

# FIITJEE MOCK TEST-2

For NTSE STAGE-2

## Mental Ability Test (MAT)

Time:120 Minutes

Maximum Marks:100

Please read the instructions carefully.

### INSTRUCTIONS

#### A: General :

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball point pen.
2. Use **Blue/Black Ball Point Pen only** for writing particulars on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**
3. Darken the appropriate bubbles with **Blue/Black Ball Point Pen** only.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed.
5. The answer sheet, a machine-gradable Objective Response Sheet (ORS) is provided separately.
6. Do not Tamper/mutilate the **ORS** or this booklet.
7. No additional sheets will be provided for rough work
8. On completion of this test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

#### B: Questions paper format and Marking Scheme :

1. The question paper consists of 100 questions.
2. For each question you will be **awarded 1 marks** if you darken the bubble corresponding to the correct answer and zero mark if no bubbles is darkened. No Negative Mark will be awarded.

Enrollment No. :

Batch : \_\_\_\_\_

Name : \_\_\_\_\_

Candidate's Signature \_\_\_\_\_ Invigilator's Signature: \_\_\_\_\_

1. 'Apparel' is related to cloth in the same way as 'Footwear' is related to \_\_\_\_\_?  
 (A) Material (B) Leather (C) Cobbler (D) Shoes
2. DE : 10 :: HI : ?  
 (A) 17 (B) 20 (C) 36 (D) 46
3.  $\frac{T}{J} : 2 :: \frac{X}{H} : ?$   
 (A) 2 (B) 3 (C)  $\frac{23}{7}$  (D) 4

**Directions (Q. 4 to Q. 5):** Choose the word which is least like the other words in group.

4. (A) May (B) July (C) August (D) November
5. (A) Pistol (B) Sword (C) Gun (D) Rifle
6. In a certain language, ORIENTAL is written as MBUOFJSP. How is COWARDLY written in that code language?  
 (A) XKCQBXPB (B) XLBQCXPB (C) ZMESDPXB (D) None of these
7. In a certain code, DECEMBER is written as ERMBCEDE. Which word will be written as ERMBVENO in that code?  
 (A) AUGUST (B) SEPTEMBER (C) OCTOBER (D) NOVEMBER
8. If E = 5 and HOTEL = 12 how will you code LAMB?  
 (A) 7 (B) 10 (C) 26 (D) 28
9. If 'eraser' is called 'box', 'box' is called 'pencil', 'pencil' is called 'sharpener' and 'sharpener' is called 'bag', what will a child write with?  
 (A) Eraser (B) Box (C) Pencil (D) Sharpener

**Directions (Q. 10 to Q. 11):** In a certain code language, '481' means 'sky is blue', '246' means 'sea is deep' and '698' means 'sea looks blue'.

10. What number is the code for 'deep'?  
 (A) 1 (B) 2 (C) 4 (D) 6
11. What number is the code for 'sea'?  
 (A) 2 (B) 4 (C) 6 (D) 8
12. Pointing towards a girl in the picture, Sarita said, "she is the mother of Neha whose father is my son". How is related to the girl in the picture?  
 (A) mother (B) aunt (C) cousin (D) None of these

**Directions (Q. 13 to Q. 16):** All the six members of a family A, B, C, D, E and F are travelling together. B is the son of C but C is not the mother of B. A and C are a married couple. E is the brother of C. D is the daughter of A. F is brother of B.

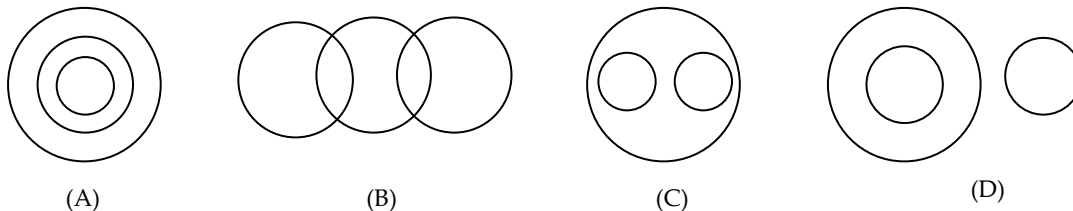
13. How many male members are there in the family?  
 (A) 1 (B) 2 (C) 3 (D) 4
14. Who is mother of B?  
 (A) D (B) F (C) E (D) A
15. Which of the following is a pair of females?  
 (A) AE (B) BD (C) DF (D) AD
16. How is E related to D?  
 (A) father (B) brother (C) uncle (D) can't be determined

**Directions (Q. 17 to Q. 20):** A class is to be taught five subjects Hindi, Physics, Chemistry, Biology and Mathematics by five different teachers A, B, C, D and E in five periods (1 to 5). A teacher can teach in only one of the periods. The following details are available about the teaching.

- A teaches mathematics which is not taught in the first period.
- Physics is taught by D in an even numbered period.
- Chemistry is taught in an odd period, and it precedes mathematics period.
- E teaches in the first period.
- C teaches Chemistry but not in the first or last periods.
- Hindi is taught in the last period.

