

FIITJEE Chennai Centre

TAMILNADU NTSE Stage 1 (2019-20)

MENTAL ABILITY TEST - MAT

Direction: (Question number 1 to 5)

In each question, the numbers are arranged in a sequence based on certain principle. Select the answer from the given four alternatives under each sequence.

- 2, 6, 15, 31, 56, _____?
(1) 87 (2) 67 (3) 93 (4) 92
- 5040, 840, 168, 42, 14, _____?
(1) 2 (2) 1 (3) 7 (4) 4
- 14, 24, 41, 65, 96, _____?
(1) 134 (2) 124 (3) 144 (4) 154
- 2, 3, 4, 4, 6, 12, 16, 12, 36, _____?, 24
(1) 64 (2) 256 (3) 48 (4) 28
- 5, 1, 11, 6, 17, 36, 23, _____?
(1) 216 (2) 108 (3) 54 (4) 59

Direction: (Question number 6 to 10)

Identify the wrong number/letters in the series.

- 25, 62, 122, 214, 341
(1) 122 (2) 62 (3) 214 (4) 341
- 1, 3, 7, 15, 31, 65, 127
(1) 7 (2) 31 (3) 15 (4) 65
- 1, 2, 2, 5, 7, 10, 14, 17, 23, 26
(1) 17 (2) 7 (3) 23 (4) 10
- AD, EG, IJ, MM, QP, UP
(1) EG (2) UP (3) QP (4) MM
- Z8, W5, T2, Q8, N5, K3
(1) K3 (2) T2 (3) Q8 (4) Z8
- 'Sea' is related with 'Waves'. Then 'Candle' is related to:
(1) rays (2) wax (3) stand (4) melt
- Which set of number is like the given set?
(80, 60, 45)
(1) (16, 12, 9) (2) (16, 12, 5) (3) (20, 15, 11) (4) (160, 120, 80)

Direction: (Question number 13 and 14)

First two terms are connected by some relationship. The same relationship is applicable for the next terms. Identify the suitable pair.

13. Square: Cube::

- (1) Rectangle : Cuboid (2) Triangle : Square
 (3) Quadrilateral : Cuboid (4) Cuboid : Rectangle

14. 82 : 9 ::

- (1) 5 : 26 (2) 6 : 37 (3) 35 : 6 (4) 26 : 5

15. If 'tee see pee' means 'prepare fruit juice', 'see kee tee' means 'Juice is nice' and 'lee reemee' means 'it is tall', which word means 'nice'?

- (1) ree (2) mee (3) kee (4) pee

16. In a certain code HONEY is written as HPPHC then FORGE is written as:

- (1) FPTJJ (2) FPTJI (3) FQTJI (4) FPSJI

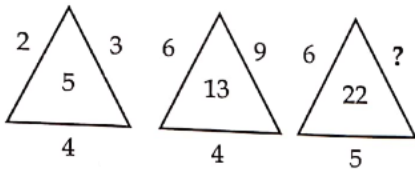
17. If A = 2, T = 40 and ACT = 48 then TAKE is:

- (1) 68 (2) 58 (3) 74 (4) 76

Direction: (Question number 18 to 21)

The diagram and the numbers/letters follow certain principle. Select the missing number / letter indicated.

18.



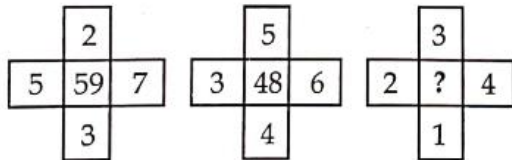
- (1) 8 (2) 12 (3) 11 (4) 33

19.

4	5	6	7
6	18	28	?
10	7	8	7

- (1) 38 (2) 40 (3) 41 (4) 42

20.



- (1) 22 (2) 26 (3) 28 (4) 30

21.



(1) P

(2) Q

(3) R

(4) T

Direction: (Question number 22 to 24)

First two terms are connected by some relationship. The same relationship is applicable for the next terms in which one is blank space. Identify the blank space.

