

# Mental Ability Test (MAT)

## PAPER – 2

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**Time: 1½ hrs**

**Maximum marks: 90**

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1. All questions carry one mark each.
2. Since all questions are compulsory, do not spend time in reading through the whole question paper before beginning to answer it.
3. Begin with the first question and keep on trying one question after another till you finish it.
4. 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 to the questions which you have left in the first instance and try them again.
5. Since the time allotted for the question paper is very limited, you should make the best use of it by not spending too much time on any one question.
6. Answer to each question is to be indicated by encircling the letter of the correct alternative in the Answer-sheet from amongst the one given for the corresponding question in the test booklet.
7. Just after  $1\frac{1}{2}$  hrs. you start doing Part – II (Scholastic Aptitude Test). How you have to answer the question on that part is stated on the later part of the question-booklet Part II.

**Direction (Q. No. 1-5) :** Each of the following questions consists of five figures marked 1, 2, 3, 4 and 5 called the Problem Figures followed by four other figures marked A, B, C and D called the Answer Figures. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figure.

1. **PROBLEM FIGURES**

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

**ANSWER FIGURES**

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

2. **PROBLEM FIGURES**

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

**ANSWER FIGURES**

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

3. **PROBLEM FIGURES**

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

**ANSWER FIGURES**

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

4. **PROBLEM FIGURES**

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

**ANSWER FIGURES**

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

5. **PROBLEM FIGURES**

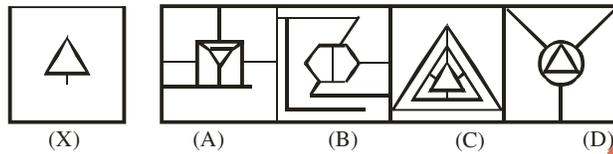
(1) (2) (3) (4) (5)

**ANSWER FIGURES**

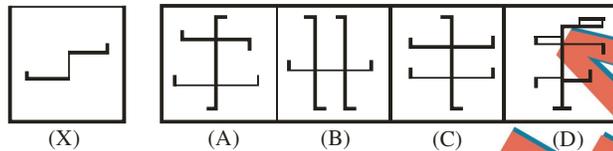
(A) (B) (C) (D)

**Direction (Q. No. 6-8) :** In each of the following questions, fig. (X) is embedded in any one of the four alternative figures (A), (B), (C) or (D). Find the alternative which contains fig. (X) as its part.

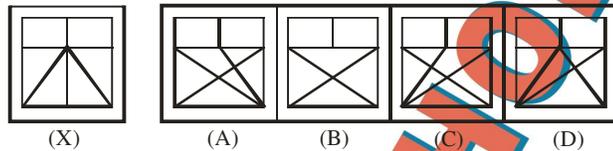
6.



7.



8.



**Directions (Q. No. 9-13) :** In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the question mark in the given series.

9.  $11\frac{1}{9}, 12\frac{1}{2}, 14\frac{2}{7}, 16\frac{1}{3}, ?$

- (A)  $8\frac{1}{3}$  (B)  $9\frac{1}{11}$  (C) 10 (D) 20

10. 4, 32, 128, ?

- (A) 128 (B) 144 (C) 192 (D) 256

11. 3, 6, 15, ? 123, 366

- (A) 34 (B) 59 (C) 42 (D) 60

12. 120, 99, 80, 63, 48, ?

- (A) 35 (B) 38 (C) 39 (D) 40

13. 0.5, 0.55, 0.65, 0.8, ?

- (A) 0.9 (B) 0.82 (C) 1 (D) 0.95

**Directions (Q. No. 14-15)** In each of the following questions, various terms of an alphabet series are given with one or more terms missing as shown by (?). Choose the missing terms out of the given alternatives.

