 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.

    Revising for exam is not as easy as it looks. You will need to work out which routine suits you best, and 66 stick to it. Some people like studying at night when it's quiet, whereas others find the early morning is a 67 time to get things done.   You might enjoy 68 to music 69 you revise, but this can be 70. Can you really concentrate 71 two things at once? So think before you turn your radio on!

66. (1) then   (2) than   (3) after   (4) often

67. (1) best   (2) good   (3) worse   (4) well

68. (1) to listen   (2) having listened   (3) listen   (4) listening

69. (1) during   (2) while   (3) however   (4) throughout

70   (1) unhelpful   (2) helpful   (3) helpless   (4) helping

71. (1) on   (2) in   (3) of   (4) for

Directions:
Questions (72 to 73):
    The following five 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$_1$ In May 1995 the British woman Alison become the first female climber to conquer Mount Everest.
S$_2$…………………………
S$_3$…………………………
S$_4$…………………………
S$_6$ Only one other person had achieved this before.
P. She reached the summit without bottled oxygen or the help of sherpas.
Q. This is, of course the highest mountain in the world
R. These are the native Nepalese, who normally carry climbers' equipment and supplies.
(1) PQR　　　　　(2) QPR　　　　　(3) RQP　　　　　(4) QRP

73. S$_1$ Science improves out 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
(1) RQP　　　　　(2) PQR　　　　　(3) RPQ　　　　　(4) QRP

Directions:
Questions (74 to 75):
　　Choose the appropriate one word substitution for the given statements.

74. Suitable or safe for eating.
(1) Able　　　　　(2) Capable　　　　　(3) Edible　　　　　(4) Comfort

75. That which is not in use anymore
(1) Absolute　　　　(2) Obsolete　　　　(3) Unused　　　　(4) Untouched

Directions:
Questions (76 to 77):
　　For each of the following groups of four words, find the incorrectly spelt word.

76. (1) strategy　　　　(2) strenth　　　　(3) strictly　　　　(4) stretch

77. (1) rushed　　　　(2) routine　　　　(3) rubbish　　　　(4) runner

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

78. No matter how often I explain it, he doesn't seem to
(1) put it through　　(2) take it in　　　(3) take it on　　　(4) put it in

79. That is the proposal which I shall …….to the managing director.
(1) put forward　　(2) take down　　(3) bring up　　　(4) puts away

80. Trisha…………the information she wanted in her reference books.
(1) looked after　　(2) took out　　　(3) looked up　　　(4) took up

81. Local shopkeepers are their prices for the summer sales.
(1) taking down　　(2) looking down　　(3) taking off　　(4) bringing down

82. All the ideas were good, but Arjun …………..the best plan of all
(1) put on　　　　(2) got on with　　(3) came　　　　(4) came up with

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83. I don't think the book is worth………..
(1) read (2) reading (3) to read (4) to reading

84. I'd be able to lead the way if you ………….me your map.
(1) lend (2) are reading (3) lent (4) will lend

85. Water……….at 100 degree Celsius.
(1) boiling (2) boils (3) is boiling (4) boil

Directions:
Questions (86 to 90):
In each of the following an idiomatic phrase is given followed by four alternatives. Choose the alternative that best expresses the meaning of the expression.

86. Pillar to post……………..
(1) very tiresome journey (2) one place to another
(3) main support of a building (4) clumsy looking objects

87. To bell the cat…………….
(1) to take lead in danger (2) to tie bell to cats neck
(3) to be alert of the enemy (4) to make noise

88. To chew the cud………
(1) to be very annoyed (2) to think deeply
(3) to eat natural food (4) to start doing something new

89. The lions share……….
(1) the stranger one (2) the smaller part (3) the worthy part (4) the larger part

90. Between the devil and the deep sea………………
(1) to be in a dilemma (2) lobe angry in a temper
(3) to choose correctly (4) to live dangerously

Directions:
Questions (91 to 95)
Select the word which means the same as the given words,