17. Which of the following statements is necessarily true?  
 (A) Third period is of Hindi taught by B.  
 (B) Second period is of Physics taught by C.  
 (C) Fourth period is of Physics taught by D.  
 (D) Fifth period is of Biology taught by D.
18. Which subject is taught by B?  
 (A) Physics (B) Chemistry (C) Biology (D) Hindi
19. Chemistry is taught in which period?  
 (A) 1<sup>st</sup> (B) 3<sup>rd</sup> (C) 5<sup>th</sup> (D) 4<sup>th</sup>
20. Biology is taught by whom?  
 (A) A (B) B (C) D (D) None of these
21. If A is to the south of B and C is to the east of B, in what direction is A with respect to C?  
 (A) north-east (B) north-west (C) south-east (D) south-west
22. Laxman went 15 kms to the west from my house, then turned left and walked 20 kms. He then turned east and walked 25 kms and finally turning left covered 20 kms. How far was he from his house?  
 (A) 5 kms (B) 10 kms (C) 40 kms (D) 80 kms

**Directions (Q. 23 to Q. 27):** Choose the Venn diagram which best illustrates the three given classes in each question:



23. Rings, Ornaments, Diamond rings  
 24. Furniture, Tables, Books  
 25. Indoor Games, Chess, Table Tennis  
 26. Dogs, Pets, Cats  
 27. Rhombus, Quadrilaterals, Polygons

**Directions (Q. 28 to Q. 32):** Insert the missing character in each of the following:

28.  $\begin{matrix} 27 & & 54 \\ & \diagdown & / \\ & Y & \\ & | & \\ & 9 & \end{matrix}$      $\begin{matrix} 42 & & 84 \\ & \diagdown & / \\ & Y & \\ & | & \\ & 14 & \end{matrix}$      $\begin{matrix} ? & & 42 \\ & \diagdown & / \\ & Y & \\ & | & \\ & 7 & \end{matrix}$
- (A) 21                      (B) 35                      (C) 28                      (D) 56

29.  $\begin{matrix} 36 \\ 49 \square 64 \\ 25 \end{matrix}$      $\begin{matrix} 9 \\ 81 \square 25 \\ 16 \end{matrix}$      $\begin{matrix} 25 \\ 64 \square 144 \\ 36 \end{matrix}$
- (A) 19                      (B) 23                      (C) 25                      (D) 31

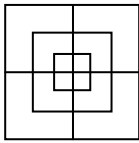
30.  $\begin{matrix} \square \\ 6 \square 15 \\ 3 \end{matrix}$      $\begin{matrix} \square \\ 9 \square 5 \\ 6 \end{matrix}$      $\begin{matrix} \square \\ 4 \square 1 \\ 8 \end{matrix}$
- (A) 5                      (B) 19                      (C) 27                      (D) 89

31.  $\begin{matrix} 11 & 44 \\ \diagdown & / \\ 110 \\ \diagup & \diagdown \\ 22 & 33 \end{matrix}$      $\begin{matrix} 16 & 40 \\ \diagdown & / \\ 112 \\ \diagup & \diagdown \\ 24 & 32 \end{matrix}$      $\begin{matrix} ? & 12 \\ \diagdown & / \\ 114 \\ \diagup & \diagdown \\ 23 & 34 \end{matrix}$
- (A) 35                      (B) 37                      (C) 45                      (D) 46

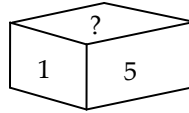
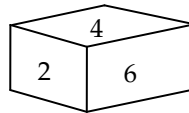
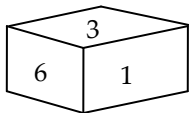
32. 

2	4	0
1	2	4
3	1	3
36	?	91
- (A) 25                      (B) 48                      (C) 59                      (D) 73

33. Count the number of squares in the following figure?



- (A) 8                      (B) 12                      (C) 15                      (D) 18
34. Three positions of the same dice are given below, observe the figure carefully and tell which number will come place of '?'



- (A) 2                      (B) 3                      (C) 6                      (D) Can't be determined

**Directions (Q. 35 to Q. 39):** A cuboids of dimensions (6 cm × 4 cm × 1 cm) is painted black on both the surfaces of dimensions (4 cm × 1 cm), green on the surfaces of dimensions (6 cm × 4 cm) and red on the surfaces of dimensions (6 cm × 1 cm). Now the black is divided into various smaller cubes of side 1 cm each. The smaller cubes so obtained are separated.

35. How many cubes will have all three colours black, green and red each at least on one side?  
 (A) 16                      (B) 12                      (C) 10                      (D) 8
36. How many cubes will be formed?  
 (A) 6                      (B) 12                      (C) 16                      (D) 24
37. If cubes having only black as well as green colour are removed then how many cubes will be left?  
 (A) 4                      (B) 8                      (C) 16                      (D) 18
38. How many cubes will have 4 coloured sides and 2 sides without colour?  
 (A) 8                      (B) 4                      (C) 16                      (D) 10
39. how many cubes will have two sides with green colour and remaining sides without any colour?  
 (A) 12                      (B) 10                      (C) 8                      (D) 4
40. At what time between 2 and 3 O'clock the hands of clock will make an angle of 160°?  
 (A) 20 min past 2                      (B) 30 min past 2                      (C) 40 min past 2                      (D) 50 min past 2






41. At what time between 4 and 5 will the hands of a clock are perpendicular?  
 (A)  $4:5\frac{5}{11}$  minutes      (B)  $4:38\frac{2}{11}$  minutes      (C) both A and B      (D) None of these

42. If it was Saturday on 17<sup>th</sup> November, 1962 what will be the day on 22<sup>nd</sup> November 1964?  
 (A) Monday      (B) Tuesday      (C) Wednesday      (D) Sunday

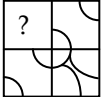




**Directions (Q. 43 to Q. 46):** In the following questions, three out of the four alternatives are same in a certain way and so form a group. Choose the odd one that does not belong to the group.

