



**NATIONAL TALENT SEARCH EXAMINATION-2019**  
**RAJASTHAN (NTSE STAGE-I)**  
**MENTAL ABILITY TEST (MAT)**

Time : 2 Hrs.

Max. Marks : 100

**GENERAL INSTRUCTIONS :**

1. There are **100** questions in this test. All are compulsory.
2. Every correct answer will be awarded **1** mark.

**Questions (1 - 8)**

**Instruction :** In each of the Question Nos. **1** to **8** a letter series is given with one term missing shown by question mark ( ? ). This term is one of four alternatives given under it. Find the correct alternative.

1. A, D, I, ?, Y.  
(1) R (2) P (3) N (4) T
2. YX, UT, QP, ML, ?.  
(1) HI (2) JI (3) HG (4) IH
3. ACF, GIL, ?, SUX.  
(1) NPS (2) MOR (3) MNQ (4) MOQ
4. YB, WD, UF, ?, QJ.  
(1) SH (2) TI (3) RH (4) HS
5. ABC, EFG, IJK, ?, UVW.  
(1) MNO (2) PQR (3) OPQ (4) QRS
6. ABCD, BDFH, CFIL, ?, EJOT.  
(1) DGKO (2) DHMQ (3) DHLP (4) DIKP
7. D, H, L, P, T, ?.  
(1) W (2) X (3) Y (4) U
8. ZYAB, VUEF, RQIJ, ?, JIQR.  
(1) NMNM (2) MNMN (3) MNNM (4) NMMN

**Questions (9 – 16)**

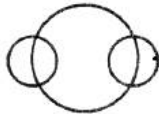

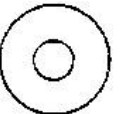
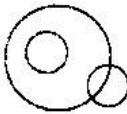
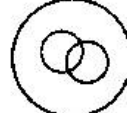
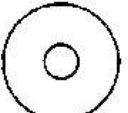


**Instruction :** In each of the Question Nos. **9** to **16** a number series is given with one 'term missing shown by question mark ( ? ). This term is one of the four alternatives given under it. Find the correct alternative.

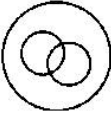
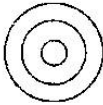
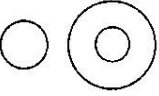
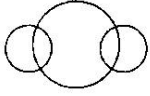
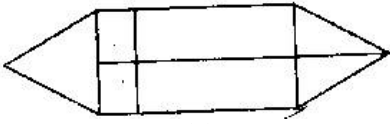
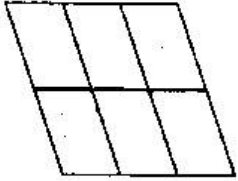
9. 1, 2, 6, 15, ?, 56.  
(1) 31 (2) 40 (3) 37 (4) 45
10. 100, 50,  $33\frac{1}{3}$ , 25, 20, ?.  
(1) 15 (2)  $16\frac{1}{3}$  (3)  $17\frac{2}{3}$  (4)  $16\frac{2}{3}$
11. 17, 16, 8, ?, - 83.  
(1) - 1 (2) - 8 (3) - 19 (4) - 26

12. 6, 24, 60, 120,  $\underline{?}$ .  
(1) 180 (2) 195 (3) 210 (4) 225
13. 49, 64, 56, 57, 63,  $\underline{?}$ , 70, 43.  
(1) 64 (2) 50 (3) 52 (4) 67
14. 4, 13, 31, 67,  $\underline{?}$ , 283.  
(1) 139 (2) 103 (3) 121 (4) 169
15. 1, 1, 2, 3, 5, 8,  $\underline{?}$ , 21.  
(1) 11 (2) 12 (3) 13 (4) 14
16. 3, 24, 81,  $\underline{?}$ , 375, 648.  
(1) 128 (2) 256 (3) 169 (4) 192

**Questions (17 - 19)**

**Instruction :** Question Nos. 17 to 19 have two statements and two conclusions **I** and **II**. You have to assume the given statements as true even if it seems to vary to commonly known facts. Read all the conclusions carefully and decide which of the given conclusions logically follow(s) from the two given statements even disregarding commonly known facts.

