

TELANGANA NTSE – NOVEMBER 2019

MENTAL ABILITY TEST (MAT)

Medium : ENGLISH

Time : 120 Minutes

100 Marks

MENTAL ABILITY TEST : Session – I

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 sheets as shown in the example given in the OMR sheet. For all the subsequent purposes, your Centre Code No. and Roll No. Shall remain the same as given on the Admission Card.
2. All questions carry **one** mark each.
3. Since **all** questions are **compulsory**, do not try to read through the whole question paper before beginning to answer it.
4. Begin with the first question and keep trying one question after another till you finish all three parts
5. 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
6. 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.
7. The blank pages are provided for rough work at the end of each part.
8. REMEMBER, YOU HAVE TO SHADE ANSWERS ON A SEPARATE OMR SHEET PROVIDED.
9. 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 one given for the corresponding question in the booklet.
10. Now turn to the next page and start answering the questions.
11. After the examination, you should hand over the **OMR** sheet to the Invigilator of the room.
12. 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.

MENTAL ABILITY TEST (MAT)

(Q.Nos. 1 to 100)

Max. Marks : 100

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

1. 6, 28, 120, 496,
 (1) 1035 (2) 2016 (3) 2019 (4) 1234
2. 1, 5, 15, 34, 65,
 (1) 111 (2) 76 (3) 87 (4) 104
3. 1, 43, 161, 407,
 (1) 745 (2) 614 (3) 829 (4) 725
4. 7, 31, 211, 2311,
 (1) 12 (2) 18641 (3) 20141 (4) 30031
5. 5, 23, 72,
 (1) 181 (2) 175 (3) 96 (4) 124

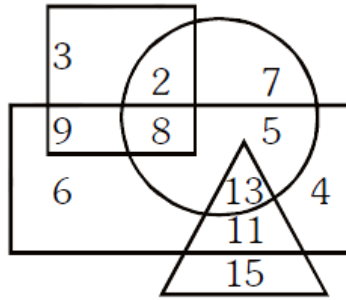
Directions: (Q: 6 to 10): In each of the following questions, a setter series is given in which some letters are missing. The missing letters are given in the proper sequence as one of the alternatives. Find the correct alternative.

6. ___ aba ___ ba _ ab
 (1) abbbba (2) abbab (3) baabb (4) bbaba
7. ab ___ b _ bbaa _
 (1) abaab (2) abbab (3) baaab (4) babba
8. _ baa _ aab _ a _ a
 (1) aabb (2) aaba (3) abab (4) baab
9. ___ babbbaa _ a ___
 (1) ababb (2) baaab (3) bbaba (4) babbb
10. ___ op ___ mo ___ n ___ pnmop _
 (1) mnpmon (2) mpnmop (3) mnompn (4) mnpomn

Directions: (Q: 11 to 15): In the following alphabet series, a term is missing as shown by question mark (?). Choose the missing term from options.

11. eac, gce, ieg, ?
 (1) jhi (2) jgi (3) kgi (4) khi
12. ejo, tyd, ins, xch, ?
 (1) nrw (2) mrw (3) msx (4) nsx
13. 2Z5, 7Y7, 14X9, 23W11, 34V13, ?
 (1) 27U24 (2) 47U15 (3) 45U15 (4) 47V14
14. 2A11, 4D13, 12G17, ?
 (1) 36I19 (2) 48J21 (3) 36J21 (4) 48J23
15. C4X, F9U, 116R
 (1) K25P (2) L25P (3) L25O (4) L27P

Directions: (Q: 16 to 20): Observe the diagram carefully and then answer the following questions. Here rectangle represents males, triangle represents the people who did PhD, circle represents Urban and square represents civil servants.



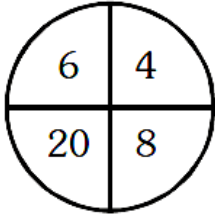
16. How many urban male civil servants are there?
 (1) 8 (2) 26 (3) 11 (4) 39
17. How many female PhD are there?
 (1) 39 (2) 11 (3) 15 (4) 26
18. How many urban male PhD civil servants are there?
 (1) 10 (2) 8 (3) 13 (4) none of these
19. How many urban female civil servants are there?
 (1) 3 (2) 2 (3) 7 (4) 15
20. How many urban male PhD are there?
 (1) 15 (2) 13 (3) 39 (4) none of these

Directions : (Q: 21 to 25): In each of the following questions, the two expressions on either side of sign (=) will have the same value. If two terms on either side or on the same side are interchanged, the correct terms to be interchanged have been given as one of the alternatives under the expressions. Find the correct alternative in each case.

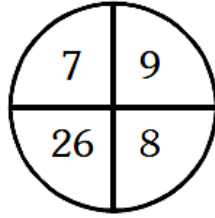
21. $5 + 3 \times 6 - 4 \div 2 = 4 \times 3 - 10 \div 2 + 7$
 (1) 4, 7 (2) 5, 7 (3) 6, 4 (4) 6, 10
22. $7 \times 2 - 3 + 8 \div 4 = 5 + 6 \times 2 - 24 \div 3$
 (1) 2, 6 (2) 6, 5 (3) 3, 24 (4) 7, 6
23. $15 + 3 \times 4 - 8 \div 2 = 8 \times 5 + 16 \div 2 - 1$
 (1) 3, 5 (2) 15, 5 (3) 15, 16 (4) 3, 1
24. $6 \times 3 + 8 \div 2 - 1 = 9 - 8 \div 4 + 5 \times 2$
 (1) 3, 4 (2) 3, 5 (3) 6, 9 (4) 9, 5
25. $8 \div 2 \times 2(-11) + 9 = 6 \times 2 - 5 + 4 \div 2$
 (1) 5, 9 (2) 8, 5 (3) 9, 6 (4) 11, 5

Directions: (Q: 26 to 30): In this type of questions, a figure or a matrix is given in which some numbers are filled according to a rule. A place is left blank with question mark. Find out which number will replace the questions mark (?) from given options.

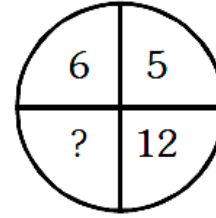
26.



(1) 23



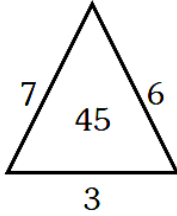
(2) 25



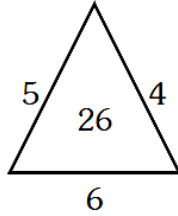
(4) 22

(3) 18

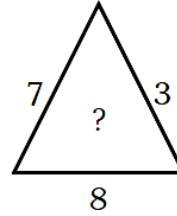
27.



(1) 29



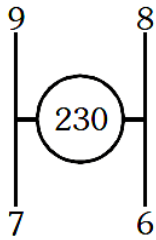
(2) 42



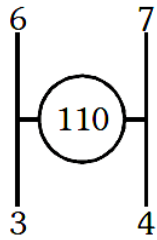
(4) 28

(3) 36

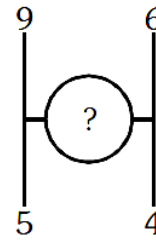
28.



(1) 186



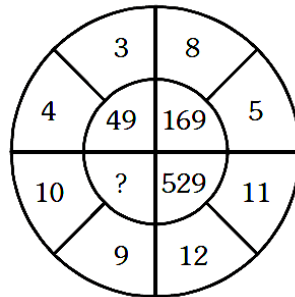
(2) 175



(4) 211

(3) 158

29.



(1) 441

(2) 324

(3) 462

(4) 361

30.

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

(1) 5

(2) 4

(3) 8

(4) 6

Directions: (Q: 31 to 35): Arrange the words given below in a meaningful sequence and chose correct answer from the 4 options.

31.

(1) Key, (2) Door, (3) Lock, (4) Room, (5) Switch on.

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

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

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

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

32.

(1) Word, (2) Paragraph, (3) Sentence, (4) Letters, (5) Phrase.

- (1) 4, 1, 5, 2, 3 (2) 4, 1, 3, 5, 2 (3) 4, 2, 5, 1, 3 (4) 4, 1, 5, 3, 2
33. (1) Police, (2) Punishment, (3) Crime, (4) Judge, (5) Judgement
(1) 3, 1, 2, 4, 5 (2) 3, 1, 2, 5, 4 (3) 3, 1, 4, 2, 5 (4) 3, 1, 4, 5, 2
34. (1) Family, (2) Community, (3) Member, (4) Locality, (5) Country
(1) 3, 1, 2, 4, 5 (2) 3, 1, 2, 5, 4 (3) 3, 1, 4, 2, 5 (4) 3, 1, 4, 5, 2
35. (1) Poverty, (2) Population, (3) Death, (4) Unemployment, (5) Disease
(1) 2, 3, 4, 5, 1 (2) 3, 4, 2, 5, 1 (3) 2, 4, 1, 5, 3 (4) 1, 2, 3, 4, 5

Directions: (Q: 36 to 40): Find out the relationship between the first two words and choose the word from the given alternative, which bears the same relationship to the third word, as the first two bear.