43. (A) 22 : 8      (B) 91 : 82      (C) 32 : 12      (D) 14 : 17  
 44. (A) Green      (B) Violet      (C) Brown      (D) Yellow  
 45. (A) DW      (B) GT      (C) KP      (D) FR  
 46. (A) A8C      (B) D22G      (C) H42M      (D) F34J

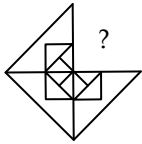
**Directions (Q. 47 to Q. 50):** Select a figure from the alternatives which when placed in the blank space of (X) would complete the pattern?

47.   
 (X)  
 (A)       (B)   
 (C)       (D) 

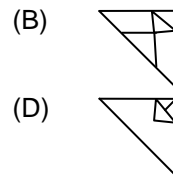
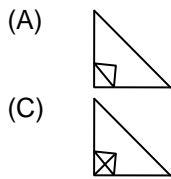
48.   
 (X)  
 (A)       (B)   
 (C)       (D) 

49.   
 (X)  
 (A)       (B)   
 (C)       (D) 

50.



(X)



51. 200 men had enough food for 15 days, but due to arrival of some man the food lasted 12 days only. How many more man arrived?  
 (A) 40 (B) 50 (C) 45 (D) 55
52. In what ratio must a grocer mix two varieties of sugar worth Rs 60/kg and Rs 65/kg so that by selling the mixture at Rs 68.20/kg he gains 10%.  
 (A) 2 : 3 (B) 3 : 2 (C) 1 : 4 (D) 4 : 1
53. A boy goes to school at a speed of 3 km/hr returns to the village at a speed of 2 km/hr. He takes 5 hrs in all. What is the distance between the village and the school.  
 (A) 5 kms (B) 4 kms (C) 3 kms (D) 6 kms
54. If  $x + \frac{1}{2x} = 3$  then  $8x^3 + \frac{1}{x^3} = ?$   
 (A) 156 (B) 182 (C) 192 (D) None of these
55. A reduction of 25% in the price of tea enables a person to buy 5 kg more for Rs 120. Find the original price of tea per kg.  
 (A) Rs 8 per kg (B) Rs 6 per kg (C) Rs 10 per kg (D) Rs 12 per kg
56. Peter got 30% of the total marks in an examination and failed by 10 marks, John got 40% of the total marks in the same exam which is 15 more than the passing marks. Find the passing marks.  
 (A) 75 (B) 80 (C) 85 (D) 95

**Directions (Q. 57 to Q. 61):** Read the given two statements and give answer

- (A) If only Conclusion I follows;  
 (B) If only Conclusion II follows;  
 (C) If neither Conclusion I nor II follows;  
 (D) Both Conclusion I and II follow.

57. **Statements:**

All flowers are trees.  
 No fruit is trees.

**Conclusions:**

- I. No fruit is flower.  
 II. Some trees are flowers.

58. **Statements:**

All cows are horses.  
 Some hens are cows.

**Conclusions:**

- I. Some horses are hens.  
 II. Some hens are horses.

59. **Statements:**

All huts are mansions.  
 All mansions are temples.

**Conclusions:**

- I. Some temples are huts.  
 II. Some temples are mansions.

60. **Statements:**

Many scooters are trucks.  
all trucks are trains.

**Conclusions:**

- I. Some scooters are trains.
- II. No truck is a scooter

61. **Statements:**

Most teachers are boys.  
Some boys are students.

**Conclusions:**

- I. some students are boys.
- II. Some teachers are students.

62. If the selling price of product is increased by Rs 162, then the business would make a profit of 17% instead of a loss of 19%. What is the cost price of the product?  
(A) Rs 540 (B) Rs 450 (C) Rs 360 (D) Rs 600
63. Two persons are walking in the same direction at the rate of 3 km/hr and 6 km/hr. A train comes running from behind and passes them in 9 s and 10 s respectively, the speed of train is  
(A) 22 km/hr (B) 40 km/hr (C) 33 km/hr (D) 35 km/hr

**Directions (Q. 64 to Q. 66):** Read the following information and answer the questions based on them

If a survey conducted in a city, it is found that 40% citizens prefer thumps up, 32% prefer limca and 50% prefer cocacola. Only 5% prefer all the three. 10% prefer thumps up and limca, 18% prefer limca and cocacola and 20% prefer thumps up and cocacola.

64. How many citizens prefer thumps up only?  
(A) 10% (B) 15% (C) 8% (D) 12%
65. Find the ratio of these who prefer limca only to those to there who prefer cocacola only?  
(A) 2 : 3 (B) 1 : 2 (C) 8 : 17 (D) 9 : 17
66. What is the ratio of those who prefer cocacola only to those who prefer either thumpsup or limca or both?  
(A) 17 : 62 (B) 17 : 80 (C) 17 : 29 (D) 17 : 49

**Directions (Q. 67 to Q. 72):** Study the following information to answer the given questions a word and number arrangement machine when given an input line of words and numbers, rearranges them following a particular rule. The following is an illustration of input and rearrangement. (All the numbers are two-digits numbers)

Input 'at 52 93 46 gate join us 19 to 33 dine 27'  
Step I 19 at 52 46 gate join us to 33 dine 27 93  
Step II 27 19 at 46 gate join us to 33 dine 93 52  
Step III 33 27 19 at gate join us to dine 93 52 46  
Step IV at 33 27 19 gate join to dine 93 52 46 us  
Step V dine at 33 27 19 gate join 93 52 46 us to  
Step VI gate dine at 33 27 19 93 52 46 us to join

and Step VI is the last step of the arrangement of the above input as the intended arrangement is obtained. As per the rules followed in the above steps, find one in each of the following questions the appropriate steps for the given input, input for the questions.