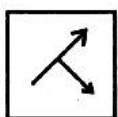
17. Statements: (i) : All mangoes are trees.  
(ii) : All oranges are trees.  
Conclusions: (I) : Some mangoes are oranges.  
(II) : All oranges are mangoes.  
(1) Only conclusion I follows. (2) Only conclusion II follows.  
(3) Both conclusions I and II follow. (4) Neither conclusion I nor II follows.
18. Statements : (i) Earth is smaller than Moon.  
(ii) Moon is bigger than Sun.  
Conclusions : (I) Sun is bigger than Earth.  
(II) Earth and Sun are equal.  
(1) Only conclusion I follows. (2) Only conclusion II follows.  
(3) Both conclusions I and II follow. (4) Neither conclusion I nor II follows.
19. Statements : (i) Some houses are vehicles.  
(ii) Some vehicles are schools.  
Conclusions : (I) Some houses are schools.  
(II) Some schools are houses.  
(1) Only conclusion I follows. (2) Only conclusion II follows.  
(3) Both conclusions I and II follow. (3) Neither conclusion I nor II follows.
20. Which of the following Venn diagrams correctly represents France, Europe and Canada?  
(1)  (2)  (3)  (4) 
21. Which of the following Venn diagrams correctly represents 'House, Kitchen and Bathroom'?  
(1)  (2)  (3)  (4) 

22. Which of the following Venn diagrams correctly represents Uttar Pradesh, Agra and Taj Mahal?
- (1)  (2)  (3)  (4) 
23. If '<' means '-', '>' means '+', '=' means 'x' and '@' means '÷', then what will be the value of  $7 = 4 < 8 = 3 > 39 @ 3$  ?
- (1) 10 (2) 17 (3) 39 (4) 52
24. In a coded language, 'ACE' is written as '1925' and 'BIG' is written as '48149', then in the same language, 'DOG' will be written as
- (1) 41549 (2) 1622549 (3) 162259 (4) 42249
25. In a coded language, 'SHOULDER' is written as 'TJSNMAGZ' and 'BOXING' is written as 'RSYCPH', then in the same language, 'HORN' will be written as
- (1) JSZP (2) JSNS (3) JNZS (4) JZSP
26. In a coded language 'CALLED' is written as 'DELLAC' and 'TIGER' is written as 'REGIT', then in the same language, 'NORTH' will be written as
- (1) PQSUK (2) PTTVL (3) HTORN (4) HTRON
27. In the given question, a statement is followed by two arguments I and II. You have to decide which of the following arguments is 'strong' or 'weak'.  
Statement : High chimneys should be installed in industries.  
Arguments. : (I) Yes, it reduces pollution at ground level.  
(II) No, it increases pollution in upper atmosphere.
- (1) Only Argument I is strong. (2) Only Argument II is strong.  
(3) Both Arguments I and II are strong. (4) Both Arguments I and II are weak.
28. Determine the number of rectangles in the following figure.
- 
- (1) 7 (2) 8 (3) 9 (4) 10
29. Determine the number of parallelograms in the following figure :
- 
- (1) 14 (2) 17 (3) 18 (4) 19

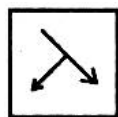
**Questions (30 - 33)**

**Instruction :** In Questions Nos. 30 to 33, find the correct mirror image of the given figure, when mirror is placed on right side of the figure.

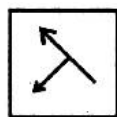
30. **Question Image**



**Answer Image**



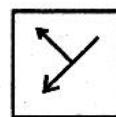
(1)



(2)

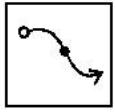


(3)

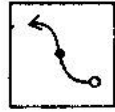


(4)

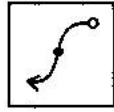
31. Question Image



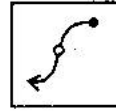
Answer Image



(1)



(2)



(3)



(4)

32. QUALITY

(1) QUNVILJA

(2) YTILAUQ

(3) YTIJAUQ

(4) YTIJAUQ

33. 247596

(1) 695742

(2) 992742

(3) 247299

(4) 992742

Questions (34 - 37)

Instruction : In Question Nos. 34 to 37, find the correct water-image of the given figure.