36. Funk : Vitamins :: Curie : ?
(1) Uranium (2) Radium (3) Radioactivity (4) Photography
37. Virology : Virus :: Semantics : ?
(1) Amoeba (2) Language (3) Nature (4) Society
38. Pituitary : Brain :: Thymus : ?
(1) Larynx (2) Spinal Cord (3) Throat (4) Chest
39. Vine : Grapes :: Poppy : ?
(1) Opium (2) Tobacco (3) Pears (4) Pineapple
40. Karnataka : Gold :: Madhya Pradesh : ?
(1) Diamond (2) Iron (3) Copper (4) Gems

Directions: (Q: 41 to 45): In these Questions, one word is coded according to a particular pattern and the candidate is asked to give the code letters for the another word following the same pattern.

41. In a certain code, LAWN is written as JCUP. How will SLIT be coded in that code?
(1) QNGV (2) QJGV (3) QNVG (4) NJGV
42. In a given code, SISTER is coded as 535301. UNCLE as 84670 and BOY as 129. How is RUSTIC written in the code?
(1) 633185 (2) 185336 (3) 363815 (4) 581363
43. In a certain code, LONG is written as 5123 and GEAR is written as 3748. How is LANE written in that code?
(1) 5427 (2) 5247 (3) 5847 (4) 5237
44. In a certain code READ is written as # 5%6 and PAID is written as \$%46. How is RIPE written in that code?
(1) #4\$5 (2) #6\$5 (3) \$4#5 (4) \$4#6
45. In a code CORNER is written as GSVRIV. How can CENTRAL be written in the code?
(1) DFOUSBM (2) GIRXVEP (3) GNFJKER (4) None of these

Directions: (Q: 46 to 49) : In each of the following Questions, four words are given. Which one of them will come in the third position, if all of them are arranged alphabetically as in a dictionary?

46. (1) Bishop (2) Bifocal (3) Bicycle (4) Bitter
(1) Bishop (2) Bicycle (3) Bifocal (4) Bitter
47. (1) Parasite (2) Party (3) Petal (4) paste
(1) Party (2) Paste (3) Parasite (4) Petal
48. (1) Research (2) Rational (3) Round (4) Rustic
(1) Rational (2) Research (3) Round (4) Rustic

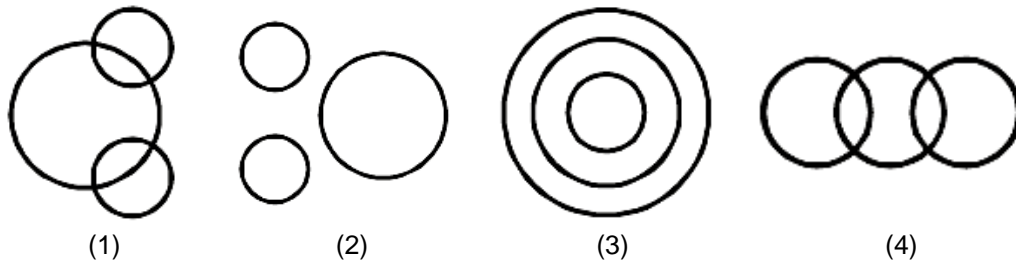
49. (1) Nature (2) Native (3) Narrate (4) Diastole
 (1) Native (2) Nature (3) Narrate (4) Diastole

Directions: (Q: 50 to 55): From the given five groups of letters, four of them are similar to each other in some manner, while one is different and this is to be chosen from the four alternative answers.

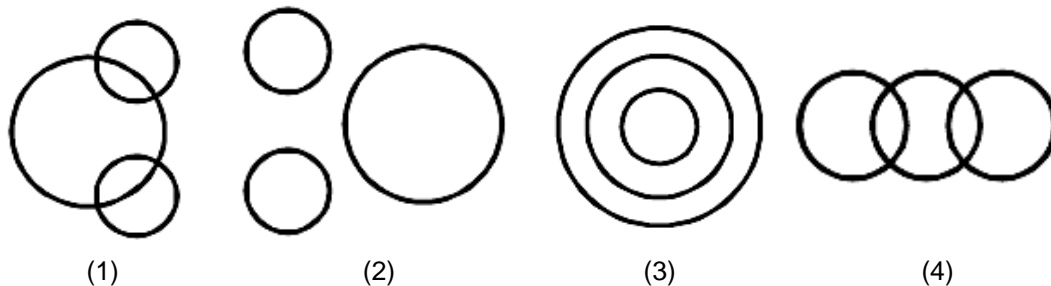
50. DE, PQ, TU, MO, FG
 (1) DE (2) PQ (3) TU (4) MO
51. XW, FG, ML, PO, TS
 (1) XW (2) FG (3) ML (4) PO
52. BD, MP, NQ, HK, TW
 (1) BD (2) MP (3) NQ (4) HK
53. AE, AI, IO, EI, OU
 (1) AE (2) AI (3) IO (4) EI
54. KP, MN, HR, GT, EV
 (1) KP (2) MN (3) HR (4) GT
55. Monday, Tuesday, Thursday, Saturday
 (1) Monday (2) Tuesday (3) Thursday (4) Saturday

Directions: (Q: 56 to 60):

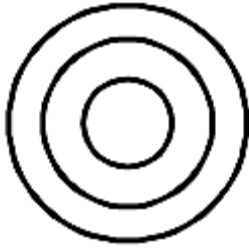
56. Which of the following diagrams indicates the best relation between Hockey, Football and Cricket?



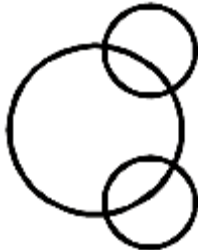
57. Which of the following diagrams indicates the best relation between Iron, Lead and Nitrogen?



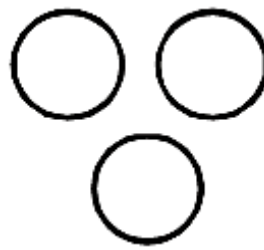
58. Which of the following diagrams indicates the best relation between Moon, Sun and Earth?



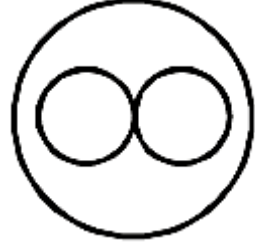
(1)



(2)

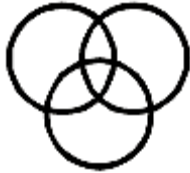


(3)

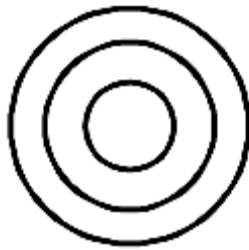


(4)

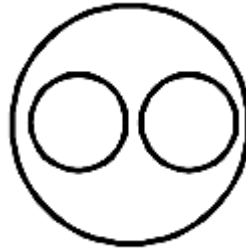
59. Which of the following diagrams indicates the best relationship between Hospital, Nurse and Patient?



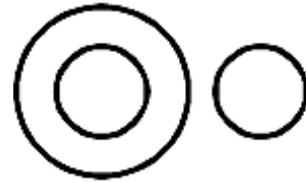
(1)



(2)

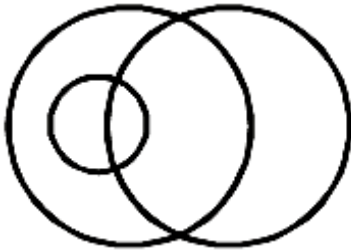


(3)

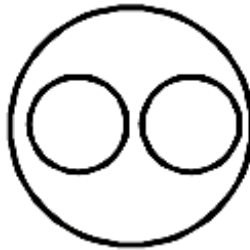


(4)

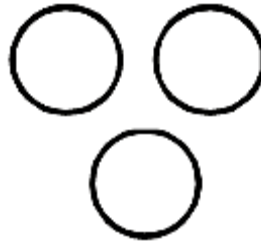
60. Which of the following diagrams indicates the best relationship between Mercury, Zinc and Metal?



