

NATIONAL TALENT SEARCH EXAMINATION

(MENTALABILITY AND SCHOLASTIC APTITUDE TEST)

Time: 180 Minutes

Mental Ability Test Language	50 Marks
Comprehensive Test Aptitude	50 Marks
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 Centre Code No. and Roll No. 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 Centre Code No. 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 Centre Code No. and Roll No. 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 completion of the examination. No candidate should leave the examination hall before the end of the examination.

MAT

Directions Question (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. | 5, 10, 17, 26,, 50 | | | | |
| | (1) 34 | (2) 31 | (3) 37 | (4) 41 | (5) 43 |
| 2. | 2, 6, 12, 20, 30, 42, 56, | | | | |
| | (1) 63 | (2) 67 | (3) 69 | (4) 72 | (5) 74 |
| 3. | 14, 28, 20, 40, 32, 64, | | | | |
| | (1) 56 | (2) 46 | (3) 58 | (4) 48 | (5) 72 |
| 4. | 0, 3, 8, 15, 24, | | | | |
| | (1) 35 | (2) 37 | (3) 40 | (4) 39 | (5) 38 |
| 5. | 12, 26, 54, 110, | | | | |
| | (1) 222 | (2) 224 | (3) 220 | (4) 228 | (5) 226 |

Questions (6 to 10) are based upon letter analogy. There are two pairs of letter combination 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. | LKJ : MNO :: DCB : ? | | | | |
| | (1) FEG | (2) EGF | (3) FGH | (4) EFG | (5) FGE |
| 7. | ADGJ : BEHK :: KNQT : ? | | | | |
| | (1) LOPS | (2) LMRU | (3) LORU | (4) LMPS | (5) LNQT |
| 8. | HJLN : PRTV :: BDFH : ? | | | | |
| | (1) JKOR | (2) JMOR | (3) JLNP | (4) JMNP | (5) JKOP |
| 9. | QSUW : XZBD :: BDFH : ? | | | | |
| | (1) IMOK | (2) IMKO | (3) IKMO | (4) HKMO | (5) JKMO |
| 10. | DRIVEN : NEVIRD :: BEGUM : ? | | | | |
| | (1) EBGUM | (2) MUGEB | (3) MEUBG | (4) UGMEB | (5) EBGUM |

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 alternatives to fill the gaps.

- | | | | | | |
|-----|-------------------------------|-----------|----------|----------|-----------|
| 11. | YVP, WTN, URL, | | | | |
| | (1) TQL | (2) SRJ | (3) SPJ | (4) TRJ | (5) TPJ |
| 12. | QPO, NML, KJI, HGF, | | | | |
| | (1) ECD | (2) CEG | (3) CDE | (4) CEF | (5) EDC |
| 13. | AB, DEF, HIJK,, STUVWX | | | | |
| | (1) MNOPQ | (2) LMNOP | (3) LMNO | (4) MNOP | (5) QRSTU |
| 14. | GTB, CYV, YDP,QND | | | | |
| | (1) DIV | (2) UIJ | (3) DDV | (4) UVV | (5) VJK |
| 15. | KJAM, GGWJ,, YAOD, UXKA | | | | |
| | (1) CDUI | (2) DFTC | (3) CDTF | (4) CDSG | (5) DEVG |

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 it and indicate as per "Instructions".

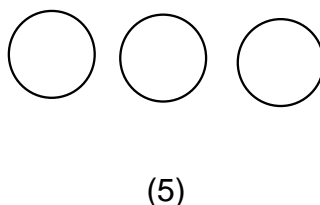
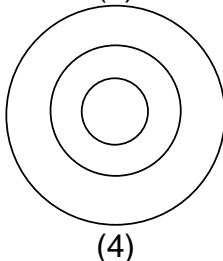
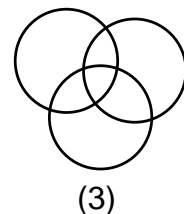
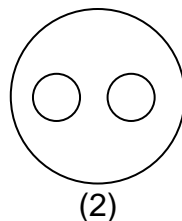
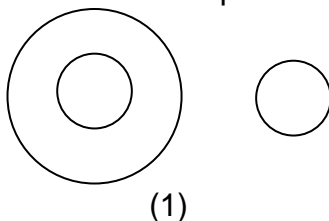
16. (1) Asia (2) Europe (3) Antarctica (4) Africa
(5) Austria
17. (1) Brazil (2) Bangladesh (3) China (4) Cambodia
(5) Mangolia
18. (1) Hyderabad (2) Itanagar (3) Patna (4) Mysore
(5) Trivandram
19. (1) Hard disk (2) Monitor (3) Keyboard (4) Mouse
(5) Windows XP
20. (1) Spider (2) Butterfly (3) Cockroach (4) Mosquito
(5) Housefly

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 the relationship is the same as for the other pair. Identify the correct answer and indicate it as per "Instructions".

21. French : France :: Dutch:?
(1) Holland (2) Norway (3) Fiji (4) Sweden
(5) Denmark
22. India : Mango :: New Zealand: ?
(1) Apple (2) Pineapple (3) Kiwi (4) Grapes
(5) Strawberry
23. Player : Coach :: Pupil :?
(1) Word (2) Teacher (3) Class (4) School
(5) Education
24. The Race of My Life : Milkha Singh :: The Test of My Life : ?
(1) Gandhi (2) Yuvraj Singh
(3) Sachin Tendulkar (4) Kapil Dev (5) Ricky Ponting
25. TRS : CAR :: SAMAJWADI PARTY : ?
(1) Bow and Arrow (2) Elephant (3) Arrow (4) Bicycle
(5) Rising Sun

Directions:

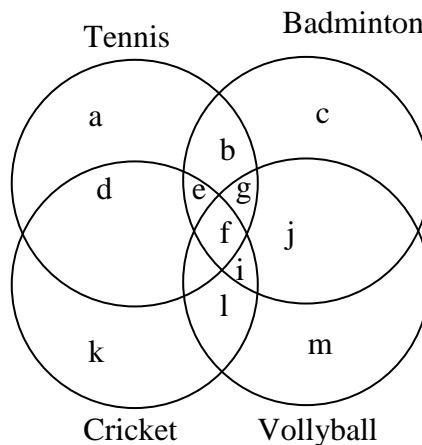
Questions (26 to 30) are based on the following diagrams. Study them carefully and indicate correct answer as per "Instructions."