22. Tree : Plant : Woman : ?

(1) boy

(2) child

(3) girl

(4) mother

23. Roof: floor : : ? Dark

(1) Tube light

(2) Bulb

(3) Bright

(4) Black

24. 7 : 50 : : ? : 65

(1) 9

(2) 64

(3) 8

(4) 11

25. Drama is related to Director in the same way as 'Magazine' is related to:

(1) Story

(2) Editor

(3) Reader

(4) Printer

26. The age of the father is twice the age of the elder son. Twelve years hence, the age of the father will be thrice that of the younger son. If the difference between the elder and younger son is 15, the age of the father is:

(1) 21

(2) 42

(3) 63

(4) 84

27. In an examination, a student got thrice as many sums wrong as he got right. If he attended 120 problems in all, the number of problems incorrectly done is:

(1) 90

(2) 30

(3) 40

(4) 60

28. The number of neither composite nor prime number in the set of Natural numbers is:

(1) 2

(2) 3

(3) 1

(4) 0

29. In a group of cows and hens, the number of legs are 16 more than thrice the number of heads. The possible number of cows and hens are respectively:

(1) 20, 4

(2) 4, 20

(3) 18, 6

(4) 6, 18

30. Which of the following statement is correct?

(1) The number of real numbers between 1 and 2 is same as 1 and 3

(2) The first positive real number is 0

(3) The number of natural numbers is finite

31. If South becomes north – east and North becomes south – west becomes:

(1) East

(2) West

(3) North

(4) South

32. On evening during sunset, a person is standing facing a pole. The shadow of the pole fell exactly to his left. The person faces the direction:

(1) South

(2) East

(3) West

(4) North

33. The number of two digit combinations having 9 as atleast one of the digits from the digit 0, 6, 9, 5, 4 is:

(1) 9

(2) 12

(3) 6

(4) 8

34. In a row of students, a boy is 12th from the left end and 18th from the right end. The total number of students is a/an:

(1) Prime number

(2) Composite number

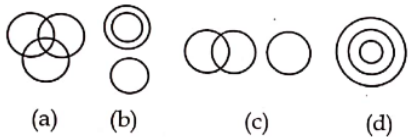
(3) Even number

(4) Can't be predicted

35. Six different bells in a tower toll at the intervals of 9 sec, 12 sec, 15 sec, 18 sec, 21 sec and 24 sec respectively. If all of them toll at 6 am, the next time they toll together is:
 (1) 7.42 am (2) 6.42 am (3) 8.00 am (4) 9.00 am
36. In the series 5 8 6 4 9 8 5 4 2 6 7 9 8 1 3 5 4, 2 the number of pairs of alternate numbers have difference 3, is:
 (1) 4 (2) 2 (3) 3 (4) 1
37. The arrangement of alphabetical order of the words:
 (a) Music (b) monk (c) minimum (d) maximum
 (1) (d), (c), (b), (a) (2) (a), (c), (d), (b) (3) (d), (c), (a), (b) (D) (d), (a), (c), (b)
38. Select the combination of number so that the letters arranged accordingly will form a meaningful word:
 R T F I U
 1 2 3 4 5
 (1) 3, 1, 5, 4, 2 (2) 1, 3, 5, 4, 2 (C) 3, 5, 1, 4, 2 (D) 3, 2, 5, 4, 1
39. The letter ninth of the left of seventeenth letter from the right end of the English alphabets is:
 (1) B (2) Z (3) Y (4) A
40. A group of letters is given which are numbered 1, 2, 3, 4, 5, 6. Choose the combination of numbers, so that letters arranged from a meaningful word.
 R O P N E S
 1 2 3 4 5 6
 (A) 3, 5, 1, 6, 2, 4 (B) 1, 3, 5, 6, 2, 4 (C) 3, 5, 6, 1, 2, 4 (D) 3, 5, 2, 1, 6, 4

Direction : (Question number 41 to 45)

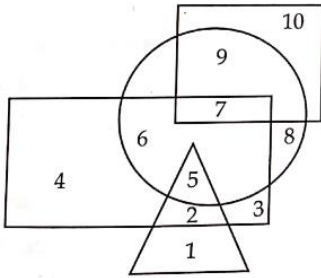
Select from the given diagrams (a), (b), (c) or (d) the one that illustrates the relationship among given classes.