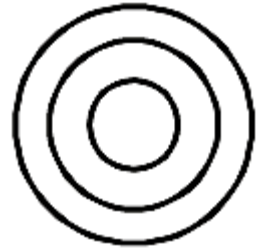
(1)



(2)



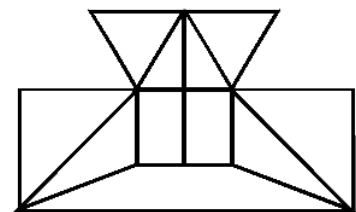
(3)



(4)

Directions: (Q: 61 to 65): These questions are based on analytical reasoning

61. Find the minimum number of straight lines required to make the given figure.



(4) 19

62. The number of triangles in the figure.

(1) 16

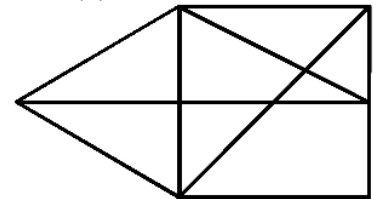
(2) 17

(3) 18

(1) 12

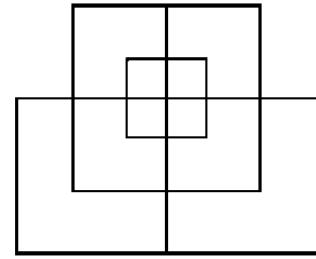
(2) 13

(3) 14



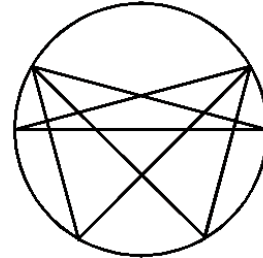
(4) 15

63. Find the number of straight lines required to make the given figure.



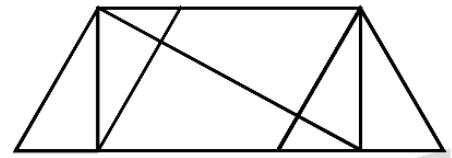
- (1) 13 (2) 15 (3) 17 (4) 19

64. The number of triangles in the given figure.



- (1) 22 (2) 24 (3) 26 (4) 28

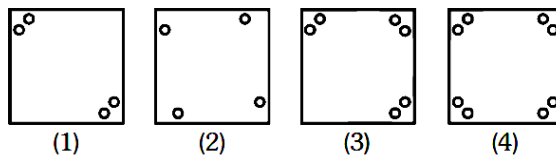
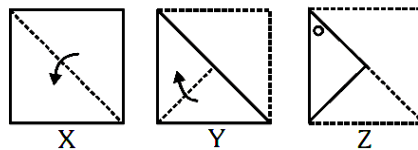
65. The number of triangles in the given figure.



- (1) 8 (2) 10 (3) 12 (4) 14

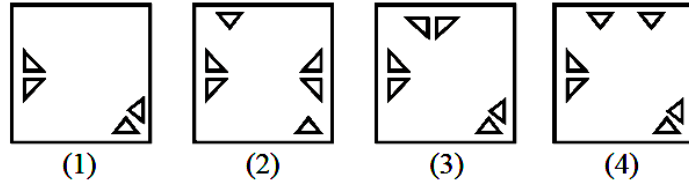
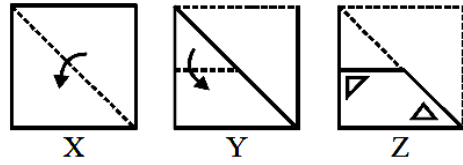
Directions: (Q: 66 to 70): Each of the following Questions consists of a set of three figures X, Y and Z showing a sequence of folding of piece of paper. Figure (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would mostly closely resemble the unfolded form of figure (Z)

66.



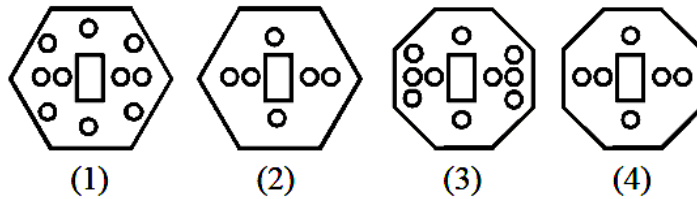
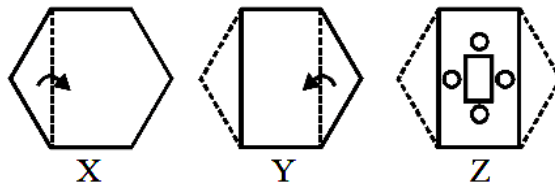
- (1) 1 (2) 2 (3) 3 (4) 4

67.



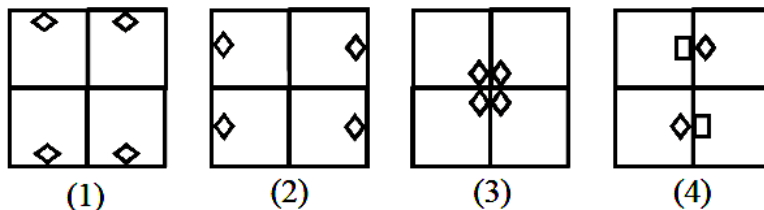
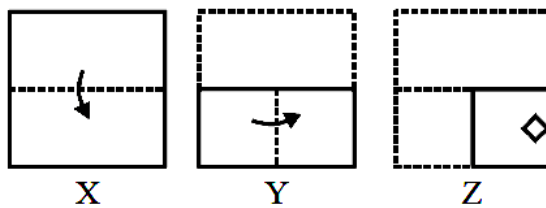
(1) 1 (2) 2 (3) 3 (4) 4

68.



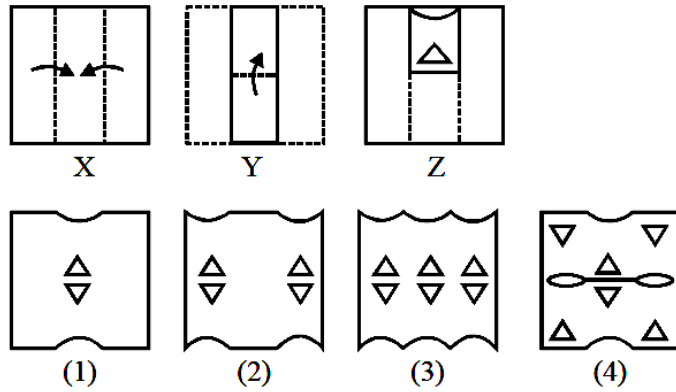
(1) 1 (2) 2 (3) 3 (4) 4

69.



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

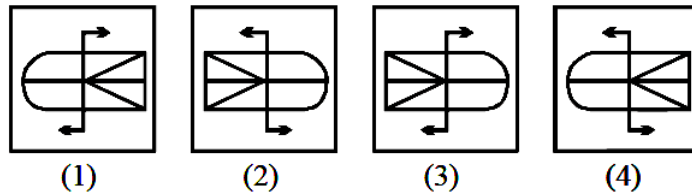
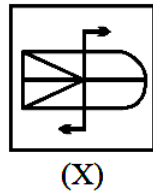
70.



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

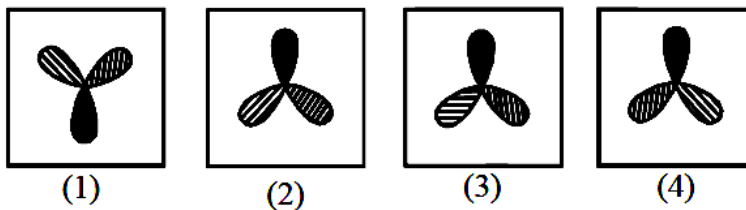
Directions: (Q: 71 to 75): In each of the following questions, choose the correct mirror images of the given fig. (X) from amongst the four alternatives (1), (2), (3), (4) given along with it. Mirror is placed right to each figure.

71.



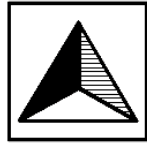
(1) 1 (2) 2 (3) 3 (4) 4

72.



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

73.



(X)



(1)



(2)



(3)



(4)

74.

(1) 1

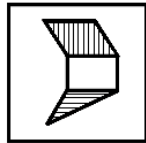
(2) 2

(3) 3

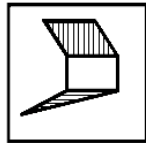
(4) 4



(X)



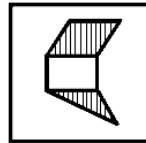
(1)



(2)



(3)



(4)

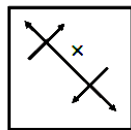
(1) 1

(2) 2

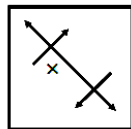
(3) 3

(4) 4

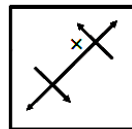
75.



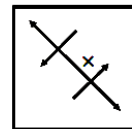
(X)



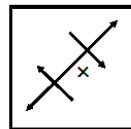
(1)



(2)



(3)



(4)

(1) 1

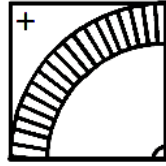
(2) 2

(3) 3

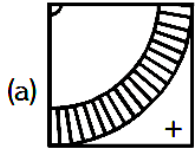
(4) 4

Directions (Q: 76 to 80): The reflection of an object as seen in water is called its water image. It is the inverted image. Find the water image of the figure (X) from the four alternative answers.