14. BMX, DNW, FOU, ?

- (A) GHO (B) GPS (C) HPR (D) HPT

15. BZA, DYC, FXE, ?, JVI

- (A) HUG (B) HWG (C) UHG (D) WHG

**Directions (Q. No. 16-17)** In each of the following questions, a letter-number series is given with one or more terms missing as shown by (?). Choose the missing terms out of the given alternatives.

16. C4X, F9U, I16R, ?  
 (A) K25P (B) L25P (C) 47U15 (D) L27O
17. 2Z5, 7Y7, 14X9, 23W11, 34V13, ?  
 (A) 27U24 (B) 45U15 (C) 47U15 (D) 47V14

**Directions (Q. No. 18-20)** In each of the following letter series, some of the letters are missing which are given in that order as one of the alternatives below it. Choose the correct alternative.

18. \_\_\_ aba \_\_\_ ba \_\_\_ ab  
 (A) abbba (B) abbab (C) baabb (D) bbaba
19. ab \_\_\_ baa \_\_\_ ab \_\_\_  
 (A) aaaaa (B) aabaa (C) aabab (D) baabb
20. ba \_\_\_ cb \_\_\_ b \_\_\_ bab \_\_\_  
 (A) aabb (B) bacc (C) cbab (D) ccab

**Directions (Q. No. 21-23)** In each of the following questions, there is a certain relationship between two given words on one side :: and one word is given on another side of :: while another word is to be found from the given alternatives, having the same relation with this word as the words of the given pair bear. Choose the correct alternative.

21. Mango : Fruit :: Potato : ?  
 (A) Root (B) Fruit (C) Stem (D) Flower
22. Dog : Bark :: Goat : ?  
 (A) Bleat (B) Howl (C) Grunt (D) Bray
23. Food : Stomach :: Fuel : ?  
 (A) Plane (B) Truck (C) Engine (D) Automobile

**Directions (Q. No. 24-25)** : four words have been given, out of which four are alike in some manner, while the fifth one is different. Choose out the odd one.

24. (A) Write (B) Read (C) Knowledge (D) Study
25. (A) Screw (B) Hammer (C) Needle (D) Pin

**Directions (Q. No. 26-30)** : Coding Decoding.

26. In a certain code language, '581' means 'Apples are good', '357' means 'Eat good food' and '918' means 'Apples are ripe'. Which digit means 'Ripe' in that language?  
 (A) 2 (B) 8 (C) 9 (D) 7
27. If in a certain language, MADRAS is coded as NBESBT, how is BOMBAY coded in that language?  
 (A) CPNCBX (B) CPNCBZ (C) CPOCBZ (D) CQOCBZ

28. If PALE is coded as 2134, EARTH is coded as 41590, how is PEARL coded in that code?  
 (A) 29530 (B) 24153 (C) 25413 (D) 25430
29. If 'white' is called 'blue', 'blue' is called 'red', 'red' is called 'yellow', 'yellow' is called 'green', 'green' is called 'black', 'black' is called 'violet' and 'violet' is called 'orange', what would be the colour of human blood?  
 (A) Red (B) Green (C) Yellow (D) Violet
30. If 'oranges' are 'apples', 'bananas' are 'apricots', 'apples' are 'chillies', 'apricots' are 'oranges' and 'chillies' are 'bananas', then which of the following are green in colour?  
 (A) Apricots (B) Apples (C) Chillies (D) Bananas

**Directions (Q. No. 31-32) : In certain code language,**

- I. 'pit dar na' means 'you are good'.  
 II. 'dar tok pa' means 'good and bad'.  
 III. 'tim na tok' means 'they are bad'.
31. In that language, which word stands for 'they'?  
 (A) na (B) tok (C) tim (D) pit
32. To find the answer to the above question, which of the given statements can be dispensed with?  
 (A) Only A (B) Only B (C) A or B (D) None of these

**Directions (Q. No. 33-34) : Blood Relations**

33. Looking at a portrait of a man, Harsh said, "His mother is the wife of my father's son. Brothers and sisters I have none." At whose portrait was Harish looking?  
 (A) His son (B) His cousin (C) His uncle (D) His nephew
34. Pointing towards a boy, Veena said, "He is the son of only son of my grandfather." How is that boy related to Veena?  
 (A) Uncle (B) Brother (C) Cousin (D) Data inadequate

**Directions (Q. No. 35-36) : Study the information given below and answer the questions that follow :**

'A + B' means 'A is the daughter of B' ; 'A - B' means 'A is the husband of B'; 'A × B' means 'A is the brother of B'.