91. CONTINUOUS
(1) Intermittent (2) Adjacent (3) Uninterrupted (4) Contiguous

92. VERIFY
(1) Disclose (2) Confirm (3) Refute (4) Unite

93. PASSIVE
(1) Inactive (2) Emotional (3) Lively (4) Woeful

94. RATIONAL
(1) Deliberate (2) Invalid (3) Prompt (4) Sound

95. ATTRIBUTE
(1) Quality (2) Penalty (3) Speech (4) Admission

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

96. UNIFORM

| (1) Slovenly | (2) Dissembling | (3) Diverse | (4) Bizarre |

97. FALLACY
(1) Truth   (2) Blessing   (3) Weakness   (4) Fable

98. SUBSEQUENT
(1) Necessary   (2) Insignificant   (3) Primary   (4) Previous

99. DISPERSE
(1) Gather   (2) Agree   (3) Praise   (4) Satisfy

100. PACIFY
(1) Complicate   (2) Dismiss   (3) Excite   (4) Atomize

PART III
LANGUAGE COMPREHENSIVE TEST (Q. No. 101 – 200)

Note :-
(i) Subjects, Question Sr. Nos. 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

(ii) **SHADE** the circle having the correct alternative in the **OMR** Sheet provided, from amongst the ones given against the corresponding question in the Question Paper Booklet. For shading the circles, use a **HB Pencil**.

101. A table clock has its minute hand 4.5 cm long. The average velocity of the tip of the minute hand between 6.00 a.m. to 6.30 a.m. is
(1) 5×10^{-3} cm/s   (2) 2.25×10^{-3} cm/s   (3) $9\ 10^{-3}$ cm/s   (4) $13.5\ 10^{-3}$ cm/s

102. If a satellite is moving in a stationary orbit near to earth's surface (neglect the height of the orbit from earth's surface) then the time period of the satellite depends on
(1) mass of the earth   (2) radius of the earth   (3) value of the 'G'   (4) mass of the satellite

103. Let us assume that you have lifted a suitcase from the floor and kept it on a table. The work done by you on suitcase depends on
(1) the path taken by the suitcase   (2) the time taken by you in doing so
(3) the weight of the suitcase   (4) your weight

104. A body of mass 0.5 kg is moving with a constant velocity of 2 m/s. In order to bring it to rest in a distance of 2 m, the work to be done is
(1) 2.5 J   (2) 1 J   (3) 10 J   (4) 5J

105. If two pieces of different metals when completely immersed in water experience equal up thrust then
(1) both pieces have equal weight in air   (2) both pieces have equal density
(3) both pieces have equal volume   (4) both are immersed to the same depth

106. A man fires a gun and hears the echo from the cliff after 2 seconds. He walks towards cliff about a distance of 85 m and fires the gun again. He hears echo after 1.5 seconds. In this case, the velocity of sound in air is
(1) 85 m/s   (2) 170 m/s   (3) 340 m/s   (4) 680 m/s

107. Water is used in car radiators as coolant because ……..
(1) its density is more   (2) it has high specific heat value
(3) high thermal conductivity   (4) free availability

108. The specific heat capacity of a body depends on
(1) the amount of heat given   (2) the temperature raised
(3) the mass of the body   (4) the material of the body

109. The refractive index of the material of a double convex lens is 1.5 and its focal length is 5 cm. If the radius of curvatures of faces are equal then the value of its radius. of curvature is
(1) 5 cm   (2) 6.5 cm   (3) 8 cm   (4) 9.5 cm

110. The phenomenon used in optical fibers for transmission of light energy is
(1) refraction   (2) scattering   (3) reflection   (4) total internal reflection

111. A uniform conductor of resistance 'R' is cut into 20 equal pieces. Half of them are joined in series and remaining half of them are connected in parallel. If two combinations are joined in series the effective of all pieces is …………..