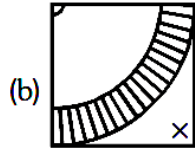
76.



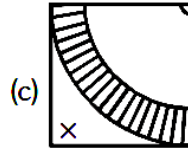
(X)



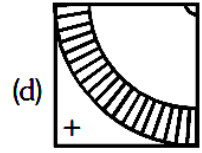
(1) (a)



(2) (b)

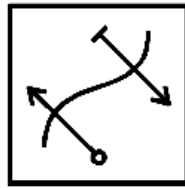


(3) (c)

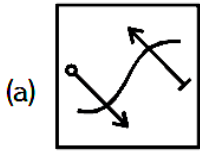


(4) (d)

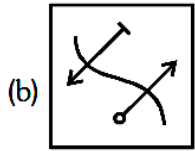
77.



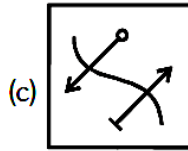
(X)



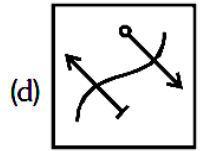
(1) (a)



(2) (b)

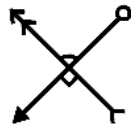


(3) (c)

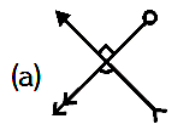


(4) (d)

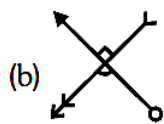
78.



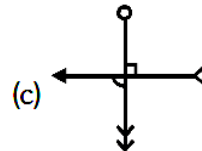
(X)



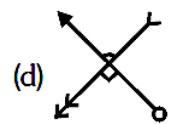
(1) (a)



(2) (b)

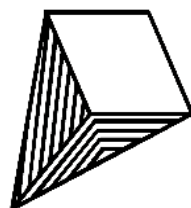


(3) (c)

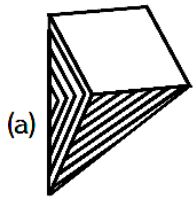


(4) (d)

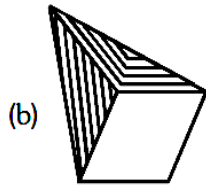
79.



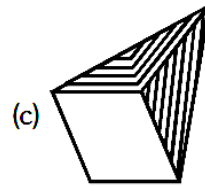
(X)



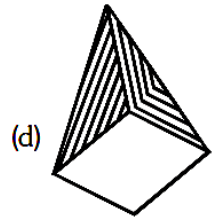
(1) (a)



(2) (b)

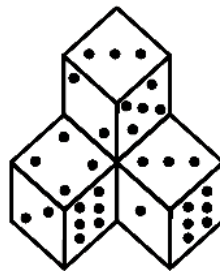


(3) (c)

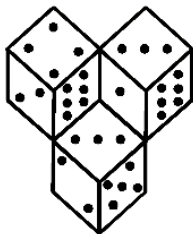


(4) (d)

80.

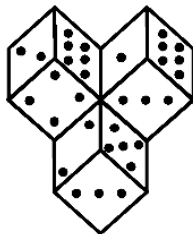


(X)



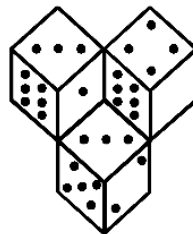
(a)

(1) (a)



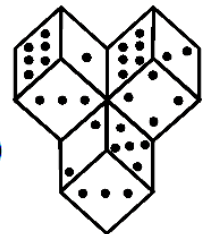
(b)

(2) (b)



(c)

(3) (c)

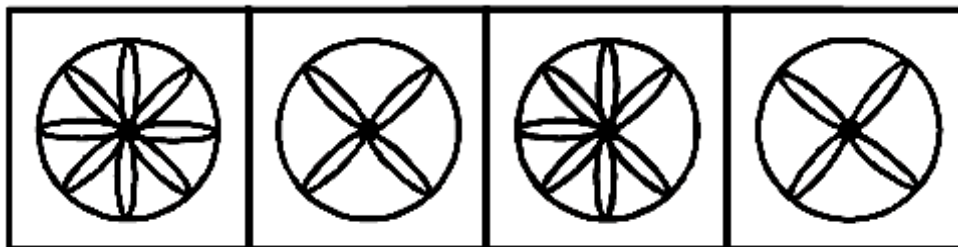


(d)

(4) (d)

Directions: (Q: 81 to 85): In each of the following questions, choose the figure which is different from the test

81.



(1) 1

(1)

(2) 2

(2)

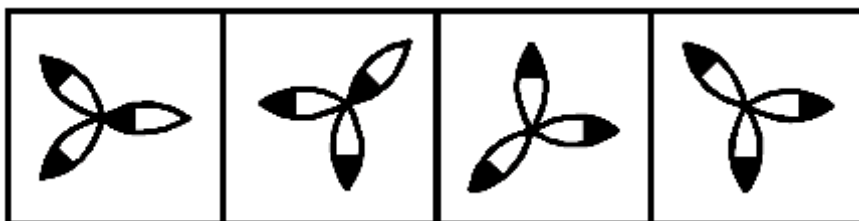
(3) 3

(3)

(4) 4

(4)

82.



(1)

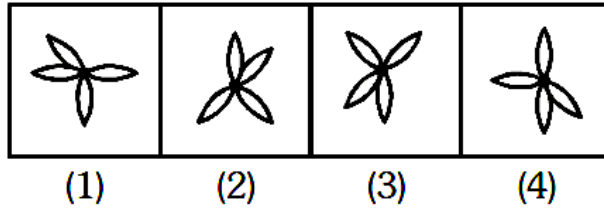
(2)

(3)

(4)

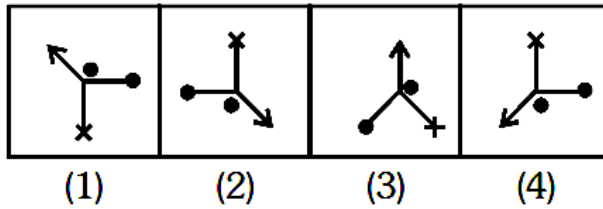
- (1) 1 (2) 2 (3) 3 (4) 4

83.



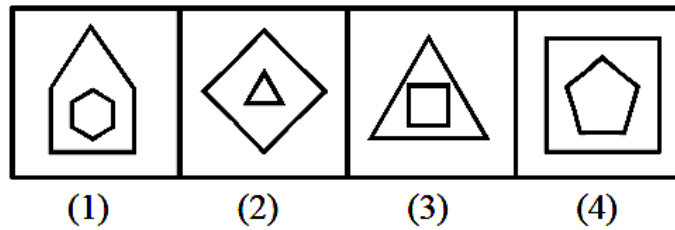
- (1) 1 (2) 2 (3) 3 (4) 4

84.



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

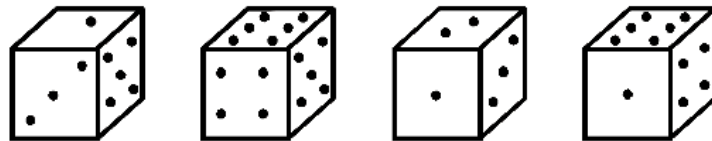
85.



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

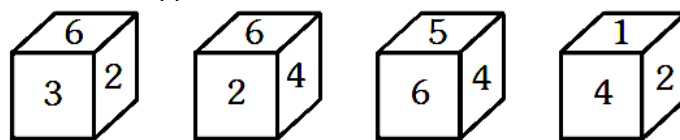
Directions: (Q: 86 to 90):

86. How many points will be on the face opposite to face, which contains 2 points?



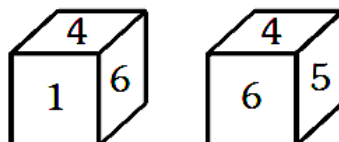
- (1) 1 (2) 5 (3) 4 (4) 6

87. Which number is on the face opposite to 6?



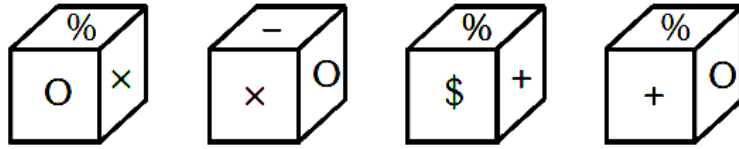
- (1) 4 (2) 1 (3) 2 (4) 5

88. Two positions of a dice are shown below. When number '1' is on the top, what number will be at the bottom?



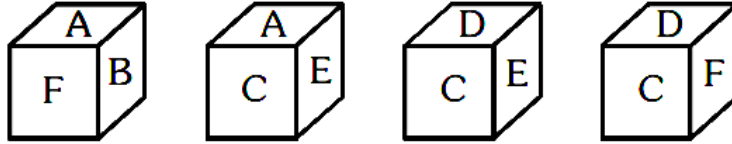
- (1) 3 (2) 5 (3) 2 (4) 6

89. Here 4 positions of a cube are shown. Which sign will be opposite to '+'?



- (1) % (2) - (3) x (4) \$

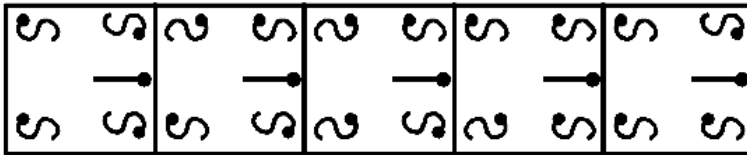
90. The position of a cube are shown below. Which letter will be on the face opposite to face with A?