26. Doctor, Patient, Human being
27. Sparrows, Crows, Eagles
28. Artists, Singers, Women
29. Hour, Minutes, Seconds.
30. Yak, Zebra, Bear

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 "Instructions".



31. Which letter represents the set of persons who play all the games?
 (1) e (2) g (3) f (4) h (5) i
32. Which letter represents the set of persons who play tennis and badminton only?
 (1) a (2) b (3) c (4) e (5) g
33. Which letter represents the set of persons who play only cricket?
 (1) d (2) h (3) k (4) l (5) f
34. Which letter represents the set of persons who play all the other three games except cricket?
 (1) e (2) b (3) j (4) g (5) i
35. Which letter represents the set of persons who play tennis, badminton and cricket but not volleyball?
 (1) a (2) b (3) c (4) e (5) g

Directions Questions (36 to 38) : If in certain language CHARCOAL is coded as 45164913 and MORALE is coded as 296137, how are the following words coded? Identify the right answers and indicate it as per the "Instructions".

36. REAL
 (1) 6713 (2) 6513 (3) 6719 (4) 6519 (5) 6715
37. COACH
 (1) 49148 (2) 48246 (3) 49145 (4) 49246 (5) 49146
38. COLLAR
 (1) 397758 (2) 497758 (3) 483359 (4) 493376 (5) 395576

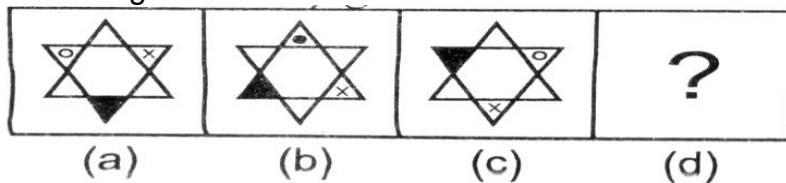
Directions Questions (39 to 42): are based on simple arithmetic principles. Find the right answer from the alternatives and indicate it as per the "Instructions".

39. If $\sqrt{625} = 25$, then value of $16 \times \sqrt{0.000625}$ equal to.....
 (1) 0.040 (2) 0.004 (3) 0.400 (4) 4.000
 (5) None of these
40. $1 + \frac{2}{1 + \frac{2}{1 + \frac{4}{1 + \frac{5}{5}}}} = \dots$
 (1) $\frac{7}{4}$ (2) $\frac{4}{7}$ (3) $\frac{7}{5}$ (4) $\frac{3}{7}$ (5) $\frac{5}{7}$
41. $\frac{0.125 + 0.027}{0.5 \times 0.5 + 0.09 - 0.15}$ is equal to.....
 (1) 1 (2) 0.8 (3) 0.08 (4) 0.2 (5) 0.88
42. If $\frac{x}{4} - \frac{x-3}{6} = 1$, then $x = \dots$
 (1) 1 (2) 3 (3) 4 (4) 6 (5) 2

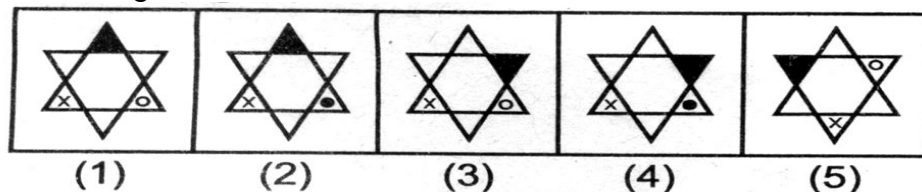
Directions Questions (43 to 46):

Each question has four problem figures a, b, c, and d. Figure 'd' has only a question mark '?'. Figure 'b' bears certain relationship to 'a', similarly one of the answer figures bears similar relationship to 'c'. Find out and indicate it as per "Instructions."