(1) R   (2) $\dfrac{R}{2}$ (3) $\dfrac{101R}{100}$ (4) $\dfrac{201R}{100}$

112. The machine gun fires 240 bullets per minute. 'If the mass of each bullet is 10 g and the velocity of the bullets is 600 m/s, then the power of the gun is
(1) 43200 kW   (2) 432 kW   (3) 72 kW   (4) 7.2 kW

113. Three conductors draw currents of 1A, 2A and 4A respectively when they are connected to a battery individually. If they are connected in series to same battery, the current drawn will be

(1) $\dfrac{2}{7}A$ (2) $\dfrac{3}{7}A$ (3) $\dfrac{4}{7}A$ (4) $\dfrac{5}{7}A$

114. The substance which is known as "dry ice".
(A) Potassium permanganate   (B) copper sulphate
(C) Sulpher dioxide   (D) solid carbon dioxide

115. The colloidal solution among the following :
(A) Milk   (B) Oil in water
(C) Kerosene in water   (D) Chalk powder in water

116. The number of particles present in one mole of any substance is equal to …….
(A) 6.022×10^{23} (B) 60.22×10^{23} (C) 6.022×10^{27} (D) 60.22×10^{27}

117. "Atoms are neither, created nor destroyed in a chemical reaction". This postulation was given by …
(A) J.J. Thomson   (B) Niels Bohr
(C) John Dalton   (D) Amedeo Avogadro

118. Electrons were discovered by ….
(A) James Chadwick   (B) J. J. Thomson

(C) Ernest Rutherford   (D) Niels Bohr

119. Deuterium is an isotope of ….
(A) Carbon   (B) hydrogen   (C) cobalt   (D) cesium

120. The molecular formula of bleaching powder is …
(A) $CaOCl_2$ (B) $Ca(OH)_2$ (C) $CaCl_2$ (D) NaCl

121. "Electrons pairing in orbitals starts only when available empty orbitals of the same energy are singly occupied". This statement refers to …
(A) Pauli exclusion principle   (B) Hund's rule
(C) Aufbau principle   (D) Quantum principle

122. Which of the following is considered to be an anomalous pair of elements in Mendeleev's periodic table based on atomic weights ?
(A) Na/K   (B) H/He   (C) Te/I   (D) Fe/Co

123. The valency of the element wit atomic number 17 is …..
(A) 7   (B) 1   (C) 7, 1   (D) 3.5

124. Galena is a ore of…..
(A) Zn   (B) Au   (C) Pb   (D) Al

125. Which of the following solution of acetic acid in water is used as preservative ?
(A) 15–20%   (B) 5–8%   (C) 100%   (D) 50%

126. The purpose of smelting an ore is to……
(A) oxidize   (B) reduce   (C) neutralize   (D) decomposed

127. Pseudo Coelome is present in ………..
(1) Tape worm   (2) Nematode   (3) Earth worm   (4) Cockroach

128. Which is NOT true in case of parthenogenesis?
(1) Seedless fruits
(2) Shift from sexual to asexual type of reproduction
(3) After fertilization female gamete develops into zygote
(4) Without fertilization female gamete develops into zygote

129. Who coined the term. "Hormone" to bio-chemical coordinators?
(1) Paul Langerhans   (2) Leonardo da Vinci
(3) Starling   (4) None of these

130. Delay in blood clotting is due to the deficiency of the following vitamin.
(1) Ascorbic Acid   (2) Pantothenic acid (3) Biotin   (4) Phylloquinone

131. The excretory organs in Miollusca……….
(1) Nephridia   (2) Meta Nephridia   (3) Flame Cells   (4) Lungs

132. Destructive enzymes containing cell organelles are ………..
(1) Gogicomplex   (2) Ribosomes   (3) Lysosomes   (4) Chromosomes

133. Identify the mismatched pair.
(1) Fragmentation – Algae, Fungi
(2) Fission – Earthworm
(3) Regeneration – Planaria
(4) Budding – Yeast

134. Who proposed that cells arise from pre-existing cells?
(1) Robert Remak   (2) August Weisemann (3) Virchow   (4) Gregor Mendel

135. Choose the correct one among the following.
(1) High concerntration of auxin stimulates stem growth and root growth.
(2) High concentration of auxin inhibits stem growth and stimulates root growth.
(3) High concentration of auxin stimulates stem growth and inhibit root growth
(4) Low concentration of auxin stimulates stem growth and inhibit root growth.