34. FAMILY

(1) FIVMILA

(2) EAVMILA

(3) EAVMILA

(4) FIVMILA

35. NhRqSy

(1) NHRQSY

(2) NHRQSY

(3) NHRQSY

(4) NHRQSY

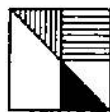
36. Question figure



Answer figures



(1)



(2)



(3)

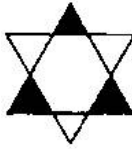


(4)

37. Question figure



Answer figures



(1)



(2)



(3)



(4)

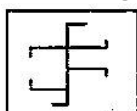
Questions (38 - 41)

Instruction : In the following Question Nos. 38 to 41, there is a question figure, which is embedded in one of the answer figures. Trace out that correct figure.

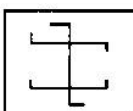
38. Question figure



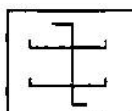
Answer figures



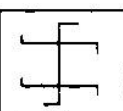
(1)



(2)

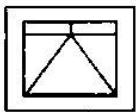


(3)

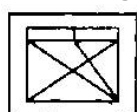


(4)

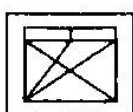
39. Question figure



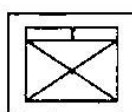
Answer figures



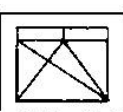
(1)



(2)



(3)



(4)

40. **Question figure** **Answer figures**

41. **Question figure** **Answer figures**

42. Which of the answer figures will complete the given matrix figure ?

43. Which of the answer figures will complete the given matrix figure?

**Questions (44 - 47)**

**Instruction :** A square transparent sheet with a pattern is folded along the dotted line. Which of the following answer figures is formed after folding the transparent sheet?

44. **Question figure** **Answer figures**

45. **Question figure** **Answer figures**

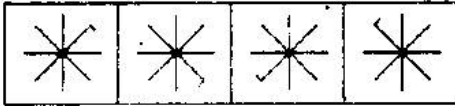
46. **Transparent sheet** **Answer figures**

47. **Transparent sheet** **Answer figures**

**Questions (48 - 55)**

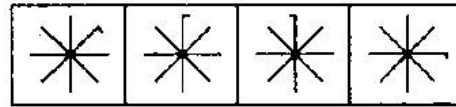
**Instruction :** In Question Nos. 48 to 55, there are two sets of figures. One set contains problem figures while the other has answer figures. There is a sequence according to which the problem figures are arranged. You have to select an answer figure which can be added in sequence with the problem figures. Choose the correct answer figure.

**48. Problem figures**



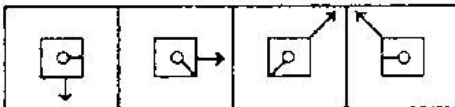
(A) (B) (C) (D)

**Answer figures**



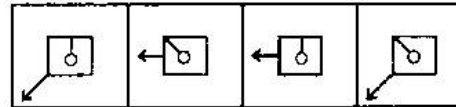
(1) (2) (3) (4)

**49. Problem figures**



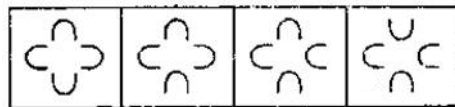
(A) (B) (C) (D)

**Answer figures**



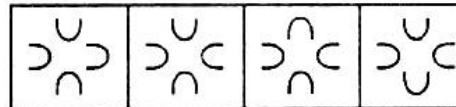
(1) (2) (3) (4)

**50. Problem figures**



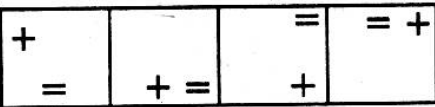
(A) (B) (C) (D)

**Answer figures**



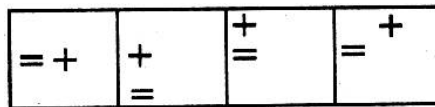
(1) (2) (3) (4)