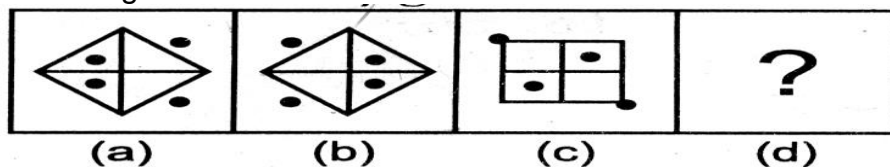
43. Problem figures



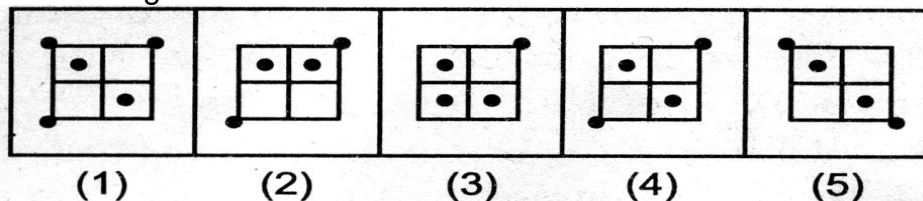
Answers figures



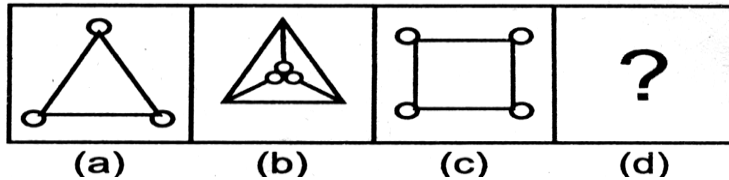
44. Problem figures



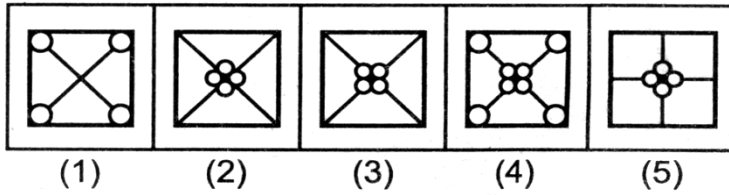
Answers figures



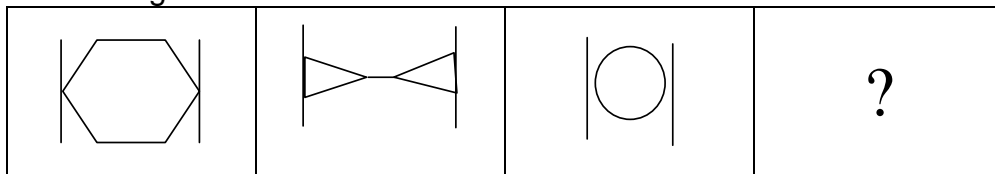
45. Problem figures



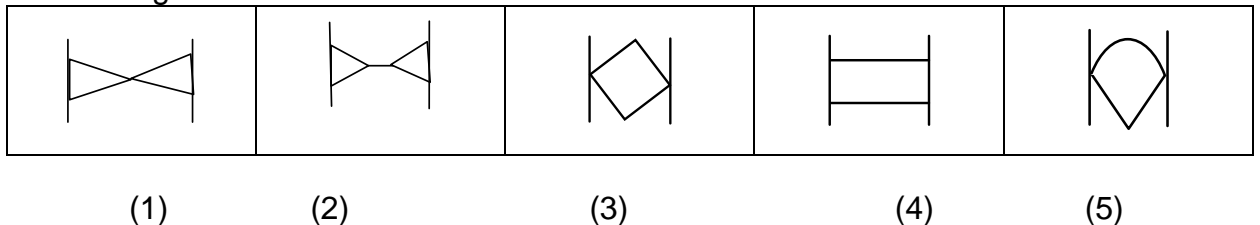
Answers figures



46. Problem figures

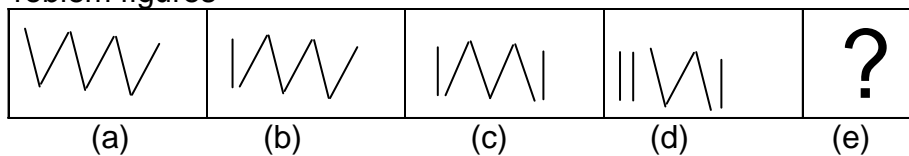


Answers figures

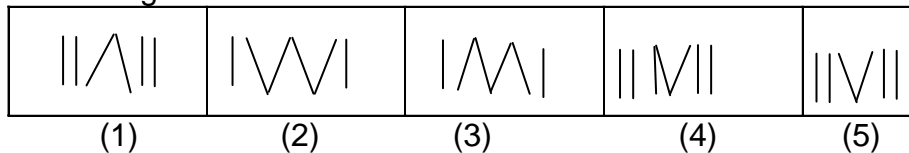


Direction Questions (47 to 50) : In these questions, there are five problem figures (a), (b), (c), (d) and (e). Figure in (e) is, however, missing. You have to select one figure from the five answer figures (1), (2), (3), (4) and (5) such that the series is completed. Indicate your answer as per the "Instructions"

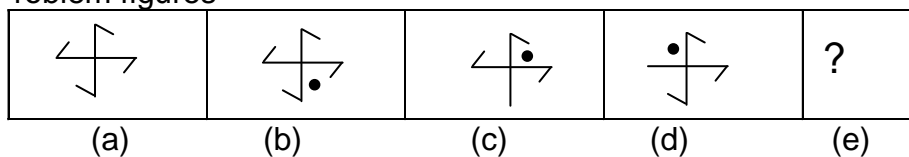
47. Problem figures



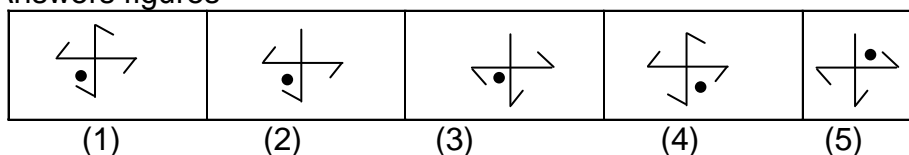
Answers figures



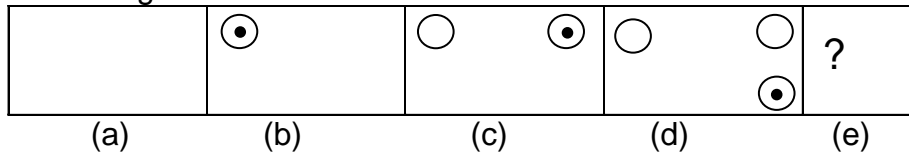
48. Problem figures



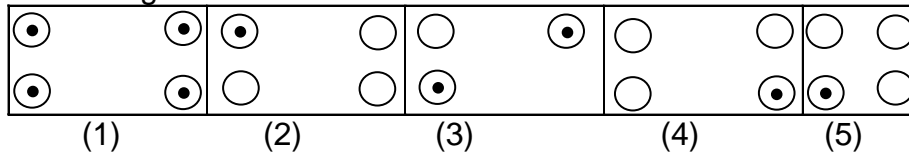
Answers figures



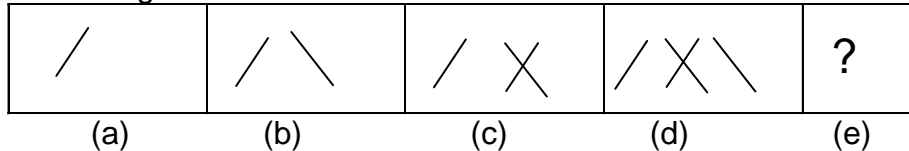
49. Problem figures



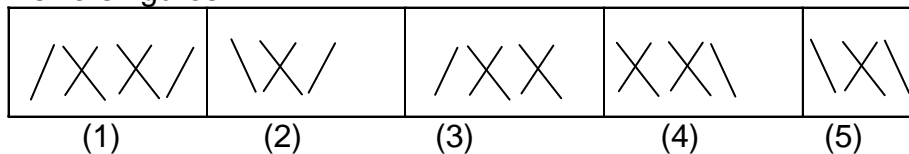
Answers figures



50. Problem figures



Answers figures



ENGLISH

Directions : Questions (51 - 55) :

Read the following passage.

Petroleum products, such as gasoline, kerosene, home heating oil, residual fuel oil and lubricating oils have a common source - crude oil that is found below the Earth's surface and under huge water bodies from a few hundred feet below the surface to as deep as 25,000 feet into the interior of Earth. Sometimes crude oil is secured by drilling a hole through the Earth, but more dry holes are drilled than those producing oil. Crude oil comes to the surface as result of pressure at the source or pumping. Crude oil wells flow at varying rates, from ten to thousands of barrel per hour. Petroleum products are always measured in 42 gallon barrels.

Petroleum products vary greatly in physical appearance : thin, thick, transparent or opaque, but regardless their chemical composition is made up of only two elements : Carbon and Hydrogen which form compounds called Hydrocarbons. Other chemical elements found in union with the hydrocarbons are few and are classified as impurities. Trace elements are also found, but in such minute quantities that they are disregarded. The combination of carbon and hydrogen forms many thousands of compounds which are possible because of the various positions and joinings of these two atoms in the hydrocarbon molecule.