35. If  $P + Q - R$ , which of the following is true?  
 (A) R is the mother of P (B) R is the sister-in-law of P  
 (C) R is the aunt of P (D) R is the mother-in-law of P
36. If  $P \times Q + R$ , which of the following is true?  
 (A) P is the brother of R (B) P is the uncle of R  
 (C) P is the son of R (D) P is the father of R

**Directions (Q. No. 37-41) :** Study the following information carefully to answer the given questions :

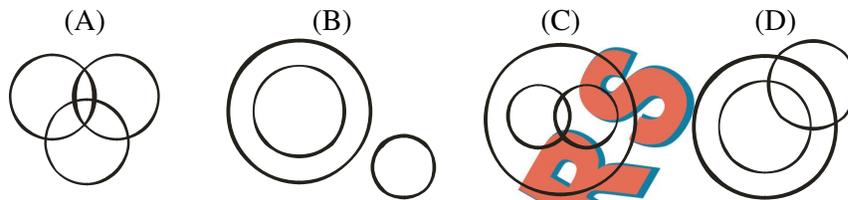
Madan and Rohit are in the same team of hockey. Parth defeated Rohit in badminton but lost to Sachin in tennis. Nitin teams with Sagar in football and with Sachin in hockey. Rohit defeated Sachin in chess. Those who play cricket do not play badminton, volleyball or tennis. Madan and Parth are in opposite teams of basketball. Nitin represents his state in cricket while Sagar does so at the district level. Boys who play chess do not play football, basketball or volleyball. Madan and Parth are together in the volleyball team. Boys who play football also play hockey.

37. Name the boys who do not play football  
 (A) Sachin, Nitin (B) Rohit, Sagar (C) Rohit, Sachin (D) Rohit, Nitin
38. Which is the most popular game with this group?  
 (A) Cricket (B) Hockey (C) Football (D) Badminton
39. Who plays both hockey and tennis?  
 (A) Sachin (B) Rohit (C) Nitin (D) Parth
40. Who plays the largest number of games?  
 (A) Sagar (B) Rohit (C) Parth (D) Nitin
41. Which boy plays both badminton and hockey?  
 (A) Sachin (B) Rohit (C) Nitin (D) Parth

**Directions (Q. No. 42-45) :** Study the following information carefully to answer the given questions :

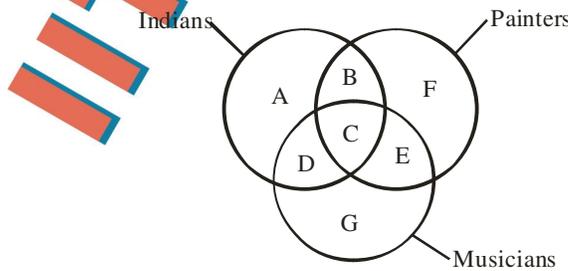
42. A man is facing south. He turns  $135^\circ$  in the anti-clockwise direction and then  $180^\circ$  in the clockwise direction. Which direction is he facing now?  
 (A) North-east (B) North-west (C) South-east (D) South-west
43. A river flows west to east and on the way turns left and goes in the semi-circle round a hillock, and then turns left at right angles. In which direction is the river finally flowing?  
 (A) West (B) East (C) North (D) South
44. If I stand on my head with my face pointing Southward, in what direction will my right hand point?  
 (A) West (B) East (C) North (D) South
45. The time on the watch is quarter to three. If the minute hand points to North-East, in which direction does the hour hand point?  
 (A) North-East (B) South-East (C) North-West (D) South-West

**Directions (Q. No. 46-50) :** In the following questions, three classes are given. Out of the four figures that follow, you have to indicate which figure will represent the best relationship amongst the three classes.