**51. Problem figures**



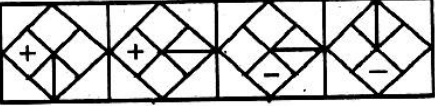
(A) (B) (C) (D)

**Answer figures**



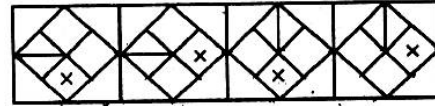
(1) (2) (3) (4)

**52. Problem figures**



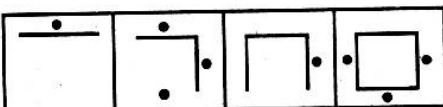
(A) (B) (C) (D)

**Answer figures**



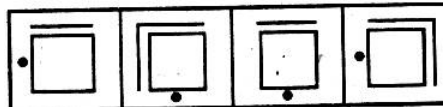
(1) (2) (3) (4)

**53. Problem figures**



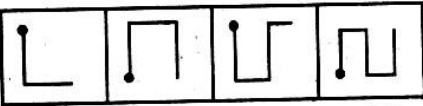
(A) (B) (C) (D)

**Answer figures**



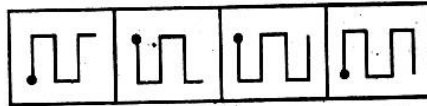
(1) (2) (3) (4)

**54. Problem figures**



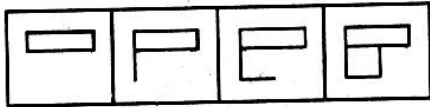
(A) (B) (C) (D)

**Answer figures**



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

**55. Problem figures**



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

**Answer figures**



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

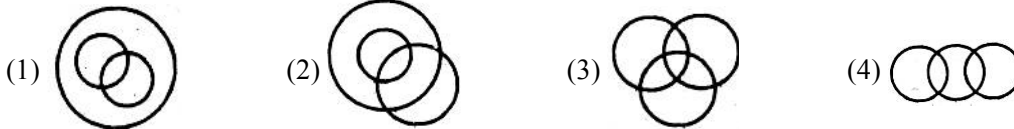
56. A family has a man, his wife, their four sons and their wives. Each son has 3 sons and 2 daughter. How many male members are there in the whole family?  
(1) 5 (2) 8 (3) 16 (4) 17

**Questions (57 – 60)**

**Read the information given below carefully :**

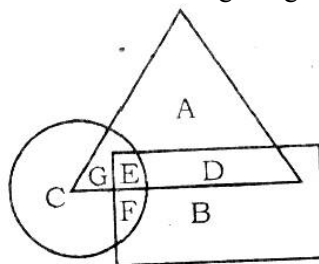
A is the son of B. B's sister C has a son D and a daughter E. F is maternal uncle of D.  
Answer Question Nos. 57 to 60 based on this information.

57. How is A related to D?  
(1) Cousin (2) Nephew (3) Brother (4) Uncle
58. How is E related to F?  
(1) Sister (2) Daughter (3) Niece (4) Wife
59. How many nephews does F have?  
(1) 0 (2) 1 (3) 2 (4) 3
60. How is B related to F?  
(1) Brother / Sister (2) Husband (3) Father (4) Cousin
61. A, B, C and D are playing carrom. C, A and D, B are partners. D is to the right of C. C is facing west. Then, B is facing which direction?  
(1) North (2) South (3) East (4) West
62. If 'South-east' is called 'East', 'North-west' is called 'West', 'South-west' is called 'South', then in the same way, 'North' will be called as  
(1) East (2) North-east (3) North-west (4) West
63. Which of the following Venn diagrams correctly represents Males, Fathers and doctors?



**Questions (64 – 67)**

**Instruction :** Answer Question Nos. 64 to 67 based on the diagram given below :



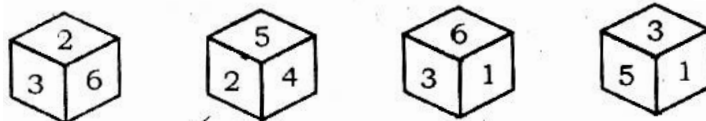
In above figure, triangle shows rural women, rectangle shows unemployed women and circle shows educated women.