Input '71 14 side wall 97 for hat 65 27 gun 81 bat' (All the numbers given in the arrangement are two-digit members)

67. Which word/number would be at the 5<sup>th</sup> position from the left in Step I?  
(A) 97 (B) side (C) hat (D) for
68. In the last step of the arrangement, 'for' is related to '65' following a particular pattern in the same way '97' is related to '71'. 'wall' is related to which of the following if the same pattern is followed?  
(A) gun (B) hat (C) 81 (D) for
69. Which of the following represents the position of '71' in Step II of the given input?  
(A) Ninth from the right (B) Second from the left  
(C) Seventh from the right (D) Third from the left

70. Which step number would be the following output? bat 65 27 14 side gun hat for 97 81 71 wall  
(A) Step III (B) Step VI (C) Step II (D) There will be no such step
71. Which of the following would be the Step III?  
(A) for bat 65 27 14 hat gun 97 81 71 wall side (B) 65 27 14 side wall for hat bat gun 97 81 71  
(C) 65 27 14 side wall for hat gun bat 71 81 97 (D) 65 27 14 side wall for hat gun bat 97 81 71
72. Which word/number would be at the 7<sup>th</sup> position from the right in Step V?  
(A) hat (B) gun (C) for (D) side
73. How many steps are required to complete the arrangement?  
(A) Four (B) Five (C) Six (D) Seven

**Directions (Q. 74 to Q. 78):** Read the following information and choose the right alternate for the questions given afterwards.

The sports week of an institute was organized from 19<sup>th</sup> to 26<sup>th</sup> of a month. 19<sup>th</sup> being a Wednesday. During that period six games Cricket, Badminton, Table-Tennis, Kho-Kho, Hockey and football were played one game on each day. Further information is:

- (i) Hockey was not played on the closing day i.e. on 26<sup>th</sup>.  
(ii) Table-Tennis was played on the previous day of cricket.  
(iii) Football was not played either on Wednesday or Saturday.  
(iv) No game was played on Thursday and Sunday.  
(v) Kho-Kho was played on Monday.  
(vi) There was a gap of two days between cricket and football.

74. The sports week started with which game?  
(A) Table-Tennis (B) Cricket (C) Kho-Kho (D) Hockey
75. How many day's gap is there between Hockey and Football?  
(A) Three (B) Four (C) Five (D) Two
76. Which pair of games was played on Wednesday?  
(A) Hockey and Badminton (B) Hockey and Cricket  
(C) Cricket and Tennis (D) None of these
77. Which game exactly precedes Kho-Kho?  
(A) Hockey (B) Football (C) Cricket (D) None of these
78. Table-Tennis followed by which game?  
(A) Hockey (B) Cricket (C) Tennis (D) Cannot be determined
79. If PLANT is coded as 73152, then how TREE is coded as the same code language?  
(A) 2955 (B) 2533 (C) 2813 (D) 5316

**Directions (Q. 80 to 83):** In each of the questions below, is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to consider the statement and the assumptions and decide which of the assumption(s) is/are implicit in the statement.

- (A) If only assumption I is implicit.  
(B) If only assumption II is implicit.  
(C) If both I and II are implicit.  
(D) If neither I nor II is implicit.

80. **Statement:**  
Want to be a PO? Get admission into institute 'M', A tells B.  
**Assumptions:**  
I B will hear A's advice.  
II A knows about M institute.



81. **Statement:**  
The next meeting of the governing body of the Arihant Publication will be held after one year.  
**Assumptions:**  
I There will be no meeting before one year.  
II Arihant Publication will remain in function after one year.

82. **Statement:**  
Please do not lean out of the running bus, a notice in a tourist bus.  
**Assumptions:**  
I Leaning out of running bus is dangerous.  
II The passengers are likely to pay attention to this notice.

83. **Statement:**  
'A' computer, the largest selling name with the largest range, an advertisement.  
**Assumptions:**  
I 'A' computer is the only one with the wide variations.  
II There is a demand for computers in the market.

**Directions (Q. 84 to Q. 88):** Study the following information carefully and answer the questions given below.

P, Q, R, S, T, V, W and Z are going to three destinations Delhi, Chennai and Hyderabad in three different vehicles – Honda City, Swift D'Zire and Ford Ikon. There are three females among them-one in each car. There are atleast two persons in each car. R is not travelling with Q and W. T, a male, is travelling with only Z and they are not going to Chennai. P is travelling in Honda City and is going to Hyderabad. S is the sister of P and is travelling by Ford Ikon. V and R are travelling together. W is not going to Chennai.

84. Members of which of the following cars are going to Chennai?  
(A) Honda City (B) Swift D'Zire  
(C) Ford Ikon (D) Either Swift D'Zire or Ford Ikon
85. In which car are four members travelling?  
(A) None (B) Honda City (C) Swift D'Zire (D) Ford Ikon
86. Which of the following combinations represents the three female members?  
(A) QSZ (B) WSZ (C) PSZ (D) Cannot be determined
87. Who is travelling with W?  
(A) Only Q (B) Only P (C) Both P and Q (D) Cannot be determined
88. Members of which of the following combinations are travelling in Honda City?  
(A) PRS (B) PQW (C) PWS (D) Data inadequate