46. Men, Fathers, Doctors  
 (A) (B) (C) (D)
47. Metal, Iron, Chlorine  
 (A) (B) (C) (D)
48. Mammals, Cows, Crows  
 (A) (B) (C) (D)
49. Women, Mothers, Widows  
 (A) (B) (C) (D)
50. Authors, Teachers, Men  
 (A) (B) (C) (D)

**Direction (Q. No. 51-54) :** Given the following figure of relations choose the letter of the region which correctly match the statement.



51. Indians who are painters but not musicians  
 (A) B (B) C (C) D (D) G
52. Painters who are neither Indians nor musicians  
 (A) B (B) C (C) F (D) G
53. Indians who are musicians but not painters  
 (A) D (B) C (C) B (D) A
54. Indians who are painters as well as musicians  
 (A) A (B) B (C) C (D) D

**Directions (Q. No. 55-59) :** Study the following information carefully to answer the given questions :

55. In a queue, Amrita is 10<sup>th</sup> from the front while Mukul is 25<sup>th</sup> from behind and Mamta is just in the middle of the two. If there be 50 persons in the queue, what position does Mamta occupy from the front?  
 (A) 20<sup>th</sup> (B) 19<sup>th</sup> (C) 18<sup>th</sup> (D) 17<sup>th</sup>
56. Some boys are sitting in a row. P is sitting fourteenth from the left and Q is seventh from the right. If there are four boys between P and Q, how many boys are there in the row?  
 (A) 25 (B) 23 (C) 21 (D) 19
57. Which is the third number to the left of the number which is exactly in the middle of the following sequence of numbers?  
 1 2 3 4 5 6 7 8 9 2 4 6 8 9 7 5 3 1 9 8 7 6 5 4 3 2 1  
 (A) 3 (B) 4 (C) 5 (D) 6
58. How many 5s are there in the following numbers sequence which are immediately preceded by 7 and immediately followed by 6?  
 7 5 5 9 4 5 7 6 4 5 9 8 7 5 6 7 6 4 3 2 5 6 7 8  
 (A) One (B) Two (C) Three (D) Four
59. Sam ranked ninth from the top and thirty-eighth from the bottom in a classes. How many students are there in the class?  
 (A) 45 (B) 46 (C) 47 (D) 48

**Direction (Q. No. 60-61) :** In each of the following questions, arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provided below each question :

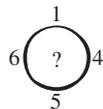
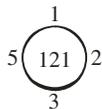
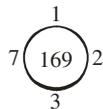
60. 1. Honey                      2. Flower                      3. bee                      4. Wax  
 (A) 1, 3, 4, 2                      (B) 2, 1, 4, 3                      (C) 2, 3, 1, 4                      (D) 4, 3, 2, 1
61. 1. Site                      2. Plan                      3. Rent                      4. Money  
 5. Building                      6. Construction  
 (A) 1, 2, 3, 6, 5, 4                      (B) 2, 3, 6, 5, 1, 4                      (C) 3, 4, 2, 6, 5, 1                      (D) 4, 1, 2, 6, 5, 3