136. In the process of haemodialysis an anticoagulant mixed with blood is …..
(1) haemocyanin   (2) heparin   (3) bilirubin   (4) haemoglobin

137. Which of the following are secondary metabolites?
(A) Carbohydrates   (B) Tannins   (C) Proteins   (D) Gums
(E) Alkaloids
(1) A, D   (2) A, D, E   (C) B, C   (D) B, D, E

138. Amoeba acquires its food by…………
(1) Exosmosis   (2) Endocytosis   (3) Endosmosis   (4) Exocytosis

139. Identify the mismatched pair.
(1) Annelida $\rightarrow$ Animals with Pseudo coelmoe
(2) Arthropoda $\rightarrow$ jointed leg organisms
(3) Porifera $\rightarrow$ organisms with holes on body
(4) Echinodermata $\rightarrow$ spiny skinned organisms

140. Which of the following statements are CORRECT?
(A) Spindle equator is formed in Telophase
(B) Meiosis results 4 haploid daughter cells of the parent cell.
(C) Mitosis does not occur during the formation of gametes in sexual reproduction.
(D) Pairing of chromosomes takes place in Prophase I.
(1) A, B, C   (2) A, C, D   (3) B, C, D   (4) B, D

141. If x = (123456789)(76543211) + (23456789)^2, then the number of zeros in $\sqrt[4]{x}$ is
(1) 5   (2) 4   (3) 6   (4) 2

142. 30, 72 and x are three positive integers. Such that the product of any two of them is divisible by the third, then the least value of x is
(1) 60   (2) 40   (3) 96   (4) 84

143. If $4^{18} - 1 = 687194a6735$, then the value of digit 'a' is
(1) 7   (2) 8   (3) 5   (4) 3

144. If xyz + xy + xz + yz + x + y + z = 384 where x, y, z are positive integers, then the value of x + y + z is
(1) 23   (2) 18   (3) 20   (4) 35

145. The perimeter of an isosceles right triangle is 2p, Its area is
(1) $\left(3-2\sqrt{2}\right)P^2$ (2) $\left(1-2\sqrt{2}\right)P^2$ (3) $\left(3+2\sqrt{2}\right)P^2$ (4) $\left(1+2\sqrt{2}\right)P^2$

146. $\sqrt{(1 \times 2 \times 3 \times 4) + 1} = 5, \sqrt{(2 \times 3 \times 4 \times 5) + 1} = 11, \sqrt{(3 \times 4 \times 5 \times 6) + 1} = 19$ etc., the value of

$\sqrt{(50 \times 51 \times 52 \times 53) + 1}$ is

(1) 2415   (2) 2661   (3) 2165   (4) 2225

147. $\text{Log}_3{}^{15} = x$, then $\log_5 9$ in terms of x is

(1) $\dfrac{x+1}{x-1}$ (2) $\dfrac{2}{x-1}$ (3) $\dfrac{x}{x+1}$ (4) $\dfrac{x-1}{x}$

148. If $2^{3x} = 64^{-1}$ and $10y = 0.01$, then the value of $(50x)^{-1} \times (10y)^{-1}$ is

(1) -1 (2) 1   (3) $\dfrac{1}{2}$ (4) 2

149. Given that x, a_1, a_2, y are in A.P. and x, b_1, b_2, b_3, y are also in A.P, then the value of $\dfrac{a_2 - a_1}{b_2 - b_3}$ if ($x \neq y$)

(1) $\dfrac{1}{2}$ (2) $\dfrac{3}{4}$ (3) $\dfrac{4}{3}$ (4) 1

150. Given that $a^2 + 6b = -14$, $b^2 + 8c + 23 = 0$ and $c^2 + 4a - 8 = 0$, then the value of $ab + bc + ca$ is

(1) 26   (2) 32   (3) 16   (4) 25

151. If $\dfrac{3^x}{1 + 3^x} = \dfrac{1}{3}$, then the value of $\dfrac{27^x}{1 - 27^x}$ is

(1) 2   (2) $\dfrac{3}{4}$ (3) $\dfrac{1}{7}$ (4) 1

152. In the quadrilateral ABCD $\angle A = \angle C = 90°$, $AE = 5cm$ and $BE = 12cm$ and $AC = 21cm$. If $DF = x$, then the value of x is