- (1) D (2) B (3) C (4) F

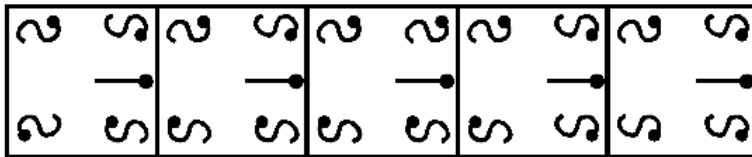
Directions (Q: 91 to 95): Each of the following questions consists of five figures marked A, B, C, D and E called the problem figures; followed by five other figures marked 1, 2, 3, 4 and 5 called the answer figures. Select a figure which will continue the same series as established by the five problem figures.

91. Problem figures



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

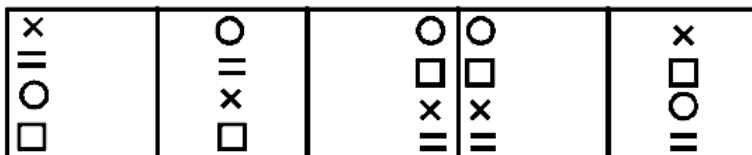
Answer figures



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

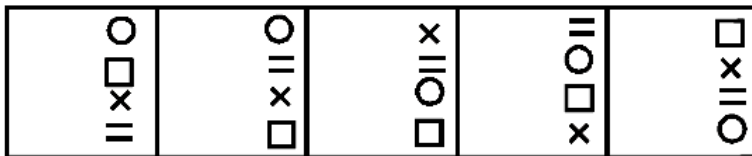
- (1) 1 (2) 2 (3) 3 (4) 4

92. Problem figures



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

Answer figures



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

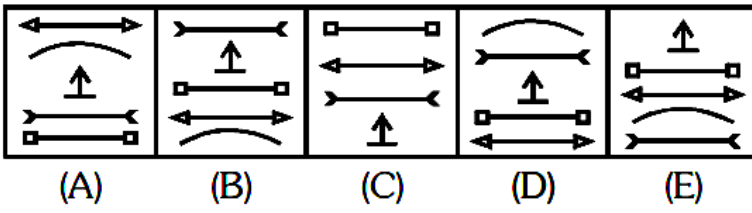
(1) 1

(2) 2

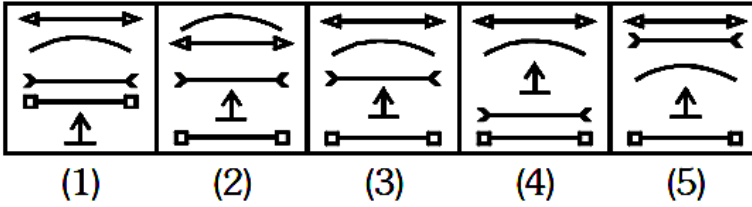
(3) 3

(4) 4

93. Problem figures



Answer figures



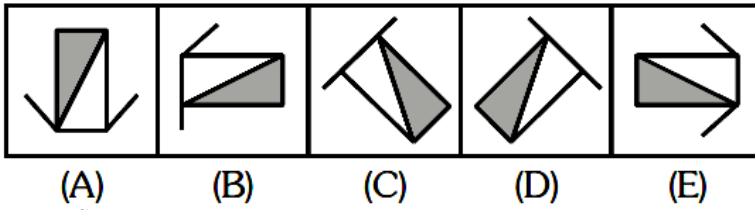
(1) 1

(2) 2

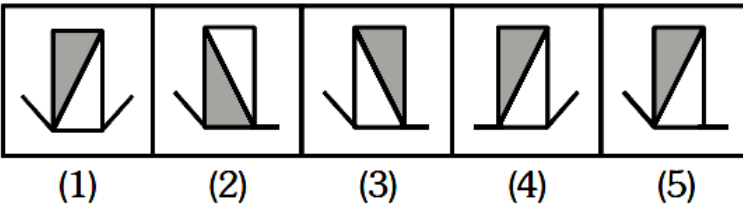
(3) 3

(4) 4

94. Problem figures



Answer figures



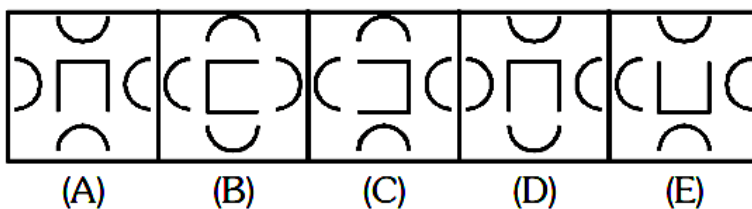
(1) 1

(2) 2

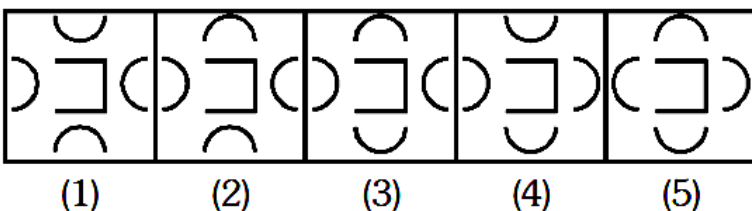
(3) 3

(4) 4

95. Problem figures



Answer figures



(1) 1

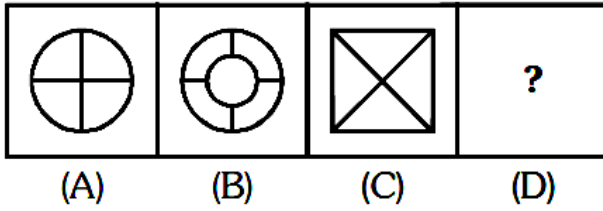
(2) 3

(3) 2

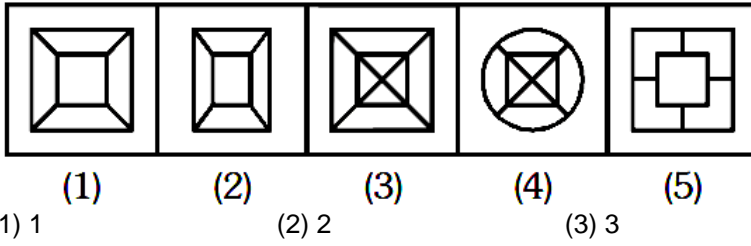
(4) 5

Directions: (Q: 96 to 100): Each of the following questions consists of two sets of figures. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting suitable figure from the answer set.