**Direction (Q. No. 62-66) : Arithmetical Reasoning.**

62. A group of 1200 persons consisting of captains and soldiers is traveling in a train. For every 15 soldiers there is one captain. The number of captains in the group is  
 (A) 85 (B) 80 (C) 75 (D) 70
63. Aruna cut a cake into two halves and cuts one half into smaller pieces of equal size. Each of the small pieces is twenty grams in weight. If she has seven pieces of the cake in all with her, how heavy was the original cake?  
 (A) 120 grams (B) 140 grams (C) 240 grams (D) 280 grams
64. First bunch of bananas has  $\frac{1}{4}$  more as many bananas as a second bunch. If the second bunch has 3 bananas less than the first bunch, then the number of bananas in the first bunch is  
 (A) 9 (B) 10 (C) 12 (D) 15
65. At the end of a business conference the ten people present all shake hands with other once. How many handshakes will there be altogether?  
 (A) 20 (B) 45 (C) 55 (D) 90
66. In a caravan in addition to 50 hens, there are 45 goats and 8 camels with some keepers. If the total number of feet be 224 more than the number of heads in the caravan, the number of keepers is  
 (A) 6 (B) 8 (C) 10 (D) 15

**Direction (Q. No. 67-71) : In each of the following circles, the first two circles shows some operation on numbers around it and the result is given inside the circle. Based on these operations third circle is given find the inside number marked with (?).**

67.



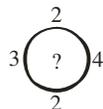
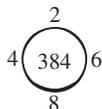
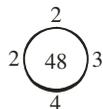
(A) 196

(B) 246

(C) 250

(D) 256

68.



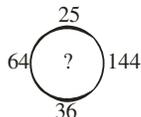
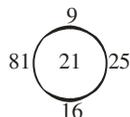
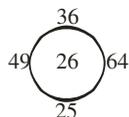
(A) 42

(B) 44

(C) 46

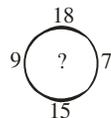
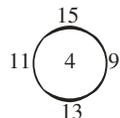
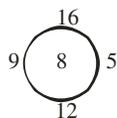
(D) 48

69.



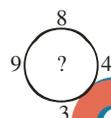
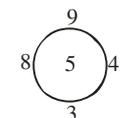
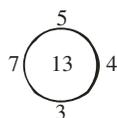
- (A) 24 (B) 24 (C) 23 (D) 31

70.



- (A) 24 (B) 5 (C) 28 (D) 22

71.



- (A) 12 (B) 8 (C) 4 (D) 5

**Direction (Q. No. 72-76) :** In each of the following squares of three into three matrix of certain rows and columns are operated by the numbers in the square you have to find out the (?) from that operation.

72.

13	54	?
7	45	32
27	144	68

- (A) 42 (B) 36 (C) 6 (D) 4

73.

13	4	165
3	2	7
?	11	14

- (a) 25 (b) 7 (c) 5 (d) 2

74.

5	8	7
11	17	15
21	33	?

- (a) 29 (b) 31 (c) 28 (d) 33

75.

41	43	4
47	53	36
?	61	4

- (a) 57 (b) 59 (c) 63 (d) 47

76.

2	3	31
5	7	368
1	4	?

- (a) 25 (b) 45 (c) 17 (d) 65

**Direction (Q. No. 77-79) :** In each of the questions given below, there are two statements labeled as Assertion (A) and Reason (R).

Mark your answer as per the codes provided below :

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is not the correct explanation of A.
- (C) A is true but R is false
- (D) Both A and R are false

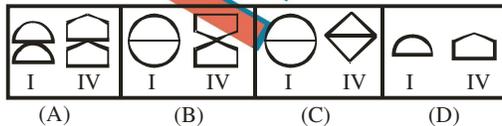
77. **Assertion (A) :** When lightning strikes, the sound is heard a little after the flash is seen.  
**Reason (R) :** The velocity of light is greater than that of the sound.  
 (A) (B) (C) (D)
78. **Assertion (A) :** A ship rises as it enters the sea from a river.  
**Reason (R) :** The density of sea water is higher as compared to river water.  
 (A) (B) (C) (D)
79. **Assertion (A) :** Indian President is the head of the State  
**Reason (R) :** Indian Parliament consists of the President, Lok Sabha and Rajya Sabha.  
 (A) (B) (C) (D)

**Direction (Q. No. 80) :** In each of the following questions, there are four figures marked I, II, III and IV which constitute the Problem Set and four figures marked A, B, C and D each further consisting of two figures marked I and IV which constitute the Answer Set. Select a figure from the Answer Set, the contents of which may best substitute the question marks in Problem Set such that fig. III is related to fig. IV in the same way as fig. I is related to fig. II.