(1) $6\dfrac{2}{3} cm$ (2) $\dfrac{10}{7} cm$

(3) 11cm   (4) 13cm
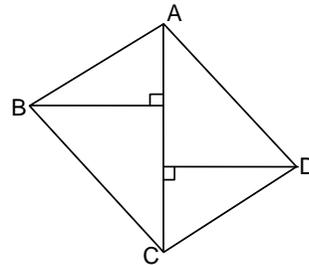
153. Secants AB, AC intersect the circle with centre O, at D, E respectively. BE, DC intersect at F. If $\lfloor BOC = 118°$ and $\angle A = 30°$, then $\lfloor BFC =$

(1) 88°   (2) 77°

(3) 66°   (4) 55°
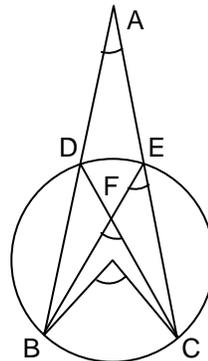
154. Simplify: $\left(\sqrt[6]{27} - \sqrt{6\frac{3}{4}} \right)^2$

(1) $\frac{3}{4}$ (2) $\frac{\sqrt{3}}{2}$ (3) $\frac{3\sqrt{3}}{4}$ (4) $\frac{3}{2}$

155. $N = 69^5 + 5.69^4 + 10.69^3 + 10.69^2 + 5.69 + 1$. How many positive integers are factors of N
(1) 5   (2) 216   (3) 69   (4) 125

156. Four positive integers a, b, c and d have a product of 8! And satisfy
ab + a + b = 524
bc + b + c = 146
cd + c + d = 104
then find the value of a – d. (8! = $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$)
(1) 4   (2) 6   (3) 8   (4) 10

157. Compute the sum of all the roots of (2x + 3)(x – 4) + (2x + 3)(x – 6) = 0
(1) $\frac{7}{2}$ (2) 4   (3) 5   (4) 13

158. For how many integers n is $\frac{n}{20-n}$ the square of an integer
(1) 1   (2) 2   (3) 3   (4) 4

159. If a, b and c are positive real numbers, such that a(b + c) = 152, b(c + a) = 162 and c(a + b) = 110, then abc is
(1) 672   (2) 688   (3) 704   (4) 720

160. The graph of the polynomial $P(x) = x^5 + ax^4 + bx^3 + cx^2 + dx + e$ has five distinct x – intercepts, one of which is at (0, 0). Which of the following coefficients cannot be zero ?
(1) b   (2) d   (3) a   (4) c

HISTORY

161. Who among the following is NOT related to steam engine?
(1) New Common   (2) James Watt
(3) James Hargreaves   (4) Matthew Boulton

162. 'Chutney' music is popular in ………..
(1) Trinidad and Guyana   (2) Myanmar
(3) Nigeria   (4) Sri Lanka

163. Who wrote the book 'Bitter cry of out cast London?
(1) Andrew Mearns   (2) M. W. Ridley
(3) Charles Dickens   (4) Rudyard Kipling

164. Why did the United States decide to intervene the Vietnam war?
(1) Because communist had gained the power
(2) Because Vietnam attacked United states
(3) Because United States was a trading partner of France

(4) All of these

165. Who wrote the novel 'Saraswati Vijayam'?
(1) Advaita Mallaburman
(2) Chandu Menon
(3) Srinivas Das
(4) Potheri Kunjambu

166. Which of the following statements is FALSE regarded to Rokeya Hussein?
(1) She started a girls school in Calcutta
(2) She wrote a satiric fantasy in English called Sultan's dream
(3) She wrote a novel Padmarag
(4) None of these

167. Which is the first industry to be set up by Seth Hukum Chand, a marwari businessman?
(1) Indian Jute Mill
(2) Iron and Steel industry
(3) Commercial bank
(4) Cotton industry

168. Gandhi coined the phrase Satyagraha in/during _____
(1) South Africa
(2) Champaran movement
(3) Kaira movement
(4) Anti Rowlatt act agitation

169. Who introduced the reign of Terror?
(1) Maximilien Robespierre
(2) Mirabeau
(3) Napoleon Bonaparte
(4) Stalin

170. The movement started by Huynh Phu So in Vietnam is _____
(1) Boxer movement
(2) Hoa Hao movement
(3) Peasant movement
(4) May movement