**Directions (Q. 89 to Q. 90):** Read the following information carefully and answer the questions given below:

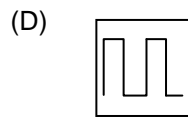
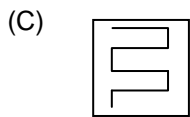
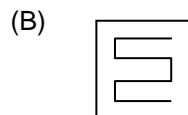
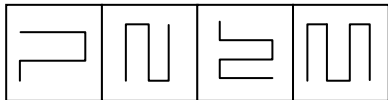
'P # Q' means 'P is father of Q'  
'P + Q' means 'P is mother of Q'  
'P - Q' means 'P is brother of Q'  
'P × Q' means 'P is sister of Q'

89. If  $A + B \# C - D$ , then A is D's  
(A) Father (B) Grandmother (C) Sister (D) Grandfather
90. Which of the following shows that A is the aunt of E?  
(A)  $A + B - C \times D \# E$  (B)  $A \# B \times C + D - E$  (C)  $A \times B \# C \times D - E$  (D)  $A - B \# C \times D - E$
91. Find the remainder when  $923^{888} + 235^{222}$  is divided by 4?  
(A) 2 (B) 3 (C) 4 (D) 6
92. Find the remainder of  $\frac{3^{9415}}{80}$   
(A) 25 (B) 27 (C) 36 (D) 12

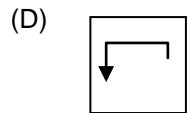
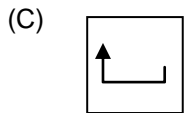
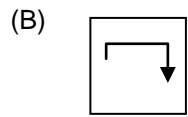
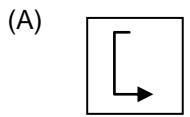
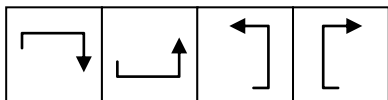
93. The remainder of  $\frac{2^{243}}{3^2}$  is:  
 (A) 8 (B) 10 (C) 4 (D) None of these
94. Out of the following four choices which does not show the coinciding of the hour hand and minute hand?  
 (A) 3 : 16 : 20 (B) 6 : 32 : 43 (C) 9 : 59 : 05 (D) 5 : 27 : 16
95. Kumbhakaran starts sleeping between 1 am and 2 am and he wakes up when his watch shows such a time that the two hands (i.e., hour hand & minute hand) interchange the respective places. He wakes up between 2 am and 3 am on the same night. How long does he sleep?  
 (A)  $55\frac{5}{13}$  min (B)  $110\frac{10}{13}$  min (C)  $54\frac{6}{13}$  min (D) None of these
96. Sonu can do a piece of work in 20 days. He started the work and left after some days, when 25% work was done. After it Abhijeet joined & completed it working for 10 days. In how many days Sonu & Abhijeet can do the complete work, working together?  
 (A) 6 (B) 8 (C) 10 (D) 12

**Directions (Q. 97 to Q. 100):** Select a figure from amongst the answer figures which will continue the series established by the four problem figures.

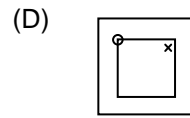
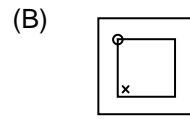
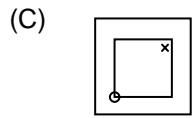
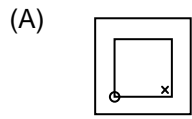
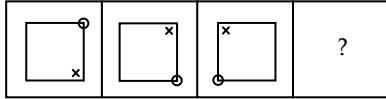
97. Problem figures



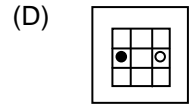
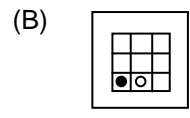
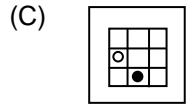
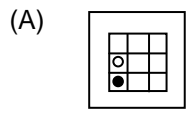
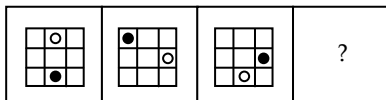
98. Problem figures



99. Problem figures



100. Problem figures



# FIITJEE MOCK TEST-2

For NTSE STAGE-2

## Mental Ability Test (MAT)

ANSWERS

1. B  
Sol. Footwear's are made from 'Leather'.

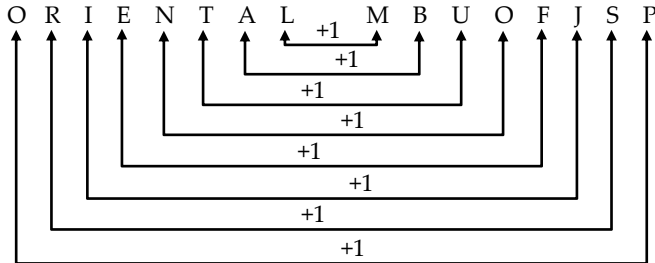
2. C  
Sol.  $\frac{HI}{2} = \frac{8 \times 9}{2} = 36$

3. B  
Sol.  $\frac{X}{H} = \frac{24}{8} = 3$

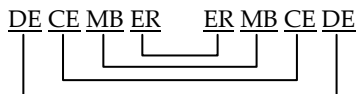
4. D  
Sol. Except 'November' all has 31 days.