80. **PROBLEM FIGURES**

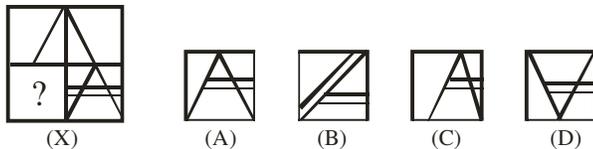


**ANSWER FIGURES**

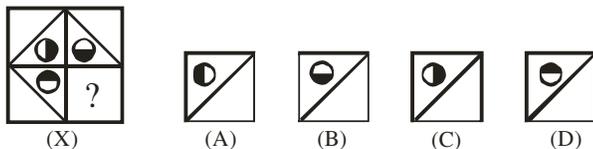


**Direction (Q. No. 81-84) :** In each of the following questions. Select a figure amongst the four alternatives, which when placed in the blank space of fig. (X) would complete the pattern.

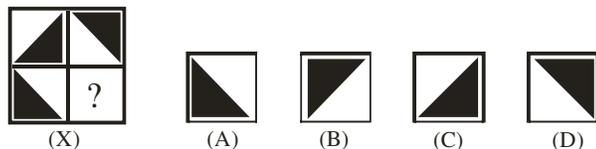
81.



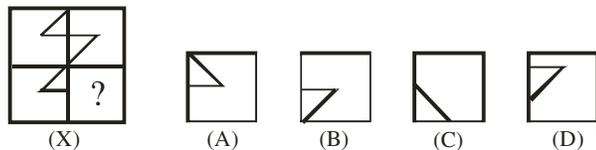
82.



83.

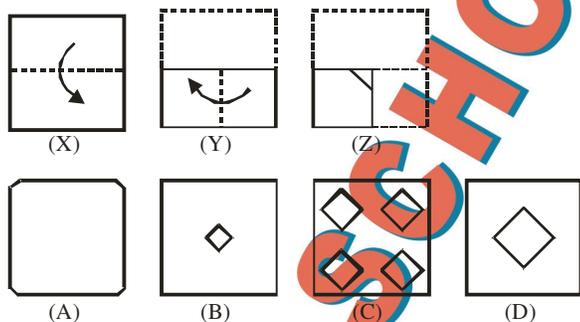


84.

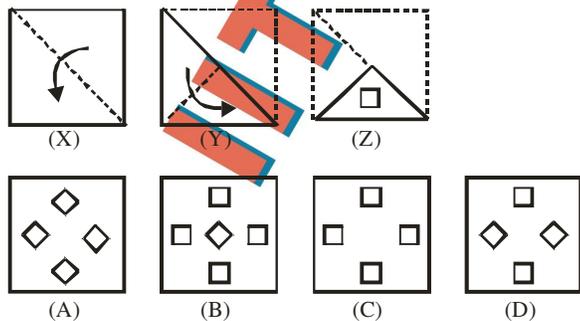


**Direction (Q. No. 85-86) :** Each of the following questions consists of a set of three figures X, Y and Z showing a sequence of folding of a piece of paper. Fig. (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of fig. (Z).

85.



86.



**Direction (Q. No. 87-90) :** A dice having side length 5 cm is coloured red on all the faces. Then the dice is cut into 125 dice pieces having side length 1 cm. find

87. Number of pieces having 3 faces red  
 (A) 8 (B) 6 (C) 12 (D) 16
88. Number of pieces having 2 faces red  
 (A) 21 (B) 48 (C) 36 (D) 64
89. Number of pieces having 1 face red  
 (A) 36 (B) 72 (C) 54 (D) 64
90. No face red  
 (A) 16 (B) 25 (C) 49 (D) 27