96. Problem figures



Answer figures



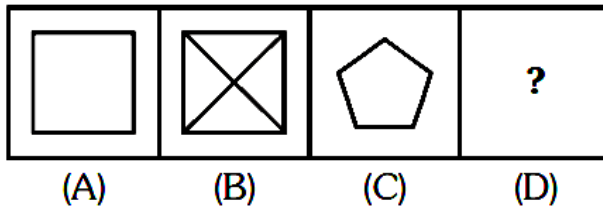
(1) 1

(2) 2

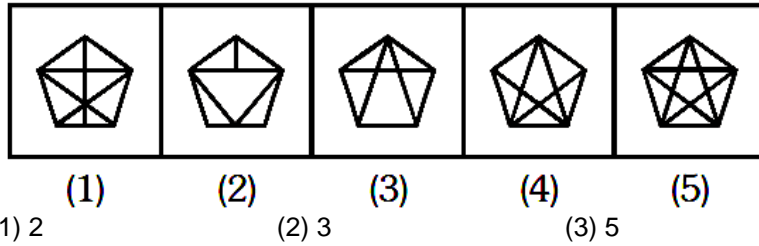
(3) 3

(4) 4

97. Problem figures



Answer figures



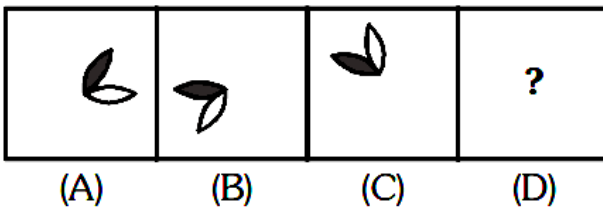
(1) 2

(2) 3

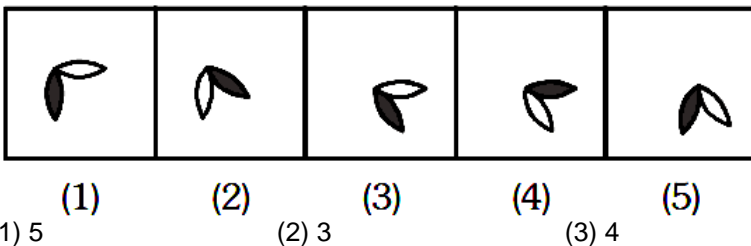
(3) 5

(4) 4

98. Problem figures



Answer figures



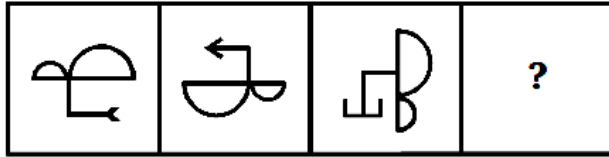
(1) 5

(2) 3

(3) 4

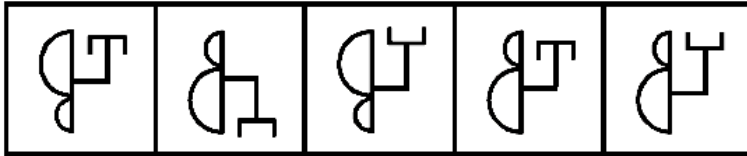
(4) 1

99. Problem figures



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

Answer figures



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

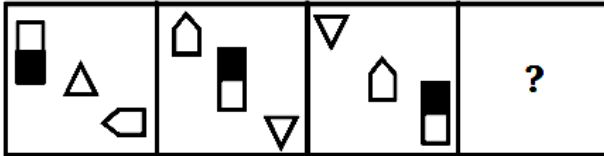
(1) 4

(2) 5

(3) 2

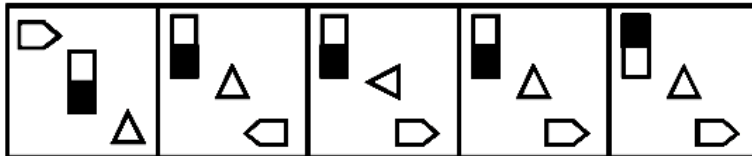
(4) 3

100. Problem figures



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

Answer figures



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

(1) 1

(2) 2

(3) 3

(4) 4

TELANGANA NTSE STAGE 1 2019-20

SCHOLASTIC APTITUDE TEST (SAT)

Medium : ENGLISH

Time : 120 Minutes

100 Marks

MENTAL ABILITY TEST : Session – II

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 sheets as shown in the example given in the OMR sheet. For all the subsequent purposes, your Centre Code No. and Roll No. Shall remain the same as given on the Admission Card.
2. All questions carry **one** mark each.
3. Since **all** questions are **compulsory**, do not try to read through the whole question paper before beginning to answer it.
4. Begin with the first question and keep trying one question after another till you finish all three parts
5. 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
6. 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.
7. The blank pages are provided for rough work at the end of each part.
8. REMEMBER, YOU HAVE TO SHADE ANSWERS ON A SEPARATE OMR SHEET PROVIDED.
9. 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 one given for the corresponding question in the booklet.
10. Now turn to the next page and start answering the questions.
11. After the examination, you should hand over the **OMR** sheet to the Invigilator of the room.
12. 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.

SCHOLASTIC APTITUDE TEST (SAT) STAGE 1

(Q.Nos. 1 to 100)

Max. Marks : 100

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

Note:

(i). SHADE the correct alternatives in the OMR Answer Sheet provided, from amongst the ones given against the corresponding questions in the Questions Booklet. For shading the circles, use a HB pencil.

(ii). Subjects, Questions Sr. Nos. and Marks allotted :-

(1) Physics	1 to 13 Questions	13 Marks
(2) Chemistry	14 to 26 Questions	13 Marks
(3) Biology	27 to 40 Questions	14 Marks
(4) Mathematics	41 to 60 Questions	20 Marks
(5) History	61 to 75 Questions	15 Marks
(6) Geography	76 to 90 Questions	15 Marks
(7) Political Science	91 to 95 Questions	05 Marks
(8) Economics	95 to 100 Questions	05 Marks

PHYSICS (1 to 13)

1. The speed of light in diamond is 1,24,000 km/sec. If the speed of light in air is 3, 00,000 km/sec., then the refractive index of diamond will be ..
 (1) 1.49 (2) 2.42 (3) 2.25 (4) None

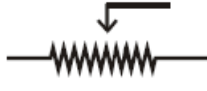
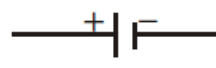


2. Which of the following is Snell's law ?
 (1) $n_1 \sin i = \frac{\sin r}{n_2}$ (2) $\frac{n_1}{n_2} = \frac{\sin r}{\sin i}$
 (3) $\frac{n_2}{n_1} = \frac{\sin r}{\sin i}$ (4) $n_2 \sin i = \text{constant}$

3. A car moves with constant speed of 10 m/s in a circular path of radius 10m. If the mass of the car is 1000 kg, then the centripetal force for the car is
 (1) 10^4 N (2) 10^6 N (3) 10^5 N (4) None

4. Two spherical balls of mass 10 kg each are placed with their centres 10 cm apart, then the gravitational force of attraction between them.
 (1) $G \times 10^2$ N (2) $G \times 10^4$ N (3) $G \times 10^6$ N (4) None

5. If the acceleration of a moving object is constant, then the motion is said to be
 (1) constant speed (2) Uniform acceleration
 (3) Uniform velocity (4) Instantaneous velocity

6. Which of the following converts Mechanical energy into Electrical energy ?
 (1) Motor (2) Battery (3) Generator (4) Switch

7. Symbol for resistance
 (1)  (2) 
 (3)  (4) 

8. If the bulb have 100 W and 220 V, then the resistance of the bulb is ..
 (1) 284 Ω (2) 384 Ω (3) 484 Ω (4) None

9. If the focal lengths + ve, then the lens is ...
 (1) Concave (2) Convex (3) Plane (4) None

10. Size of image formed by a convex mirror is always ..
 (1) enlarged (2) diminished
 (3) equal to the size of the object (4) none

11. The energy possessed by a body by virtue of its motion is called
 (1) Potential energy (2) Kinetic energy
 (3) Gravitational energy (4) None

12. S.I. Unit of. Work
 (1) N-m (2) Kg-m (3) N/m (4) N-m²

13. A boy pushes a book kept on a table by applying a force of 4.5 N. Find the work done by the force, if the book is displaced through 30 cm along the direction of push
 (1) 1.10 J (2) 1.25 J (3) 1.35 J (4) None

CHEMISTRY (14 to 26)

14. Calculate the concentration in terms of mass by volume percentage of the solution containing 2.5g. Potassium chloride in 50 ml of KCl solution.
 (1) 2% (2) 10% (3) 4% (4) 5%
15. If the quantity of solute is more in a solution, then the solution is said to be
 (1) Saturated solution (2) Dilute solution
 (3) Concentrated solution (4) Unsaturated solution
16. A solution turns red litmus blue, its pH is likely to be
 (1) 1 (2) 4 (3) 5 (4) 10
17. The quantum number which explains about size and energy of the orbit or shell is
 (1) n (2) ℓ (3) m_ℓ (4) m_s
18. Number of elements present in period-2 of the long form of periodic table
 (1) 2 (2) 8 (3) 18 (4) 32
19. Number of covalent bonds in Methane molecules.
 (1) 1 (2) 2 (3) 3 (4) 4
20. Chemical formula for Calcium sulphate hemihydrate is
 (1) CaSO_4 (2) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (3) $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$ (4) None
21. Law of conservation of mass was proposed by
 (1) Lavoisier (2) Proust (3) Dalton (4) None
22. Valency of Aluminium is
 (1) 1 (2) 2 (3) 3 (4) 4
23. The sum of the number of Protons and Neutrons in an atom is known as its
 (1) Mass number (2) Atomic number
 (3) Valency (4) None
24. The valency of Neon is
 (1) 2 (2) 6 (3) 2 and 6 (4) 0
25. Latent heat of Vapourisation of water
 (1) 540 (2) 90 (3) 80 (4) 100
26. Bleaching powder is represented by formula
 (1) NaHCO_3 (2) Na_2CO_3 (3) CaOCl_2 (4) None