The various petroleum products are refined from the crude oil by heating and condensing the vapours. Light oils such as gasoline, kerosene and distillate oil are the products. The residue remaining after the light oils are distilled is known as heavy or residual fuel oil, and is used mostly for burning under boilers. Additional complicated refining processes rearrange the chemical structure of the hydrocarbons to produce other products, some of which are used to upgrade and increase the octane rating of various types of gasolines.

Now answer the following questions.

51. The statement that is not true is ...
(1) Crude oil is found below land and water.
(2) Crude oil is always found a few hundred feet below the surface.
(3) A variety of petroleum products is obtained from crude oil.
(4) Pumping and pressure, forces crude oil to the surface.
52. Many thousands of hydrocarbons are possible because
(1) The petroleum products vary greatly in physical appearance.
(2) The atoms in the molecule assume many positions.
(3) The pressure needed to force it to the surface causes molecular transformation.
(4) Complicated refining processes rearrange the chemical structure.
53. The statement that is true is
(1) The various petroleum products are produced by filtration.
(2) Heating and condensation produces the various products.
(3) Chemical separation is used to produce the various products.
(4) Mechanical means such as the centrifuge are used to produce the various products.
54. The crude oil is brought to the surface through
(1) Expansion of the hydrocarbons. (2) Pressure and pumping.
(3) Vacuum created in the drilling pipe.
(4) Expansion and the contraction of Earth's surface
55. Which of the following is not listed under light oils ?
(1) Distillate oil (2) Gasoline (3) Lubricating oil (4) Kerosene

Read the following passage.

When life was rugged and simple, man's needs were few and he could supply them all. As he advanced from lone hunter to farmer and builder and exchanged a solitary existence for greater comfort and security of community life, he realized that he must come to an agreement with his neighbours on a common system of measurement. How can men build a house or a storage hut, or a temple unless all the builders use the same basic measurements ?

The very earliest measurements were for length. The bases for the measures were those most natural - a foot, a palm, a span of the hand. When building alone, man could use his own body. But on community projects, a common standard was required. The leader's measurements were taken and marked off on a stick or a stone. Crude copies were made from the original and passed out for use. Later the foot gradually evolved to become twelve inches long.

Now answer the questions given below.

56. The best title for the article could be.....
(1) Building a hut. (2) Man's early problems.
(3) Development of a standardized measurement.
(4) The growth of communities.
57. The advance of man from solitary to common life created
(1) a decrease in his needs.
(2) the dominance of tribal leaders.
(3) a great demand for storage huts.
(4) a need for standards of measurement.

58. Some standardization of measurement occurred
- (1) as a result of a dispute over the proper size of a hut.
 - (2) because everyone's foot used to be almost the same length.
 - (3) due to the accidental discovery that a foot equaled twelve inches.
 - (4) when the leader's measurements replaced the individuals.
59. The author of the passage develops his point by means of
- (1) factual explanation.
 - (2) comparison and contrast.
 - (3) arguments and proof.
 - (4) persuasion.
60. A person who has a solitary existence lives
- (1) quietly.
 - (2) alone.
 - (3) with others.
 - (4) in jail.

Read the following passage.

The body of primitive man, a far away and primitive man called Homosapiens, so far as we can reconstruct from the fragmentary evidence we have, was exactly like our own and his brain was as big as that of modern man and quite as complicated in structure. His intelligence and his ability to learn were probably as great as that of the average man today, but he had a very meagre inheritance of knowledge.

The use of tools and weapons of a primitive sort was probably passed on from the subhuman creatures, who had learned how to break stones and use the sharp edged pieces for cutting and scraping and how to use a short, heavy stick for a club and a long pointed one for a spear. The subhuman creatures knew how to make use of fire, when they found it, but they did not know how to make it.

They had probably also discovered the advantages of social living; that several families living together in a tribe could offer each other help and protection and that hunters killed more game if they bonded together and had a leader to direct the hunt. The discovery that social living decreased the odds in favour of survival was, perhaps, primitive man's greatest discovery -greater than either the discovery of fire or the invention of the wheel.

Now answer the following questions.

61. What we know of primitive man is based upon
- (1) pieces of evidence.
 - (2) a great deal of evidence.
 - (3) no evidence.
 - (4) pictures in caves.
62. The first real man
- (1) was unintelligent.
 - (2) was incapable of learning.
 - (3) received .very little knowledge from his ancestors.
 - (4) received a great store of knowledge from his ancestors.
63. According to the passage, man became a social being because.....
- (1) co-operation was necessary for survival.
 - (2) in prehistoric times only the strongest survived.
 - (3) by nature he is a social being.
 - (4) he was compelled to do so.
64. A direct result of primitive man's discovery of the advantages of social living, was
- (1) family
 - (2) tribe
 - (3) city
 - (4) nation
65. According to the passage, we can say that the author is of the opinion that man's discovery of the advantages of social living is ...
- (1) significant.
 - (2) of great significance.
 - (3) insignificant.
 - (4) well known.

Directions :

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.

The postal service is the government agency 66 handles the mail. Its job is 67 letters and packages to people and businesses all over the world. Its 68 is to see that your mail gets to its destination 69 possible. People 70 the postal service to deliver important letters and even valuables 71 time to the right person.

- | | | | | |
|-----|----------------------|-----------------|---------------------|-------------------|
| 66. | (1) the fact that | (2) whether | (3) of which | (4) that |
| 67. | (1) being delivered | | (2) to be delivered | |
| | (3) having delivered | | (4) to deliver | |
| 68. | (1) idea | (2) goal | (3) plan | (4) demand |
| 69. | (1) less quickly | (2) too quickly | (3) so quickly that | (4) as quickly as |
| 70. | (1) back out | (2) check out | (3) rely on | (4) figure out |
| 71. | (1) to | (2) for | (3) by | (4) on |

Questions (72 & 73) :

The following sentences come from a paragraph. The first and the last parts/sentences are given. Choose the order in which the three sentences/parts (PQR) should appear to complete the paragraph.

72. S1 - Of the many questions
(1) S2
(2) S3
(3) S4
(4) S5
(5) S5 - than any others.

Choose from the options given below

- P - interviewers over the last ten years.
Q - that I have been asked by.
R - two have recurred more frequently.

Choose from the options given below.