171. Which country has the national anthem, 'God save our noble king'?
(1) Germany
(2) Italy
(3) Britain
(4) France

172. Battle of Leipzing occurred during _____
(1) 1804
(2) 1813
(3) 1815
(4) 1830

173. The reason for call off of civil disobedience movement by Gandhiji was _____
(1) Chauri Chaura incident
(2) Non willingness of the people
(3) Gandhi-Irwin pact
(4) Announcement of a vague offer of dominion status by the British government

174. 'Gaddis Tribe' are natives of _____
(1) Himachal Pradesh
(2) West Bengal
(3) Kerala
(4) Madhya Pradesh

175. Tithe means _____
(1) Tax paid directly to the state
(2) Tax levied by Dukes
(3) Tax levied by church
(4) None of these

GEOGRAPHY

176. Nanda Devi biosphere reserve is located in _____
(1) West Bengal
(2) Meghalaya
(3) Kerala
(4) Uttarakhand

177. Which of these national highways is NOT related to Golden Quadrilateral project?
(1) National Highway Number 2
(2) National Highway Number 3
(3) National Highway Number 4
(4) National Highway Number 1

178. Which of the following states is NOT connected with the H.V.J pipe line?
(1) Gujarat   (2) Uttar Pradesh   (3) Karnataka   (4) Madhya Pradesh

179. The first cement plant was set up at
(1) Chennai   (2) Kolkata   (3) Kanpur   (4) Mumbai

180. Thermal electricity is generated by using _____
(1) coal   (2) petroleum   (3) natural gas   (4) all of these

181. Which of the following soils develop due to the result of intense leaching due to heavy rainfall?
(1) Laterite soils   (2) Black soils
(3) Red and yellow soils   (4) Alluvial soils

182. Which of the following statements is NOT correct?
(1) Jowar is the third most important food crop in India
(2) Rubber is an equatorial crop
(3) India is the largest producer of fruits and vegetables in the world
(4) India is the largest producer of Sugarcane

183. Which of the following is NOT related to Bailadial range?
(1) Bailadila range is located in Chattisgarh
(2) Iron ore from these mines is exported to Japan and South Korea via Kolkata port
(3) Magnetite grade iron is found in Bailadila range.
(4) None of these

184. Minerals are deposited and accumulated in the strata of which of the following rocks?
(1) Metamorphic rocks   (2) Igneous rocks
(3) Sedimentary rocks   (4) All of these

185. Salal project is located on this river.
(1) Chambal   (2) Son   (3) Chenab   (4) Jhelum

186. Which river makes a Trellis pattern drainage?
(1) Narmada   (2) Godavari   (3) Ganga   (4) Sabarmati

187. Which of the following are NOT suitable for agriculture?
(1) Terai   (2) Bhangar   (3) Khader   (4) Bhabar

188. Starting from Siwaliks, arrange the following in an order
(1) Siwaliks, Terai, Bhabar, Khader   (2) Siwaliks, Khader, Bhabar, Terai
(3) Siwaliks, Bhabar, Terai, Khader   (4) Siwaliks, Khader, Terai, Bhabar

189. The highest peak in Annamalai hills is _____
(1) Anai Mudi   (2) Mahendragiri   (3) Doddabetta   (4) Guru Shikhar

190. Palghat is located in between these two ranges _____
(1) Nilgiri and Annamalai   (2) Annamalai and Palani
(3) Satpura and Western ghats   (4) Palani and Panch Malai hills

POLITICAL SCIENCE

191. Which of the following is NOT under concurrent list?
(1) Trade Unions   (2) Agriculture
(3) Marriage   (4) Adoption and Succession

192. The organization 'FEDCOR' which led a movement and protested against water privatization is in this country.

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(1) India   (2) Bolivia   (3) Ghana   (4) Mexico

193. Match list (A) with (B) and select the correct answer using the codes given below the list

(A)	(B)
(A) Single issue movement	(i) Telangana Rashtra Samithi
(B) Pressure group	(ii) Women's movement
(C) Political party	(iii) Fertilizer dealer's association
(D) Long term movement	(iv) Anti-labour movement