41. Brides, Tigers, Peacocks:
 (1) (b) (2) (b) (3) (a) (4) (d)
42. Languages, Tamil, Telugu:
 (1) (a) (2) (b) (3) (d) (4) None of these
43. Foot ball fans, Cricket fans, Kabadi fans:
 (1) (b) (2) (c) (3) (a) (4) (d)
44. Human – beings, Indians, Tamilians:
 (1) (a) (2) (d) (3) (c) (4) (b)
45. Tamil Nadu, Punjab, Haryana:
 (1) (c) (2) (a) (3) (d) (4) (b)

Directions : (Question number 46 to 50)

In the following figure, Rectangle, Square, Circle and Triangle represent the regions of rice, gram, maize and wheat cultivation respectively. On the basis of the given figure answer the questions.



46. Which region cultivates all the four?
(1) 7 (2) 5 (3) 6 (4) None
47. Which region cultivates only rice?
(1) 6 (2) 4 (3) 5 (4) 3
48. Which region cultivates wheat and maize?
(1) 5 (2) 2 (3) 6 (4) 7
49. Which region cultivates all except rice?
(1) 1, 8, 9, 10 (2) 2, 8, 9, 10 (3) 1, 7, 8, 9 (4) 1, 4, 7, 9
50. Which region cultivates gram only?
(1) 9 (2) 7 (3) 8 (4) 10

Direction : (Question number 51 and 52)

Read the given statements and answer the question 51 and 52.

- (i) $A + B$ means 'A is the father of B'
(ii) $A - B$ means 'A is the wife of B'
(iii) $A \times B$ means 'A is the brother of B'
(iv) $A \div B$ means 'A is the daughter of B'

51. $A - B + C$ means:
(1) A is the mother of C (2) C is the mother of A (3) B is the mother of C (4) C is the mother of B
52. $A \times B \div C$:
(1) C is mother of B (2) B is mother of C (3) A is mother of C (4) A is mother of C

Direction: (Question number 53 to 55)

Study the following information and answer the questions (53 to 55) given below. There is a group of five persons A, B, C, D and E.

- (i) A, B and C are Tall
(ii) A, D and E are Educated
(iii) D, C and E are Urban
(iv) A, B and E are Hardworking

53. Which of the following persons is neither educated nor hardworking?
(1) A (2) C (3) D (4) E
54. Which of the following persons is neither urban nor educated but is hardworking?
(1) A (2) C (3) B (4) D
55. Which of the following persons is either tall or hardworking?
(1) A, B, C, E (2) All (3) A, B, D, E (4) A, B, C, D

56. How many numbers from 1 to 100 are there each of which is exactly divisible by 6 but also contain 6 as a digit in it?
(1) 6 (2) 4 (3) 5 (4) 7

Direction: (Read the passage and answer the questions 57 and 58)

Five boys P, Q, R, S and T took part in a race. R finished before T but behind S. P finished before Q but behind T.

57. Who won the race?
(1) Q (2) P (3) R (4) S
58. Who got the last place?
(1) Q (2) S (3) P (4) T

Direction (Question number 59 and 60)

Arrange the given words in a meaningful sequence and choose the most appropriate sequence from the given alternatives.

59. (a) appendix (b) contents (c) chapters (d) introduction
(1) (a), (c), (b), (d) (2) (a), (b), (c), (d) (3) (d), (c), (b), (a) (4) (c), (d), (a), (b)
60. (a) protect (b) relief (c) flood (d) rain
(1) (c), (a), (a), (b) (2) (c), (a), (d), (b) (3) (a), (b), (c), (d) (4) (d), (c), (a), (b)

Direction :

If '-' means 'x', 'x' means '+', '+' means '÷' and '÷' means '-' then answer the question 61 and 62

61. $8 + 4 - 3 \times 2 \div 1 =$
(1) 8 (2) 7 (3) 22 (4) 21
62. $12 \times 8 + 2 \div 1 =$
(1) 7 (2) 16 (3) 18 (4) 8
63. If '-' means '+', '+' means 'x', 'x' means '-' then which of the following is correct?
(1) $36 - 12 \times 6 \div 3 + 3 = 60$ (2) $52 \div 4 + 5 \times 8 - 2 = 36$
(3) $42 - 8 \times 3 \div 4 + 3 = 38$ (4) $49 - 10 + 8 \div 4 + 4 = 40$

64. If $8 * 1 = 81$, $9 * 1 = 100$ then $7 * 1 =$ is
(1) 50 (2) 64 (3) 51 (4) 48
65. If $37 + 42 = 16$, $43 + 54 = 16$, $25 + 34 = 14$ then $65 + 35 =$
(1) 100 (2) 91 (3) 18 (4) 19

Direction: (Question number 66 and 67) choose the best alternative as the answer.