5. B  
Sol. Except 'Sword' all are electronic weapons.

6. D  
Sol.



7. D  
Sol.



8. A  
Sol.  $\frac{HOTEL}{5} = \frac{5+15+20+5+12}{5} = 12$

9. D  
Sol. Child write with 'Pencil', 'Pencil' is called 'Sharpner'.

10. B  
Sol.

4 (8) 1 Sky is (Blue)

2 4 6 Sea is Deep

6 9 (8) Sea looks (Blue)

11. C  
Sol.

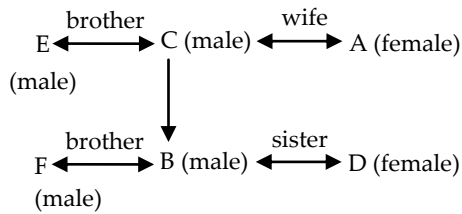
4 (8) 1 Sky is (Blue)

2 4 6 Sea is Deep

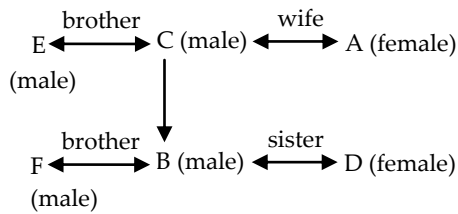
6 9 (8) Sea looks (Blue)

12. D  
Sol. Girl is daughter in law of Sarita.

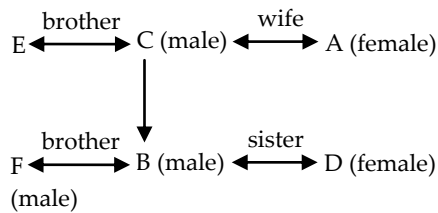
13. D  
Sol.



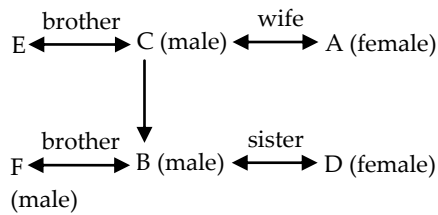
14. D  
Sol.



15. D  
Sol.



16. C  
Sol.



17. C  
Sol.

1 <sup>st</sup> Period	E	Biology
2 <sup>nd</sup> Period	A	Mathematics
3 <sup>rd</sup> Period	C	Chemistry
4 <sup>th</sup> Period	D	Physics
5 <sup>th</sup> Period	B	Hindi

18. D  
Sol.

1 <sup>st</sup> Period	E	Biology
2 <sup>nd</sup> Period	A	Mathematics
3 <sup>rd</sup> Period	C	Chemistry
4 <sup>th</sup> Period	D	Physics

5 <sup>th</sup> Period	B	Hindi
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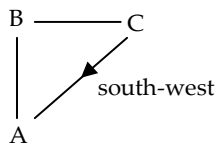
19. B  
Sol.

1 <sup>st</sup> Period	E	Biology
2 <sup>nd</sup> Period	A	Mathematics
3 <sup>rd</sup> Period	C	Chemistry
4 <sup>th</sup> Period	D	Physics
5 <sup>th</sup> Period	B	Hindi

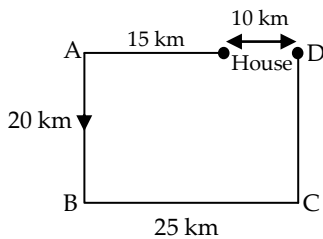
20. D  
Sol.

1 <sup>st</sup> Period	E	Biology
2 <sup>nd</sup> Period	A	Mathematics
3 <sup>rd</sup> Period	C	Chemistry
4 <sup>th</sup> Period	D	Physics
5 <sup>th</sup> Period	B	Hindi

21. D  
Sol.



22. B  
Sol.



23. A  
Sol. Ring is an ornaments

24. D  
Sol. Table is a furniture

25. C  
Sol. Both are indoor games

26. B  
Sol. Some dogs are pets  
Some cats are pets

27. A  
Sol. Rhombus is a quadrilateral and quadrilateral is a polygon.

28. A  
Sol.  $\frac{x+42}{7} = 9$   
 $x = 21$

29. D  
Sol.  $\sqrt{64} + \sqrt{144} + \sqrt{25} + \sqrt{36} = 31$

30. D  
Sol.  $9 \times 6 + 7 \times 5 = 89$

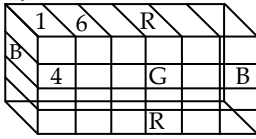
31. C  
Sol.  $23 + 34 + 12 + ? = 114$

32. D  
Sol.  $4^3 + 2^3 + 1^3 = 73$

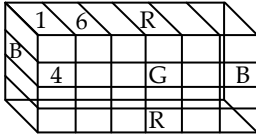
33. C  
Sol.  $5 + 5 + 5 = 15$

34. D  
Sol. 2 or 3

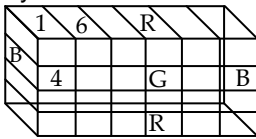
35. A  
Sol. By observation



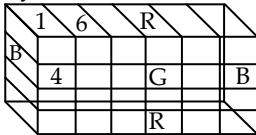
36. D  
Sol. By observation



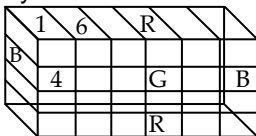
37. C  
Sol. By observation



38. B  
Sol. By observation



39. C  
Sol. By observation



After analysing the figure solve the problem by observations.

40. C  
Sol. Angle at 2 : 40 =  $180 - \frac{1}{2} \times 40 = 160^\circ$

41. C  
Sol.  $\theta = 30H - \frac{11}{2}M$ ;  $90^\circ = 30 \times 4 - \frac{11}{2}M$ ;  $M = \frac{60}{11} = 5 \frac{5}{11}$  min

or

$$\frac{11}{2}M = 90 + 120$$

$$M = \frac{420}{11} = 38 \frac{2}{11} \text{ min}$$

42. D  
Sol. Total odd days =  $1 + 2 + 5 \Rightarrow 1$  odd day.

43. C  
Sol.  $2^2 + 2^2 = 8$ ,  $9^2 + 1^2 = 82$   $3^2 + 2^2 \neq 12$

44. C  
Sol. Except Brown all are present in rainbow.

45. D  
Sol. Except FR, in alphabet sum of their positions is 27.

46. D

Sol. Except D, no. in the middle twice the sum of the position of letters in alphabet.