- (1) QRP
(2) PRQ
(3) QPR
(4) RQP

73. S1 - A woman lives alone with her little daughter
S2 -
S3 -
S4 -
S5 - Presents given by the patients when they get discharged.
P - and she often brings home for her daughter.
Q - the woman works as charwoman at a hospital
R - whom she loves very much.

Choose from the options given below

- (1) QRP
- (2) RQP
- (3) PRQ
- (4) RPQ

Directions Questions (74 to 77):

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

- 74. (1) mercenary (2) machinery (3) missionary (4) visionary
- 75. (1) quintessence (2) inquisitive (3) falsehood (4) reliable
- 76. (1) occasionally (2) quarantine (3) reminiscence (4) withdrawel
- 77. (1) implement (2) laboratory (3) flourescent (4) lieutenant

Directions Questions (78-85):

Select the most appropriate option to fill in the blanks from the given alternatives.

- 78. I am writing this essay blue ink.
(1) in (2) with (3) from (4) on
- 79. Rahul thinks that his car is than my car.
(1) expensive (2) more expensive (3) most expensive (4) more expensive
- 80. Have you ever abroad?
(1) went (2) been (3) go (4) to
- 81. Anandan has been told he will have to pay the fine his high rank in the military
(A) even if (B) further more (C) on grounds that (D) despite
- 82. Robert Fulton the steam boat. He displayed his new invention on the banks of the Hudson river.
(!) discovered (2) invented (3) covered (4) drove
- 83. Bhimrao Ramji Ambedkar is known Baba Saheb Ambedkar.
(1) poorly (2) famous (3) popularly (4) popular
- 84. I am the owner of this company.
(1) seal (2) sole (3) sale (4) soul
- 85. The inhabitants of our village claim that pedestrians have no choice but to risk their lives crossing the dangerous road as there is..... a pedestrian bridgea cross walk.
(1) not only / but also (2) both / and
(3) neither / nor (4) no sooner / than

Directions Questions (86 to 90) :

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

- 86. break into
(1) to enter by force (2) to stop (3) to reveal (4) to support
- 87. turn down
(1) to give back (2) to refuse (3) to bring (4) to arrive
- 88. put off
(1) become weak (2) to wear
(3) postpone (4) provide lodging and food.

89. look down
 (1) to search for (2) to take care of
 (3) to be careful about (4) to despise
90. account for
 (1) to explain (2) to recommend (3) to obey (4) to request

Directions Questions (91 - 95) :

Select the word which means the same as the given words.

91. distraught
 (1) composed (2) calm (3) agitated (4) pleased
92. outclassed
 (1) overcame (2) suppress
 (3) went out of the class (4) taking the class out
93. precocious
 (1) stupid (2) talented (3) backward (4) dim-witted
94. complacent
 (1) discontent (2) apprehensive (3) annoyed (4) self satisfied
95. malicious
 (1) benevolent (2) harmful (3) kind hearted (4) gracious

Directions Questions (96 - 100) :

Select the word which means (opposite of the given words)

96. rescue
 (1) redeem (2) release (3) harm (4) liberate
97. flimsy
 (1) weak (2) sturdy (3) feeble (4) frail
98. unleash
 (1) restrain (2) let loose (3) vent (4) unbind
99. collide
 (1) adjust (2) bump (3) strike (4) crash
100. brawl
 (1) riot (2) wrangle (3) peace (4) dispute

PHYSICS

101. Consider the motion of the tip of the minute hand of a clock in one hour. Which of the following statement is wrong?
 (1) The average speed of the tip is zero
 (2) Average acceleration of the tip is zero
 (3) Average velocity of the tip is zero
 (4) the displacement of the tip is zero
102. A body is projected vertically up with a speed ' u '. The time taken by the body to return back to ground is....
 (1) $t = \frac{u}{g}$ (2) $t = \frac{2u}{g}$ (3) $t = \frac{1}{2}(ug)$ (4) $t = \frac{4u}{g}$
103. A body of mass 5 kg initially at rest is moved by a horizontal force of 2N on a smooth horizontal surface. The work done by the force in 10 seconds is.....
 (1) 10 J (2) 50 J (3) 40 J (4) 20 J

104. A retardating force of 150 N is applied to a body of mass 50 kg which is moving with a speed of 30 m/s. The time taken by the body to come to rest is....
 (1) 20 seconds (2) 30 seconds (3) 5 seconds (4) 10 seconds
105. A man standing between two parallel cliffs fires a gun. If he hears first and second echoes after 1.5 seconds and 3.5 seconds respectively, then the distance between two cliffs is....(Take velocity of sound in air as 340 m/s)
 (1) 1190 m (2) 850 m (3) 595 m (4) 510 m
106. The characteristic of sound that would result in an increase in loudness of a sound is...
 (1) Amplitude (2) Speed (3) Pitch (4) Quality
107. Of the following, the specific heat is minimum for...
 (1) water (2) sea-water (3) kerosene oil (4) mercury
108. A fan produces a feeling of comfort because....
 (1) fan supplies a cool air (2) evaporation of sweat
 (3) fan cools the air (4) fan increases humidity in air
109. A radii of curvature of two faces of a biconvex lens of refractive index are in the ratio of 2:3. The focal length of the lens is 12 cm. The radius of curvature of the surface with low value of radius of curvature is...
 (1) 5 cm (2) 10 cm (3) 15 cm (4) 20 cm
110. The change in focal length of an eye lense is caused by the action of...
 (1) pupil (2) retina (3) ciliary muscles (4) iris
111. If a charge 3 C experiences a force of 3000 N when it is moved in a uniform electric field, then the potential difference between two points separated by distance of 1 cm is....
 (1) 10 V (2) 1000 V (3) 3000 V (4) 9000 V
112. n conducting wires of same dimensions, but having resistivities 1, 2, 3,... n are connected in series. The equivalent resistivity of the combination is....
 (1) $\frac{n(n+1)}{2}$ (2) $\frac{n+1}{2n}$ (3) $\frac{n+1}{2n}$ (4) $\frac{2n}{n+1}$
113. A body of mass 2 kg starts from rest and moves with uniform acceleration. It acquires a velocity of 20 m/s in 4 seconds. The power exerted on the body in 2 seconds is....
 (1) 50 watts (2) 100 watts (3) 150 watts (4) 200 watts