64. Educated employed and rural women are represented by  
(1) D (2) E (3) F (4) G
65. What does D represent?  
(1) Educated rural women (2) Uneducated, unemployed and rural women  
(3) Educated unemployed women (4) Educated employed women

66. Educated, unemployed and rural women are represented by  
(1) A (2) B (3) D (4) E
67. Educated unemployed women are represented by  
(1) B, C (2) D, E (3) E, F (4) G, E
68. How many numbers from 1 to 100 are there which are completely divisible by 4 and also has 4 as digit?  
(1) 7 (2) 10 (3) 20 (4) 25
69. How many odd numbers are there in the sequence each of which is immediately followed by an odd number?  
5 1 4 7 3 9 8 5 7 2 6 3 1 5 8 6 3 8 5 2 2 4 6 4 9 6  
(1) 2 (2) 5 (3) 6 (4) 7
70. An integer is greater than 3 but less than 8. Also it is greater than 6 but less than 10. This number is equal to  
(1) 4 (2) 6 (3) 7 (4) 8
71. A has 18<sup>th</sup> rank in a class of 49 students. What is his rank from the last?  
(1) 18 (2) 19 (3) 31 (4) 32
72. If it was Saturday on 17<sup>th</sup> December, 2002, then what was the day on 22<sup>nd</sup> December, 2004?  
(1) Monday (2) Sunday (3) Friday (4) Tuesday
73. If number of days are not considered, which two months in a year have same calendar?  
(1) June, October (2) April, November (3) April, July (4) October, December
74. If 25<sup>th</sup> August in a year is Thursday, then number of Mondays in that month is  
(1) 3 (2) 4 (3) 5 (4) 6
75. If (+) stands for ( $\times$ ), (-) stands for ( $\div$ ), ( $\times$ ) stands for (-) and ( $\div$ ) stands for (+), then value of  $[26 + 72 - 4 \times 5 \div 2]$  is  
(1) 108 (2) 465 (3) 471 (4) 488
76. If  $A + B > C + D$  and  $D + A < B + C$ , then  
(1)  $D > B$  (2)  $C > D$  (3)  $A > D$  (4)  $B > D$
77. Arrange the following in a meaningful sequence :  
A = Birth, B = Death, C = Funeral, D = Marriage, E = Education.  
(1) AEDBC (2) ADECB (3) AEBDC (4) ADEBC
78. Arrange the following in a meaningful sequence :  
A = Study, B = Service, C = Examination, D = Earning, E = Result.  
(1) EACDB (2) ABECD (3) ACEBD (4) AECBD
79. A solid cube of white material is painted black on all its surfaces. If it is cut into 125 smaller cubes of same size, then how many cubes will have two sides painted black?  
(1) 32 (2) 36 (3) 42 (4) 40
80. A cube painted red on all faces is cut into 27 small cubes of equal size. How many cubes are not painted on any face?  
(1) 1 (2) 3 (3) 4 (4) 6