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

194. Which of the following is NOT correct regarding Dr. Babu Rajendra Prasad?
(1) Born in Maharashtra
(2) Chairman of the Constitutent Assembly
(3) Three times the President of congress
(4) The first President of India

195. What was the slogan of Janata Party during 1977 Lok Sabha elections?
(1) Garibi Hatao   (2) Land to the tiller
(3) Protect the self-respect of Indians   (4) Save Democracy

ECONOMICS

196. Which of the following neighbouring countries has better performance in terms of literacy rate than India?
(1) Myanmar   (2) Pakistan   (3) Nepal   (4) Bangaladesh

197. Which company among the given Indian companies did not emerge as a multinational company?
(1) Tata Motors   (2) Ranbaxy
(3) Sundaram Festeners   (4) None of these

198. National consumer day is observed on
(1) October, 15   (2) July, 24   (3) December, 24   (4) February, 5

199. What is the percentage of poverty among agricualtural labourers in India during 2011-12?
(1) 21.9%   (2) 50.1%   (3) 39.8%   (4) none of these

200. What is the quantity of food grain provided to the eligible family under Antyodaya Anna Yojana?
(1) 20 kgs   (2) 25 kgs   (3) 35 kgs   (4) 15 kgs

* * *

NTSE STG I – NOVEMBER, 2015 ANSWERS

MENTAL ABILITY

1.	3	2.	4	3.	1	4.	2	5.	2
6.	1	7.	4	8.	3	9.	5	10.	4
11.	5	12.	2	13.	5	14.	4	15.	3
16.	5	17.	1	18.	3	19.	4	20.	3
21.	3	22.	3	23.	3	24.	3	25.	3
26.	2	27.	1	28.	4	29.	3	30.	1
31.	5	32.	3	33.	4	34.	2	35.	2
36.	2	37.	2	38.	4	39.	5	40.	2
41.	3	42.	2	43.	1	44.	1	45.	3
46.	4	47.	3	48.	3	49.	2	50.	2

ENGLISH

51.	1	52.	2	53.	4	54.	2	55.	2
56.	2	57.	1	58.	1	59.	2	60.	4
61.	2	62.	3	63.	2	64.	4	65.	2
66.	1	67.	2	68.	4	69.	2	70.	1
71.	1	72.	2	73.	1	74.	3	75.	2
76.	2	77.	4	78.	2	79.	1	80.	3
81.	4	82.	4	83.	2	84.	1	85.	2
86.	2	87.	1	88.	2	89.	4	90.	4
91.	3	92.	2	93.	1	94.	1	95.	1
96.	3	97.	1	98.	4	99.	1	100.	3

PHYSICS /CHEMISTRY/BIOLOGY/MATHEMATICS AND SOCIAL
(PHY: Q101 to Q113, CHE: Q114 to Q126, BIO: Q127 to Q140, Maths: Q141 to Q160, SS:Q161 to 200)

101.	1	102.	1,2,3	103.	3	104.	2	105.	3
106.	3	107.	2	108.	4	109.	1	110.	4
111.	Bonus	112.	4	113.	3	114.	4	115.	1
116.	1	117.	3	118.	2	119.	2	120.	1
121.	2	122.	3	123.	3	124.	3	125.	2
126.	2	127.	2	128.	3	129.	3	130.	4
131.	2	132.	3	133.	2	134.	3	135.	3
136.	2	137.	4	138.	2	139.	1	140.	3
141.	2	142.	1	143.	1	144.	3	145.	1
146.	2	147.	2	148.	1	149.	Bonus	150.	1
151.	3	152.	1	153.	1	154.	1	155.	2
156.	4	157.	1	158.	4	159.	Bonus	160.	2

SOCIAL STUDIES

161.	3	162.	1	163.	1	164.	1	165.	4
166.	4	167.	4	168.	1	169.	1	170.	2
171.	3	172.	2	173.	3	174.	1	175.	3
176.	4	177.	2	178.	3	179.	1	180.	1
181.	1	182.	3	183.	4	184.	3	185.	3
186.	3	187.	1	188.	3	189.	1	190.	3
191.	2	192.	2	193.	3	194.	1	195.	4
196.	1	197.	4	198.	3	199.	3	200.	3