CHEMISTRY

114. Miscible liquid among the following is....
 (1) alcohol in water (2) milk (3) oil in water (4) kerosene in water
115. The number of atoms constituting a molecule is known as
 (1) valency (2) atomicity (3) mole concept (4) atomic mass
116. Which of the following is an element?
 (1) Mercury (2) Ammonia (3) Water (4) Glucose
117. The dyes of an ink can be separated by....
 (1) filtration (2) sublimation (3) fractional distillation (4) chromatography
118. Molecular mass of H_2SO_4 is.....
 (1) 58.5 (u) (2) 98 (u) (3) 36.5 (u) (4) 35.5 (u)
119. The number of neutrons in an atom of $^{23}_{11}\text{X}$ is...
 (1) 23 (2) 11 (3) 34 (4) 12
120. The maximum number of electrons that can be accommodated in the 'L' shell of an atom is.....
 (1) 2 (2) 4 (3) 8 (4) 16
121. The isotope used in the treatment of cancer is...
 (1) Iodine (2) Cobalt (3) Carbon (4) Hydrogen

122. Molecular formula of baking soda is....
 (1) Na_2CO_3 (2) NaCl (3) NaHCO_3 (4) NaOH
123. The Quantum number which explain about size and energy of the orbit or shell is....
 (1) Principle quantum number (2) Angular momentum quantum number
 (3) Magnetic quantum number (4) Spin quantum number
124. The valency of the element with atomic number '10' is.....
 (1) 2 (2) 8 (3) 10 (4) 0
125. The impurity present in the ore is called...
 (1) gangue (2) flux (3) slag (4) mineral
126. The allotrope of Carbon in amorphous form among the following is....
 (1) Diamond (2) Graphite (3) buckminsterfullerene (4) Coal

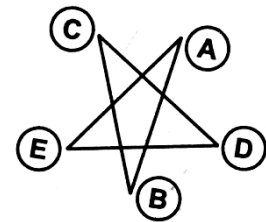
BIOLOGY

127. Choose the correct statement/statements from the following.
 (A) Blood is a substance which contains liquid particles
 (B) Lymph is the substance that contains blood without solid particles.
 (C) Blood is a substance which contains solid and liquid particles
 (D) The liquid portion after formation of a blood clot is serum.
 (1) A, B (2) A, C (3) B, C, D (4) A, C, D
128. Which of the following are secondary metabolites?
 (A) Carbohydrates (B) Tannins (C) Proteins (D) Gums
 (E) Alkaloids
 (1) A, D (2) B, C (3) A, D, E (4) B, D, E
129. Master gland is controlled by...
 (1) Cerebellum (2) Cerebrum (3) Medulla (4) Diencephalon
130. One of the following is a mismatched pair.
 (1) Gibberellins - delaying dormancy in seeds
 (2) Ethylene - ripening of fruit.
 (3) Auxins - cell elongation
 (4) Absciscic acid - closing of stomata
131. An average Gestation period in Human beings is.....
 (1) 290 days (2) 280 days (3) 275 days (4) 300 days
132. An embryo sac of flowering plant contains.....
 (1) Eight cells, Seven nuclei (2) Seven cells, Seven nuclei
 (3) Seven cells, Eight nuclei (4) Eight cells, Eight nuclei
133. Endosperm is...
 (1) $2n$ (2) $3n$ (3) $4n$ (4) N
134. Choose the correct statement/statements from the following.
 (A) Inter phase has three phases
 (B) Inter phase is the resting stage between two divisions
 (C) Inter phase is the period when genetic material makes its copy.
 (D) Inter phase is the active phase between two divisions.
 (1) A, B (2) B, C (3) A, B, C (4) A, C, D
135. Selective Permeability means.....
 (1) it allows entry of certain substances only.
 (2) it allows exit of certain substances only.
 (3) it allows passage of all solutes and solvents.
 (4) it allows entry and exit of certain substances and prevents remaining substances
136. In which of the following organs, cell division does not taken place?
 (1) Bone marrow and Brain. (2) Fertilized egg and Bone marrow.
 (3) Cancer cells in different organs (4) Brain and Heart.

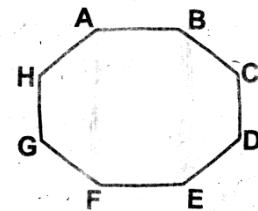
137. The plants which having naked seeds....
 (1) Bryophytes (2) Gymnosperms (3) Angiosperms (4) Thallphytes
138. The largest organ among the following.....
 (A) Liver (2) Stomach (3) Skin (4) Lungs
139. Lenticels are found in.....
 (A) Leaves (2) Flowers (3) Roots (4) Stems
140. Anger is caused by increased levels of the following hormone.
 (A) Somatotropin (2) Thyroxine (3) Testosterone (4) Adrenaline

MATHEMTICS

141. 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) 29 (2) 85 (3) 250 (4) 133
142. Suppose that
 $4^{x_1} = 5, 5^{x_2} = 6,$
 $6^{x_3} = 7, \dots, 127^{x_{124}} = 128$
 what is $x_1 \cdot x_2 \cdot x_3 \dots x_{124}$?
 (1) 2 (2) $\frac{5}{2}$ (3) 3 (4) $\frac{7}{2}$
143. Let a, b, c, d, e, f, g and h be distinct elements in the set $\{-7, -5, -3, -2, 2, 4, 6, 13\}$.
 What is the minimum possible value of
 $(a + b + c + d)^2 + (e + f + g + h)^2 = ?$
 (1) 30 (2) 32 (3) 34 (4) 40
144. A positive integer n has 60 divisors and 7 n has 80 divisors and 7 n has 80 divisors.
 hat is the greatest integer k such that 7^k divides n?
 (1) 0 (2) 1 (3) 2 (4) 3
145. In the five-sided star shown, the letters A, B, C, D and E are replaced by the numbers 3, 6, 7 and 9 although not necessarily in that order. The sums of the numbers at the ends f the line segments $\overline{AB}, \overline{BC}, \overline{CD}, \overline{DE}$ and \overline{EA} form an arithmetic sequence although not necessarily in that order. What is the middle term of the arithmetic sequence?
 (1) 9 (2) 10
 (3) 11 (4) 12
146. The sum of 49 consecutive integers is 7^5 , what their median?
 (1) 7 (2) 7^3 (3) 7^2 (4) 7^4
147. The second and fourth terms of geometric sequence are 2 and 6. Which of the following is a possible first term?
 (1) $-\sqrt{3}$ (2) $-\frac{2\sqrt{3}}{3}$ (3) $-\frac{\sqrt{3}}{3}$ (4) $\sqrt{3}$
148. What is the largest integer that is a divisor of $(n+1)(n+3)(n+5)(n+7)(n+9)$ for all positive even integers n?
 (1) 3 (2) 5 (3) 11 (4) 15



149. A regular octagon ABCDEFGH has an area of one square unit. What is the area of the rectangle ABEF?



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

150. If $\log(xy^3) = 1$ and $\log(x^2y) = 1$, then $\log(xy) = ?$

- (1) $\frac{3}{5}$ (2) 0 (3) $\frac{1}{2}$ (4) $-\frac{1}{2}$

151. If a, b, c, d are positive real numbers such that a, b, c, d form an increasing arithmetic sequence and a, b, d form a geometric sequence, then $\frac{a}{d}$ is.....