BIOLOGY (27 to 40)

27. There is a very yellow dust which comes away on fingers whenever we touch the middle of the flower. These tiny yellow grains are one of the most precious substances in nature because they contain the secret of plant life. What is the dust called ?
 (1) Pollen (2) Sperm (3) Spore (4) Sporocyst
28. Preparation of soil helps the soil to turn and loosen. This turning and loosening of soil is necessary as
 (1) The loose soil helps roots to breathe easily
 (2) The loose soil helps in the growth of earthworms and microbes present in the soil
 (3) Nutrients held in the dead organisms are released back to the soil
 (4) All the above
29. The species of plant or animal which is found exclusively in particular area and is not found naturally anywhere else is known as
 (1) Endemic species (2) Epidemic species
 (3) Endomorphnic species (4) Entomorphnic species

30. Chipko movement (1974) was started in
 (1) Chamoli district of Uttarakhand (2) Jabalpur district of Madhya Pradesh
 (3) Jorhat district of Assam (4) Kannur district of Kerala
31. Which of the following matches is incorrect ?
 Organelle Presence
 (1) Ribosome Plant and Animal cell
 (2) Mitochondria Animal cell only
 (3) Chloroplast Plant cell only
 (4) All of the above
32. Which of the following is incorrect about Dolly, the clone ?
 (1) It was cloned by Ian Wilmut and his colleagues
 (2) During the process of its cloning, the cell was collected from the udder of a female Finn Dorset sheep
 (3) It died its natural death
 (4) It was given birth by the Scottish Blackface ewe.
33. Read the given statements and select the correct option.
 Statement – I : In humans, the gamete contributed by the male determines whether the child produced will be the male or female.
 Statement – II : Sex in humans is dependant on the X–chromosome or Y–chromosome of the father
 (1) Both Statements – I and II are true and Statement – II is the correct explanation of Statement – I .
 (2) Both Statements – I and II are true, Statement–II is not the correct explanation of Statement – I
 (3) Statement – I is true and Statement – II is false
 (4) Both Statements – I and II are false
34. Which will marine organisms be affected; when there is an oil spillage at Sea ?
 (1) There will be a shortage of light and heat in the water
 (2) There will be a shortage of Oxygen and excessive heat will be trapped in the water.
 (3) There will be a shortage of Oxygen and the chemicals in the oil will affect marine organisms
 (4) All the above are the correct reasons.
35. Which of the following describes Moulting ?
 (1) The Resting stage in the life cycle of a Silkworm.
 (2) Change in appearance during the different stages in the life cycle of a Silkworm
 (3) Spinning of Cocoon
 (4) Casting off old skin
36. Match column – I with column – II and select the correct option from the codes given below.

Column – I		Column – II	
(A)	Ribosomes	(i)	Jelly like substance
(B)	Lysosomes	(ii)	Powerhouse of the cell
(C)	Endoplasmic Reticulum	(iii)	Site of Protein synthesis
(D)	Cytoplasm	(iv)	Transporting Tubules
(E)	Mitochondria	(v)	Suicide Bags

- (1) A → iii, B → v, C → iv, D → i, E → ii
 (2) A → iv, B → v, C → iii, D → i, E → ii
 (3) A → iii, B → v, C → i, D → iv, E → ii
 (4) A → iv, B → v, C → ii, D → i, E → iii

37. Which of the following is incorrect match ?
 (1) Alexander Fleming–Penicillin (2) Louis Pasteur–Fermentation
 (3) Edward Jenner – Vaccination (4) Karl Landsteiner–Tissue Culture
38. Select the incorrect statement regarding AIDS
 (1) It is an immuno–deficiency disease
 (2) HIV virus has RNA as its genetic material
 (3) HIV positive mother can give birth to HIV positive baby

(4) The time lag between the infection and appearance of AIDS symptoms may vary from week to month

39. Air pollutants are harmful to living things. Which of the following is/are their harmful effects ?
 (I) This forms acid rain (II) They cause breathing problems in animals
 (III) They cause interference with photosynthesis in plants
 (IV) They cause diseases in the respiratory system of man and animals.
 (1) (I) only (2) I and II only
 (3) I, II and III (4) I, II, III and IV

40. Match the following

Column – I		Column – II	
(A)	Oviparous	(i)	Tadpole of Adult
(B)	Metamorphosis	(ii)	Birds
(C)	Embryo	(iii)	Fertilization outside the body
(D)	External Fertilization	(iv)	Developed Zygote

- (1) A → ii, B → i, C → iv, D → ii (2) A → iv, B → iii, C → ii, D → i
 (3) A → i, B → ii, C → iii, D → iv (4) A → iii, B → ii, C → iv, D → i

MATHEMATICS (41 to 60)

41. The value of 'x' satisfying the equation $5^2 \cdot 5^4 \cdot 5^6 \dots 5^{2x} = (0.04)^{-28}$ is ...
 (1) 5 (2) 10 (3) 8 (4) 7
42. The value of $\operatorname{cosec}(75 + \theta) - \sec(15 - \theta) - \tan(55 + \theta) + \cot(35 - \theta)$ is ..
 (1) -1 (2) 0 (3) 1 (4) $\frac{3}{2}$
43. The average age of three girls is 15 years. If their ages are in the ratio 3 : 5 : 7, then the age of the youngest girl among them is ..
 (1) 12 years (2) 10 years (3) 9 years (4) 8 years
44. If $a + b + c = 0$, $a^2 + b^2 + c^2 = 10$, then the value of $a^4 + b^4 + c^4$ is ...
 (1) 50 (2) 25 (3) 75 (4) 100
45. A ball of diameter 13 cm is floating in a pond. If the top of the ball is 4 cm above the surface of the pond, the radius of the circle formed by the contact of water surface with the ball is ...
 (1) 13 cm (2) 6.5 cm (3) 6 cm (4) 9 cm
46. If $\sqrt{1 + \frac{x}{289}} = 1 + \frac{1}{17}$, then the value of 'x' is ...
 (1) 1 (2) 13 (3) 15 (4) 35
47. If $3 \sin \theta + 5 \cos \theta = 5$, then the value of $5 \sin \theta - 3 \cos \theta$ is ...
 (1) 3 (2) 5 (3) $\frac{1}{3}$ (4) $\frac{1}{5}$
48. 'M' is mid-point of line segment AB of length 8 units. S_1, S_2 are two circles with AM and BM as diameters respectively. The tangent at B meets the tangent from A to circle S_2 at C. If $BC = K\sqrt{2}$, then the value of 'K' is
 (1) 1 (2) 2 (3) 3 (4) 4
49. If 'A' is the area of triangle with sides 25, 25 and 30 units and 'B' is the area of triangle with sides 25, and 25 and 40 units, then ...
 (1) A = B (2) A < B (3) A = 3B (4) A = 2B

50. If $P(x)$ is a quadratic polynomial with $P(0) = 6$, $P(1) = 1$ and $P(2) = 0$, then the value of $P(3)$ is ...
 (1) 1 (2) 2 (3) 3 (4) 4
51. If a polygon has 44 diagonals, then its number of sides is ...
 (1) 10 (2) 11 (3) 8 (4) 9
52. If $x = \frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}}$, $y = \frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$, then the value of $x^2 + xy + y^2$ is
 (1) 49 (2) 78 (3) 98 (4) 99
53. If a sphere is exactly fitted in a cube, then the ratio of the volume of cube to volume of the sphere is ..
 (1) $9 : \pi$ (2) $6 : \pi$ (3) $3 : \pi$ (4) $2 : \pi$
54. ABCD is a square of side 2 cm. If each vertex as centre and 1 cm as radius, four circles are drawn, then the radius of the circle which touches these four circles externally is ...
 (1) $\sqrt{2} - 1$ (2) $\sqrt{2} + 1$ (3) $\sqrt{2}$ (4) $\frac{1}{\sqrt{2}}$
55. If $A = \log_2 \log_2 \log_4 256 + 2 \log_{\sqrt{2}} 2$, then the value of A is
 (1) 2 (2) 3 (3) 7 (4) 5
56. $15^3 - 8^3 - 7^3$ is completely divisible by
 (1) 32 (2) 49 (3) 56 (4) 25
57. If the length of each side of a triangle is increased by 20%, then the percentage of increase in its area is ...
 (1) 60% (2) 120% (3) 80% (4) 44%
58. $a_1, a_2, a_3, \dots, a_{24}$ are in Arithmetic progression. If $a_1 + a_5 + a_{10} + a_{15} + a_{20} + a_{24} = 225$, then the sum of its first 24 terms is ...
 (1) 360 (2) 900 (3) 1800 (4) 2700
59. In $\triangle ABC$, medians BE and CF measure 9 cm and 12 cm respectively. If $BE \perp CF$, then area of triangle ABC is ...
 (1) 24 cm^2 (2) 54 cm^2 (3) 72 cm^2 (4) 108 cm^2
60. If the number $(33333)^2 + 22222$ is expressed as a single decimal number, then the sum of its digits is ...
 (1) 10 (2) 15 (3) 20 (4) 25