47. B  
Sol. By observation

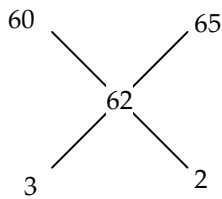
48. A  
Sol. By observation

49. C  
Sol. By observation

50. D  
Sol. By observation

51. B  
Sol.  $200 \times 15 = (200 + x) \times 12$   
 $x = 50$

52. B  
Sol. CP of mixture = 62

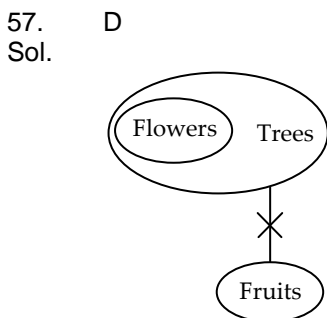


53. D  
Sol.  $\frac{x}{3} + \frac{x}{2} = 5 \Rightarrow x = 6 \text{ km}$

54. D  
Sol.  $2x + \frac{1}{x} = 6$   
 $8x^3 + \frac{1}{x^3} = 6^3 - 3 \times 2 \times 6$   
 $= 180$

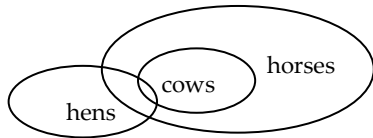
55. A  
Sol.  $\frac{120}{3x/4} - \frac{120}{x} = 5$   
 $x = \text{Rs } 8 \text{ per kg}$

56. C  
Sol. 40% of total marks – 30% of total marks = 25  
total marks = 250  
passing marks = 30% of 250 + 10  
= 85

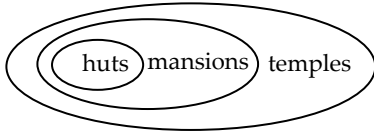


58. D  
Sol.

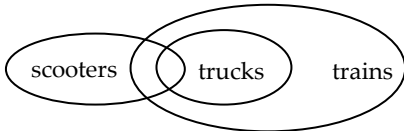




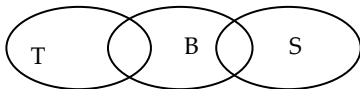
59. D  
Sol.



60. A  
Sol.



61. A  
Sol.



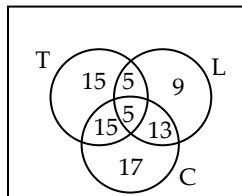
62. B  
Sol. 36% of CP ----- 162

$$CP = \frac{162}{36} \times 100 = \text{Rs } 450$$

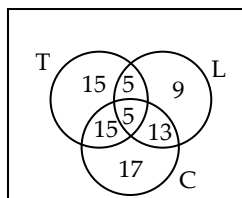
63. C

Sol.  $\left( (x-3) \times \frac{5}{18} \right) \times 9 = \left( (x-6) \times \frac{5}{18} \right) \times 10$

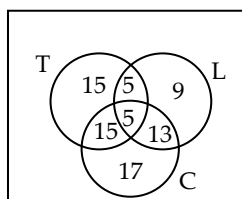
64. B  
Sol.



65. D  
Sol.



66. A  
Sol.



67. D  
Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat

Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

68.

B  
 Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat  
 Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

69.

D  
 Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat  
 Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

70.

D  
 Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat  
 Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

71.

D  
 Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat  
 Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

72.

C  
 Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat  
 Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

73.

C  
 Sol. Input 71 14 side wall 97 for hat 65 27 gun 81 bat  
 Step I 14 71 side wall for hat 65 27 gun 81 bat 97  
 Step II 27 14 71 side wall for hat 65 gun bat 97 81  
 Step III 65 27 14 side wall for hat gun bat 97 81 71  
 Step IV bat 65 27 14 side for hat gun 97 81 71 wall  
 Step V for bat 65 27 14 side for hat gun 97 81 71 wall  
 Step VI gun for bat 65 27 14 97 81 71 wall side hat

74.

D  
 Sol.

19 <sup>th</sup>	Wednesday	Hockey
20 <sup>th</sup>	Thursday	X

21 <sup>st</sup>	Friday	Table-Tennis
22 <sup>nd</sup>	Saturday	Cricket
23 <sup>rd</sup>	Sunday	X
24 <sup>th</sup>	Monday	Kho-Kho
25 <sup>th</sup>	Tuesday	Football
26 <sup>th</sup>	Wednesday	Badminton

75. Sol. C

19 <sup>th</sup>	Wednesday	Hockey
20 <sup>th</sup>	Thursday	X
21 <sup>st</sup>	Friday	Table-Tennis
22 <sup>nd</sup>	Saturday	Cricket
23 <sup>rd</sup>	Sunday	X
24 <sup>th</sup>	Monday	Kho-Kho
25 <sup>th</sup>	Tuesday	Football

26<sup>th</sup>  
Wednesday  
Badminton

76. Sol. A

19 <sup>th</sup>	Wednesday	Hockey
20 <sup>th</sup>	Thursday	X
21 <sup>st</sup>	Friday	Table-Tennis
22 <sup>nd</sup>	Saturday	Cricket
23 <sup>rd</sup>	Sunday	X
24 <sup>th</sup>	Monday	Kho-Kho
25 <sup>th</sup>	Tuesday	Football
26 <sup>th</sup>	Wednesday	Badminton