- (1) $\frac{1}{12}$ (2) $\frac{1}{6}$ (3) $\frac{1}{4}$ (4) $\frac{1}{3}$

152. The sum of 18 consecutive positive integers is a perfect square. The smallest possible value of this sum is...

- (1) 169 (2) 225 (3) 289 (4) 361

153. The mean, median, unique mode and range of a collection of eight integers are all equal to 8. The largest integer that can be an element of this collection is...

- (1) 11 (2) 12 (3) 13 (4) 14

154. Let A, M and C be non-negative integers such that $A + M + C = 12$; what is the maximum value of $A.M.C + A.M + M.C + C.A$?

- (1) 112 (2) 62 (3) 72 (4) 92

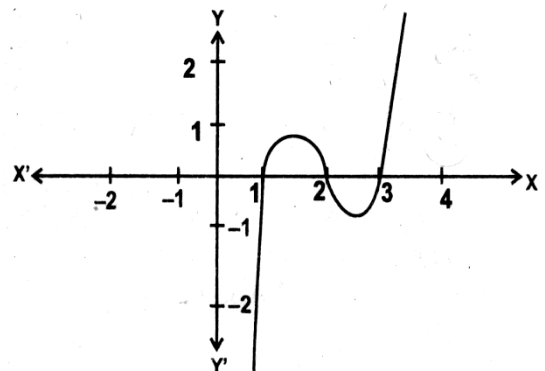
155. In triangle ABC, $3 \sin A + 4 \cos B = 6$ and $4 \sin B + 3 \cos A = 1$, then $\angle C$ in degrees is.....

- (1) 30 (2) 60 (3) 90 (4) 120

156. The graph below represents a polynomial $p(x)$

Which of these is the remainder, when $p(x)$ is divided by the polynomial $x^2 - 5x + 6$?

- (1) 1 (2) 3
(3) $x-1$ (4) 0



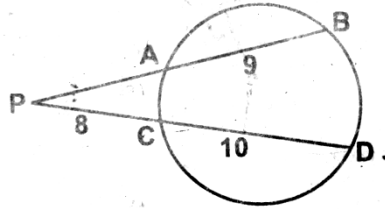
157. If $\sqrt{\log_2 \sqrt{x+2} - 2} = 0$ then x is equal to.....

- (1) 34 (2) 16 (3) 8 (4) 12

158. $2^{3x} = 64^{-1}$ and $10y = 0.01$, then the value of $(50x)^{-1} (10y)^{-1}$ is...

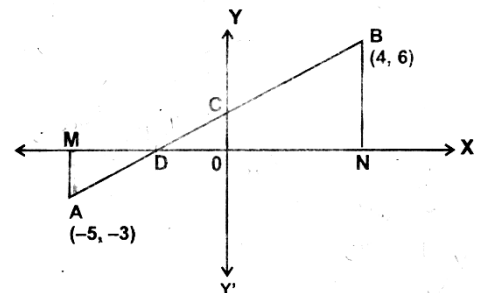
- (1) 1 (2) -1 (3) 2 (4) -2

159. PAB, PCD are two secants. AB = 9 cm, PC = 8 cm and CD = 10 cm, then the length of tangent from P to the circle, will be....



- (1) 7 cm
(3) 14 cm
160. The join of A(-5, -3) and B(4, 6) intersects the X-axis at D and the Y-axis at C respectively. AM, BN are perpendiculars on the X-axis. Find the area $\triangle AMD$: area $\triangle DCO$.

- (1) 2 : 3
(3) 4 : 9
- (2) 9 : 4
(4) 3 : 2



SOCIAL STUDIES

161. Which of the following treaty recognised Greece as an Independent nation?
(1) Treaty of Vienna of 1815. (2) Treaty of Constantinople of 1832.
(3) Treaty of Paris of 1783. (4) Treaty of Frankford of 1781.
162. In which year was the "Tonkin Free School" established in Vietnam?
(1) 1907 (2) 1917 (3) 1927 (4) 1937
163. Who was the author of Hind Swaraj?
(1) Mahatma Gandhi (2) C.R. Das
(3) Motilal Nehru (4) Jawahar Lal Nehru
164. Under whose presidency, the Lahore Congress formalised the demand of 'Purna Swaraj' or Full Independence for India?
(a) Motilal Nehru (2) Jawahar Lal Nehru
(3) Vallabhai Patel (4) Pattabhi Sitaramaiah
165. United Nations Monetary and Financial Conference was held in
(1) July 1944 (2) June 1939 (3) September 1945 (4) March 1947
166. The East India Company obtained Bombay from
(1) The Dutch (2) The Danes (3) The French (4) The Portuguese
167. What does the term "Suffrage" mean?
(1) Right to Freedom (2) Right to Live
(3) Right to Education (4) Right to Vote.
168. Match list A with B and select the correct answer from the codes given below the lists.

(A)	(B)
(A) Kandukuri Veereshalingam	(i) Saudamini.
(B) Ramshankar Ray	(ii) Manjughosha.
(C) Chandu Menon	(iii) Rajashekhara Charitam.
(D) Srinivas Das	(iv) Indulekha
(E) Naro Sadashiv Risbud.	(v) ParikshaGuru.