66. If $A + B > A + C$ and $A + B > A - C$ then
(1) $B > 0$ (2) $A > 0$ (3) $C > 0$ (D) None of these
67. Danger always involves:
(1) fear (2) help (3) attack (4) enemy
68. When the time is 4.20 the angle between the hands of the clock is:
(1) 0° (2) 15° (3) 20° (4) 10°

Direction: (Question number 69 to 73)

Read the following information carefully and answer the questions given below:

- (i) There is a group of 5 persons P, Q, R, S and T
(ii) Among them there is an Agriculturist, a Teacher, a Lawyer, a Doctor and an Editor by profession.
(iii) Three of them P, R and the Editor prefer meals to tiffin and two of them Q and the Lawyer prefer tiffin to meals.
(iv) The doctor, S and P are friends to one another but two of these prefer tiffin to meals.

(v) Agriculture is R' Brother.

69. Who is Doctor?

- (1) Q (2) R (3) S (4) T

70. Who is Agriculturist?

- (1) T (2) S (3) R (4) P

71. Which of the following groups prefer tiffin?

- (1) P, R, T (2) P, R (3) Q, S (4) P, S

72. Who is Teacher?

- (1) Q (2) R (3) P (4) T

73. Who is the Editor?

- (1) T (2) P (3) Q (4) S

Direction: (Question number 74 and 75)

In each of the questions given below, two statements I and II are followed by the conclusions numbered 1 and 2. Read the conclusion and give the answer.

74. Statement (I) : All women are mothers

(II) : All mothers are sisters

Conclusion (1): All women are sisters

(2) : Some women are not sisters

- (1) Only conclusion (1) follows (2) Only conclusion (2) follows
(3) Either conclusion (1) or (2) follow (4) Neither conclusion (1) nor (2) follows

75. Statement (I): Some books are Tables

(II): Some Tables are pencils

Conclusion (1): All books are pencils

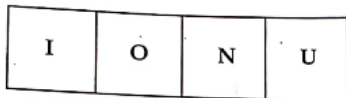
(2): Some pencils are books

- (1) Only conclusion (1) follows (2) Only conclusion (2) follows
(3) Either conclusion (1) or (2) follow (4) Neither conclusion (1) nor (2) follows

Direction: (Question number 76 to 80)

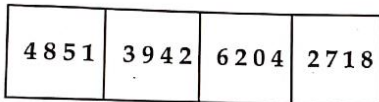
Out of the four figures (1), (2), (3), (4) given in each problem, three are similar in a certain way. One figure is not like other three. Select that figure.

76.



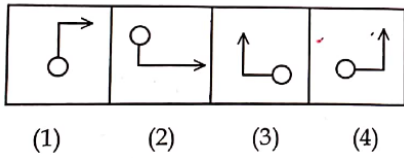
- (1) (2) (3) (4)

77.

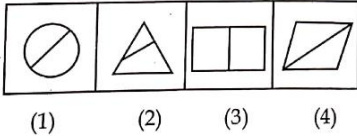


- (1) (2) (3) (4)

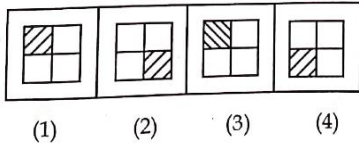
78.



79.



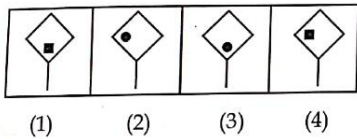
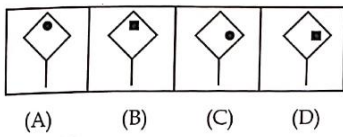
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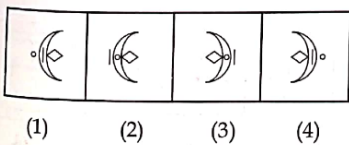
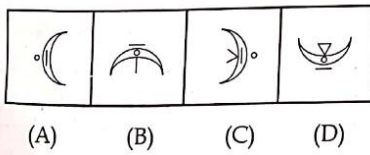
Direction: (Question number 81 to 85)

In each of the following questions find the answer figure (1), (2), (3) or (4) which would continue the given series of four figures (A), (B), (C) and (D).