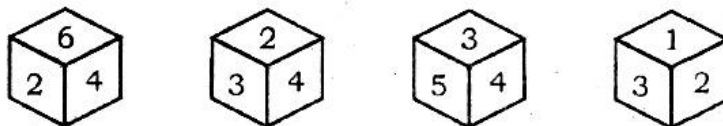


81. The four different positions of a die are given below. Which number is on the face opposite to 3?



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

82. The four different positions of the die are given below. Which number is on the face opposite to 2?

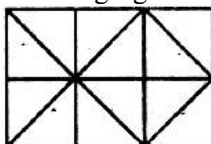


- (1) 3 (2) 4 (3) 5 (4) 6

83. How many two-digit numbers can be formed from numbers 2, 5, 6, 8, 7, 1 such that each number has digit 8 always?

- (1) 9 (2) 10 (3) 11 (4) 12

84. Determine the number of squares in the following figure:



- (1) 7 (2) 8 (3) 9 (4) 10

85. If ‘+’ stands for ‘×’, ‘-’ stands for ‘÷’, ‘×’ stands for ‘-’ and ‘÷’ stands for ‘+’, then value of

$$\frac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1}$$

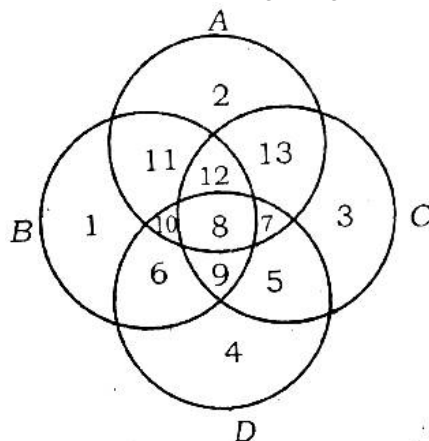
- (1) 8 (2) 12 (3) 0 (4) 4

86. In a row of students, A is sixth from the left and B is tenth from the right. If there are 8 students between A and B, then total number of students in the row is

- (1) 23 (2) 24 (3) 25 (4) 26

**Questions (87 – 90)**

**Instruction:** Answer Question Nos. 87 to 90 based on the diagram given below:

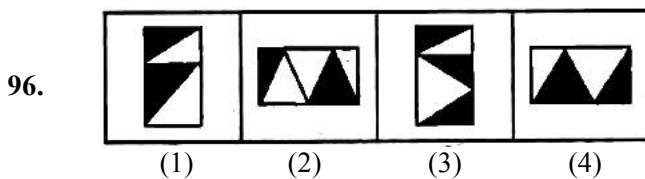
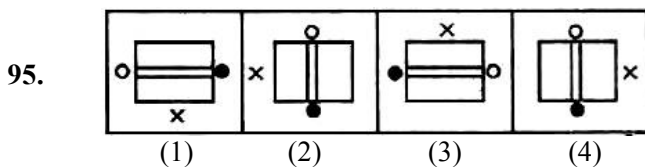
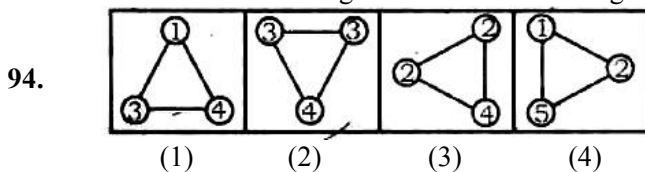


Circle A represents men having TV, circle B represents men having scooter, circle C represents men having laptop and circle D represents men having car.

87. Men having scooter, TV, laptop but not car are represented by which number?  
(1) 4 (2) 7 (3) 11 (4) 12
88. Men having only car (no other item) are represented by which number?  
(1) 4 (2) 5 (3) 6 (4) 7
89. Men having neither scooter nor car are represented by which number?  
(1) 13 only (2) 2 only (3) 3 only (4) 2, 13, 3
90. Men having car and laptop only are represented by which number?  
(1) 9 (2) 8 (3) 7 (4) 5
91. As 'circle' is related to its 'circumference', in the same way, 'square' is related to which of the following?  
(1) Volume (2) Area (3) Diagonal (4) Perimeter
92. As 'walking' is related to 'running', in the same way, 'smiling' is related to which of the following?  
(1) feeling (2) weeping (3) laughing (4) watching
93. As 'college' is related to its 'student' in the same way, 'hospital' is related to which of the following?  
(1) Doctor (2) Patient (3) Nurse (4) Treatment

**Questions (94 – 96)**

**Instruction:** In Question Nos. 94 to 96, there are four figures given in each. One of these figures does not correlate with the rest of the figures. Select that odd figure.



**Questions (97- 100)**

**Instruction :** In Question Nos. 97 and 100, three alternatives are alike in a certain way but the rest one is different. Select the odd one.

97. (1) Radish (2) Carrot (3) Pea (4) Turnip
98. (1) 105 (2) 91 (3) 65 (4) 117
99. (1) OVO (2) CUU (3) TTA (4) AFA
100. (1) Football (2) Carrom (3) Hockey (4) Cricket