77. Sol. D

19 <sup>th</sup>	Wednesday	Hockey
20 <sup>th</sup>	Thursday	X
21 <sup>st</sup>	Friday	Table-Tennis
22 <sup>nd</sup>	Saturday	Cricket
23 <sup>rd</sup>	Sunday	X
24 <sup>th</sup>	Monday	Kho-Kho
25 <sup>th</sup>	Tuesday	Football
26 <sup>th</sup>	Wednesday	Badminton

78. Sol. B

19 <sup>th</sup>	Wednesday	Hockey
20 <sup>th</sup>	Thursday	X
21 <sup>st</sup>	Friday	Table-Tennis
22 <sup>nd</sup>	Saturday	Cricket
23 <sup>rd</sup>	Sunday	X
24 <sup>th</sup>	Monday	Kho-Kho
25 <sup>th</sup>	Tuesday	Football
26 <sup>th</sup>	Wednesday	Badminton

79. Sol. A

$$\begin{array}{cccccc}
 \text{P L A N T} & - & (16) & (12) & (1) & (14) & (20) \\
 & & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\
 & & 1+6 & 1+2 & 1 & 1+4 & 2+0 \\
 & & =7 & =3 & & =5 & =2
 \end{array}$$

80. C

Sol. Assumption I is implicit as we say something to anybody with the assumption that we will be listened to. Assumption II is implicit because without knowing about a particular institute how can we suggest anybody to get admission into it.

81. B

Sol. Assumption I is invalid because it has no connection with the given statement. The statement clearly says about meeting of governing body and not about any other meeting. Assumption II is valid as only those bodies that are functional hold meetings. So, if it is announced that next meeting will be held after one year, the announcers must be assuming that the institute will remain functional after one year.

82. C

Sol. 'Do not lean out' implies that this act can be dangerous. Hence, Assumption II is implicit. The purpose of a notice is getting response from targeted mass. Therefore, without assuming response from targeted mass, there will be no such notice. Clearly, Assumption II is also valid.

83. B

Sol. Assumption I is not implicit because of the word only. 'A' computer has the largest range. But this does not mean that it is the only brand to have a wide range. In case of Assumption II, it is a truth that if computers are being advertised, a demand for them must be existing. Hence, Assumption is implicit.

84. C

Sol. T, Z → Delhi → Swift D'zire  
Q, P, W → Hyderabad → Honda City  
S, R, V → Chennai → Ford Ikon

85. A

Sol. T, Z → Delhi → Swift D'zire  
Q, P, W → Hyderabad → Honda City  
S, R, V → Chennai → Ford Ikon

86. D

Sol. T, Z → Delhi → Swift D'zire  
Q, P, W → Hyderabad → Honda City  
S, R, V → Chennai → Ford Ikon

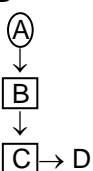
87. C

Sol. T, Z → Delhi → Swift D'zire  
Q, P, W → Hyderabad → Honda City  
S, R, V → Chennai → Ford Ikon

88. B

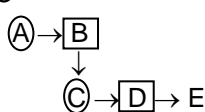
Sol. T, Z → Delhi → Swift D'zire  
Q, P, W → Hyderabad → Honda City  
S, R, V → Chennai → Ford Ikon

89. B



Sol. C → D

90. C



Sol. C → D → E

91. A

Sol. 
$$\text{Rem } \frac{923^{888} + 235^{222}}{4} = \text{Rem } \frac{3^{888} + 3^{222}}{4}$$

$$= \text{Rem } \frac{1+1}{4} = \frac{2}{4}.$$

Thus, the remainder is 2.

92. B

Sol.  $\text{Rem } \frac{3^{9415}}{80} = \text{Rem } \frac{3^{9412} \times 3^3}{80}$   
 $= \text{Rem } \frac{(3^4)^{2353} \times 3^3}{80}$  (since the cyclic period is 4)  
 $= \text{Rem } \frac{(81)^{2353} \times 3^3}{80}$   
 $= \text{Rem } \frac{1 \times 27}{80} = \text{Rem } \frac{27}{80}$

Thus, the remainder is 27.

93. A

Sol.  $\frac{2^{243}}{3^2} = \frac{(2^3)^{81}}{9} = \frac{8^{81}}{9} = \frac{8^{81}}{8+1}$

Hence, the remainder is 8 since the power of 8 is odd.

94. C

Sol. By observation

95. A

Sol. To exchange the position both hands to cover  $360^\circ$  together. In one minute, hour hand moves  $\frac{1}{2}^\circ$  and in one minute, minute hand moves  $6^\circ$ . Let the required time be  $t$  min, then

$$6t + \frac{1}{2}t = 360$$

$$t = \frac{720}{13} = 55 \frac{5}{13} \text{ min.}$$

96. B

Sol. Efficiency of Sonu =  $5\% = \left(\frac{100}{20}\right)$

Rest work = 75%

$$\text{Efficiency of Abhijeet} = \frac{75}{10} = 7.5\%$$

Combined efficiency Sonu & Abhijeet = 12.5%

$$\text{No. of days required by Sonu & Abhijeet to work together} = \frac{100}{12.5} = 8 \text{ days}$$

97. C

Sol. By observations

98. C

Sol. By observations

99. B

Sol. By observations

100. A

Sol. By observations