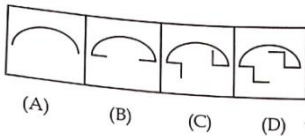
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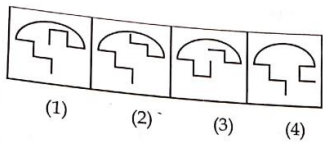


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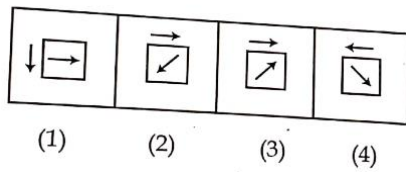
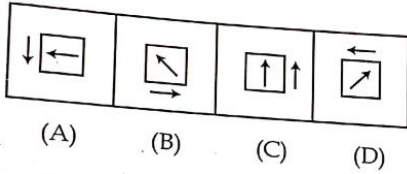


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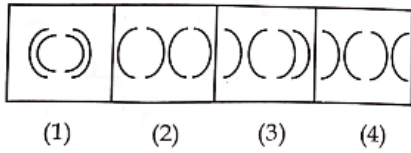
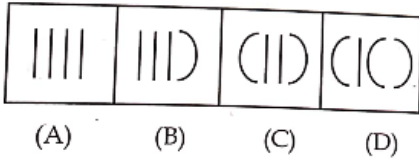




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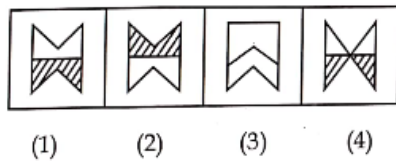
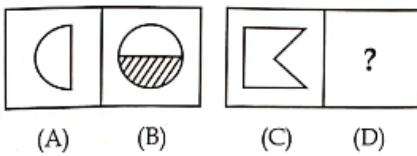
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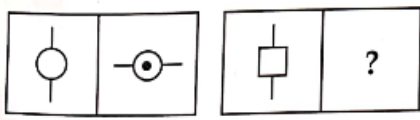
Direction : (Question number 86 to 88)

Figures A and B are related in some manner. Find the same relationship between figures C and D by choosing the alternatives (1), (2), (3) or (4) to replace the figure in D.

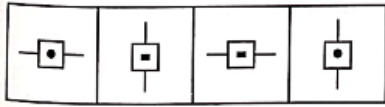
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87.

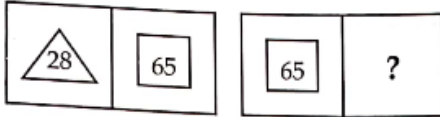


(A) (B) (C) (D)

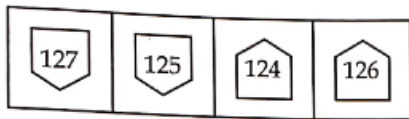


(1) (2) (3) (4)

88.



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

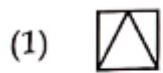
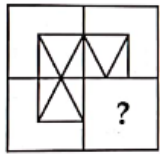


(1) (2) (3) (4)

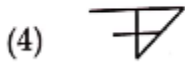
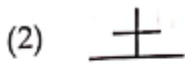
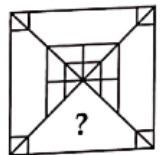
Direction: (Question number 89 and 90)

Identify the missing portion to complete the given figure from the alternatives (1), (2), (3) and (4).

89.



90.



91. Find the number of quadrilaterals in the figure:

- (1) 42018 (2) 42018
 (3) 42018 (4) 42018

97. The mirror image of P R O P E R is:

- (1) R E P O R P
 (2) R E P O R P
 (3) P R O R E R
 (4) R E P O R P

98. The mirror image of the given diagram:



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

99. In a hockey tournament each of 5 teams will play other team exactly once. The number of matches will be played is:

- (1) 5 (2) 4 (3) 20 (4) 10

100. Which letter is midway between 22nd letter from the left and 21st letter from the right in English alphabets?

- (1) N (2) M (3) L (4) O