HISTORY (61 to 75)

61. Find out the wrong statement about Montesquieu
 (1) He wrote the book "The spirits of the laws"
 (2) He proposed a division of power within the government between the legislative, the executive and the judiciary
 (3) He introduced the division of powers type of Government in United States of America
 (D) None of the above
62. Period of Reign of Terror in France.
 (1) 1793 to 1794 (2) 1789 to 1791 (3) 1799 to 1805 (4) 1813 to 1817

63. The European country which supported the Monroe Doctrine formulated by James Monroe, the President of America.
 (1) Russia (2) Britain (3) Poland (4) Turkey
64. Find out the person who is not related to the unification of Italy.
 (1) Victor Emmanuel II
 (2) Giuseppe Garibaldi
 (3) Count of Cavour
 (4) Frederick William IV
65. Who introduced opium into China in the early sixteenth century ?
 (1) French (2) Portuguese (3) Dutch (4) Italians
66. Consider the following statements about Cricket.
 (a) The first written "laws of Cricket" were drawn up in 1744
 (b) The world's first Cricket Club was formed in Manchester in 1760's
 (c) The Parsis founded the first Indian Cricket Club and The Oriental Cricket Club in Bombay in 1848
 (d) India entered the world of Test Cricket in 1932
 Which of the following statements is / are correct ?
 (1) a only (2) a and d (3) a,c,d (4) a,b,c,d
67. Who was the viceroy of India during Civil Disobedience movement ?
 (1) Lord Irwin (2) Lord Chelmsford (3) Lord Reading (4) Lord Curzon
68. Who wrote several volumes on the London labour and compiled long lists of those who made a living from crime in the mid-nineteenth century ?
 (1) Andrew Mearns (2) Charles Dickens (3) C.G. Agarkar (4) Henry Mayhew
69. The protestant reformer who said "Printing is the ultimate gift of God and greatest one" is -
 (1) John Calvin
 (2) William Farel
 (3) Zwingli
 (4) Martin Luther
70. Find out the wrongly matched
 (1) Gulamgiri – Jyotiba Phule
 (2) Amar Jiban – Ressundari Devi
 (3) Chhote aur Bade ka sawal – Kashi Baba
 (4) None of the above
71. Find out the wrong statement about religious reformation movement.
 (1) A German monk called Martin Luther started the movement
 (2) This movement is also called as Protestant Reformation movement.
 (3) The Protestant Reformer has greater popular appeal in rural areas, while in towns the Catholic Church managed to retain its influence
 (4) None of the above
72. Which of the following is a part of "April Theses", declared by Lenin ?
 (1) Banks be nationalised
 (2) Land be transferred to the peasants
 (3) The war to be brought to a close
 (4) All the above
73. "Tebhaga movement" took place in this state.
 (1) Bengal (2) Punjab (3) Maharashtra (4) Kerala
74. Which among the following is not a demand of the Indian. Navy Mutiny that took place in 1946 ?
 (1) Equal pay for white and Indian soldiers
 (2) Withdrawal of Indian troops from Indonesia
 (3) Separate nation for Muslims

(4) None of the above

75. Find out the wrongly matched about the formation of parties in India.
(1) Indian National Congress - 1885
(2) Muslim League - 1906
(3) Hindu Maha Sabha - 1910
(4) Communist party of India - 1925

GEOGRAPHY (76 to 90)

76. Find out the wrong statement about western cyclonic disturbances.
(1) These originate from the Mediterranean sea
(2) They usually influence the weather of the North and North Western regions of India
(3) The rainfall received from these disturbances is called as Mahawat. It is a boon for the Rabi crop
(4) None of the above

77. Match the following

(a)	Tropical Deciduous forests	(i)	Grows in Delta region
(b)	Tropical Evergreen forests	(ii)	Grows upto a height of 60 mts
(c)	Mangrove forests	(iii)	These are the most widespread forests of India
(d)	Thorn forests	(iv)	These are found in North- Western part of India

	(a)	(b)	(c)	(d)
(1)	ii	i	iv	iii
(2)	iii	i	ii	iv
(3)	iv	iii	i	ii
(4)	iii	ii	i	iv

78. Find out the highest and least Sex Ratio recorded decades
(1) 1901,1991 (2) 1901, 2001 (3) 1921, 1981 (4) 1911,2011
79. Which of the following lake is the result of Tectonic activity ?
(1) Chilka lake (2) Sambhar lake (3) Pulicat lake (4) Wular lake
80. Which one of the following drainage patterns develop when streams flow in different directions from a central peak or dome like structure ?
(1) Dendritic (2) Trellis (3) Radial (4) Pinnate
81. Find out the highest peak in India among the following
(1) Makalu (2) Kamet (3) Kanchenjunga (4) Nanda Devi
82. Which among the following reports introduced the concept of "Sustainable Development" and advocated it as a means for resource conservation ?
(1) Leopold report, 1969
(2) Brundtland report, 1987
(3) Sunita Narayan report, 2012
(4) Rome report, 1968
83. Consider the following statements about soils
(a) Red laterite soils in Tamilnadu, Andhra Pradesh and Kerala are more suitable for cashew nut crop
(b) Arid soils are generally sandy in texture and saline in nature
(c) Red soil develops on crystalline igneous rocks in area of low rainfall
(d) Alluvial soils are found in interior part of Deccan plateau
Which of the statement/s given above is/are correct ?
(1) a only (2) a and b (3) a,b,c (4) a,b,c,d

84. What causes rainfall on the coromandel coast in the beginning of winters ?
 (1) Western cyclonic disturbances
 (2) North –west monsoons
 (3) South –west monsoons
 (4) North – east monsoons
85. Salal project is built on this river
 (1) Chenab (2) Chambal (3) Damodar (4) Periyar
86. The Balaghat mines in Madhya Pradesh are famous for
 (1) Bauxite (2) Copper (3) Manganese (4) Gold
87. National Waterway No -2 Joins these two cities
 (1) Allahabad and Haldia
 (2) Kolkata and Cuttack
 (3) Sadiya and Dhubri
 (4) Kocchi and Kollam
88. India's highest population growth rate is recorded during this decade.
 (1) 1951-1961 (2) 1961-1971 (3) 1971-1981 (4) 1981-1991
89. Thal ghat and Bhore ghat passes are in these mountains
 (1) Eastern ghats (2) Aravali mountains (3) Satpura mountains (4) Western ghats
90. Which one of the following is the most wide spread and most productive category of soil in India ?
 (1) Forest soil (2) Laterite soil (3) Alluvial soil (4) Arid soil

POLITICAL SCIENCE (91 to 95)

91. Which of the following does not influence the making of Indian constitution ?
 (1) Ideals of French revolution
 (2) Practice of Parliamentary democracy in Britain
 (3) Bill of Right in U.S
 (4) Armed struggle in China
92. Every person who wishes to contest in election has to make a legal declaration, giving full details of .
 (1) Educational qualification of the candidate
 (2) Details of the assets and liabilities of the candidate and his or her family
 (3) Serious criminal cases pending against the candidate
 (4) All the above
93. Which of the following statements about the judiciary is false ?
 (1) Every law passed by the Parliament needs approval of the Supreme court
 (2) Judiciary is independent of the executive
 (3) Any citizen can approach the court if his/her rights are violated.
 (4) Judiciary can strike down a law if it goes against the spirit of the Constitution.
94. Find out the topic which is not in the state list.
 (1) Trade (2) Agriculture (3) Police (4) Communication
95. Which of the following countries consists of two party system ?
 (1) India (2) China
 (3) United State of America (4) All the above.

ECONOMICS (96 to 100)

96. A sweet seller purchased sugar. It is a.....type of capital.
 (1) Fixed capital (2) Working capital (3) Human capital (4) None of the above
97. Which of the following factors contribute Globalisation ?
 (1) Technology (2) Economical liberalisation
 (3) International organisations (4) All the above

98. Find out the wrong statement
(1) The consumption of calories has gone down between 1983 and 2004
(2) Per capita availability of food grains has gone down between 1991 and 2001
(3) Agricultural diversification affects the production of food grains
(4) Availability of per capita food grains in India is more than in Europe
99. Chipko movement was started in this part of Himalayas
(1) Nepal Himalayas (2) Garhwal Himalayas
(3) Purvanchal Himalayas (4) Sikkim Himalayas
100. Antyodaya Anna Yojana scheme was started in the year.
(1) 2000 (2) 2004 (3) 2007 (4) 2011