Codes:

(1) a-ii, b-iii, c-i, d-iv, e-v

(2) a-iii, b-i, c-iv, d-v, e-ii

- (3) a–iii, b–iv, c–ii, d–v, e–i (D) a–ii, b–i, c–iv, d–v, c–iii
169. The Governor-General who persecuted James Augustus Hickey for starting the Bengal Gazette, a weekly magazine was
 (1) Warren Hastings (2) Lord Cornwallis
 (3) Sir John Shore (4) Lord Wellesly
170. Who of the following was not one of the founders of the Khilafat Committee formed in the wake of the dismemberment of the Turkish empire which was perceived as undermining the position of the Sultan of Turkey (The Caliph)?
 (1) Mohammed Au Jinnah (2) Maulana Shaukat Au
 (3) Muhammed Ali (4) None of the above
171. As a result of the Poona Pact, the number of seats reserved for the depressed classes out of general electorate seats were
 (1) increased (2) decreased
 (3) retained at the same level (4) abolished
172. Find the one which is not correct.
 (1) Civil Disobedience Movement – 1930
 (2) Gandhi-Irwin Pact – 1931
 (3) Second Round Table Conference – 1932
 (4) None of the above.
173. Who abolished slavery in the French Colonies?
 (1) Jacobins (2) Napoleon Bonaparte
 (3) Directory Government (4) National Assembly
174. “Kulaks” are
 (1) Members of Duma.
 (2) The wealthy peasants of Old Russia.
 (3) The majority group of Russian Social Democratic Labour party.
 (4) Small peasants.
175. Who gave the slogan “One people, One empire and One vote”?
 (1) Hitler (2) Napoleon Bonaparte
 (3) Lenin (4) Benito Mussolini
176. Which of the following statement is correct?
 (1) Over irrigation responsible for degradation in Punjab Haryana.
 (2) Mining is responsible land degradation Jharkhand.
 (3) Over grazing is one of the main reason for land degradation in Maharashtra.
 (4) All the above.
177. Red soil develops on
 (1) Basalt rocks (2) Dolomite rocks
 (3) Limestone (4) Crystalline igneous rocks
178. Initially, Coffee cultivation was introduced on the
 (1) Baba Budan Hills (2) Naga Hills
 (3) Balaghat Range (4) Nallamala Hills
179. Which of the following is not correctly matched?
 (1) Bandavgarh National Park–Madhya Pradesh
 (2) Periyar Tiger Reserve – Kerala
 (3) Manas Tiger Reserve–Assam
 (4) Buxa Tiger Reserve–Karnataka
180. The largest Solar energy plant is located at
 (1) Manikarm in Himachal Pradesh. (2) Madhapur in Bhuj.
 (3) Ramagundam in Telangana. (4) Korba in Madhya Pradesh.
181. Which one of the following minerals is formed by decomposition of rocks, leaving a residual mass of weathered material?
 (1) Coal (2) Bauxite (3) Copper (4) Iron
182. Which of these is the largest producer of Jowar?

- (1) Karnataka (2) Andhra Pradesh
(3) Madhya Pradesh (4) Maharashtra
183. Which one of the following minerals is contained in the Monazite sand?
(1) Lignite (2) Thorium
(3) Barytes (4) Limestone
184. Jute textiles are located mainly along the banks of the river Hugh. Which of these is not a reason for this?
(1) Proximity of the jute producing areas.
(2) Abundant sea water for processing raw jute.
(3) In expensive water transport.
(4) Cheap labour from West Bengal and adjoining states of Bihar and Orissa.
185. How many tonnes of Bauxite is needed for the preparation of 1 tonne of Aluminium?
(1) 2 to 4 tonnes (2) 2 to 6 tonnes (3) 4 to 6 tonnes (4) 6 to 8 tonnes
186. When was the Border Road Organisation established?
(1) 1955 (2) 1960 (3) 1965 (4) 1970
187. Identify the rain shadow region from the given areas.
(1) Vishakapattanam (2) Pune
(3) Karaikal (4) Chennai
188. What is River Brahmaputra known as in Bangladesh?
(1) Tsang Po (2) Padma (3) Dihang (4) Jamuna
189. Which is the youngest land mass in India?
(1) Northern Plains. (2) Himalayan Mountains.
(3) Peninsular Plateau. (4) Andaman and Nicobar islands.
190. "Duns" are formed in between
(1) Greater Himalayas and lesser Himalayas.
(2) Lesser Himalayas and Sivaliks.
(3) Sivaliks and Bhabur.
(4) Bhabur and Terai.
191. The President of the World Bank has always been a citizen of the US, conventionally nominated by the...
(1) UN Secretary General.
(2) Treasure Secretary General of the US Government.
(3) Managing Director, International Monetary Fund.
(4) President of the European Union
192. Which of the following statements is not correct?
(1) In Saudi Arabia, a woman does not have the right to vote.
(2) In Fiji, the electoral systems is such that the vote of an indigenous Fiji has more value than that of an Indian - Fijian.
(3) In Mexico, during 1930 - 2000 elections, PRI (Institutional Revolutionary Party) has been winning through free and fair elections.
(4) None of the above.
193. Using the codes given below the lists, match list A with list B and select the correct answer.

A	B
(a) Garibi Hatao (b) Save Democracy (c) Land to the tiller. (d) Protect the self respect of the Telugus.	(i) Slogan given by N.T. Rama Rao in 1983. (ii) Slogan given by Indira Gandhi in 1971. (iii) Slogan given by Janata Party in 1977. (iv) The Left Front used this slogan in 1977.

- (1) a–ii, b–i, c–iii, d–iv
(B) a–iii, b–ii, c–i, d–iv

(3) a-iii, b-iv, c-ii, d-i

(D) a-ii, b-iii, c-iv, d-i

194. "Kittiko- Hachchiko" movement took place in this state.

(1) Karnataka (2) Uttarakhand (3) West Bengal (4) Rajasthan

195. Which of the following is not an instance of an exercise of a fundamental right?

(1) Men and women government employees get / the same salary.

(2) Parents' property is inherited by their children.

(3) Christian Missionaries set up a chain of missionary schools.

(4) Workers from Telangana go to Maharashtra to work on the farms.

196. Find the one that is wrongly matched.

(1) Prime Minister Rozgar Yojana - 1993

(2) Pradhanmantri Gramodaya Yojana – 2000

(3) Mahatma Gandhi Rural Employment Guarantee Act - 2005

(4) Swarna Jayanti Gram Swarozgar Yojana -2009

197. Which among groups had the highest poverty during 2011-12?

(1) Schedule Castes

(2) Agricultural Labourers

(3) Casual Labourers

(4) Urban Labourers

198. Who avail benefits under Antyodaya Anna Yojana?

(1) Indigent Senior citizens

(2) Backward blocks

(3) Poorest of the poor

(4) All the above.

199. Which of the following neighbouring countries has better performance in terms of life expectancy at birth than India?

(1) Pakistan

(2) Nepal

(3) Myanmar

(4) Sri Lanka

200. The founder of "Grameen Bank of Bangladesh" is

(1) Professor Mohammad Yunus

(2) Khaleda Zia

(3) Sheikh Mujibur Rahman

(4) Maulana Abdul Hamid Khan