



**NATIONAL TALENT SEARCH EXAMINATION
(NTSE-2017) STAGE -1
ANDHRA PRADESH STATE : MAT**

Date: 06/11/2016

Max. Marks: 50

SOLUTIONS

Time allowed: 45 mins

Direction (1 to 5) : In the number series given below, one number is missing. Each series is followed by five alternative answers (1), (2), (3), (4) and (5). One of them is the right answer. Identify and indicate it as per the "Instructions".

1. 0, 10, 34, 78,

- (1) 135 (2) 148 (3) 156 (4) 102
(5) 124

Ans. (2)

Sol. By double difference.

2. 7, 31, 211,

- (1) 2311 (2) 2211 (3) 2561 (4) 2781
(5) 2111

Ans. (2)

Sol. $7, 31, 211, 2211$
 $\begin{array}{cccc} | & | & | & | \\ 2^3 - 1 & 3^3 + 2 & 6^3 - 5 & 13^3 + 14 \end{array}$

3. 24, 60, 96, 132,

- (1) 126 (2) 152 (3) 144 (4) 168
(5) 135

Ans. (4)

Sol. Pattern - $4 \times 6, 10 \times 6, 16 \times 6, 22 \times 6, 28 \times 6$
 $\begin{array}{cccc} \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} & \underbrace{\hspace{1cm}} \\ +6 & +6 & +6 & +6 \end{array}$

4. 7, 6, 10, 27, 104,

- (1) 520 (2) 420 (3) 515 (4) 525
(5) 456

Ans. (3)

Sol. Pattern - $\times n - n$

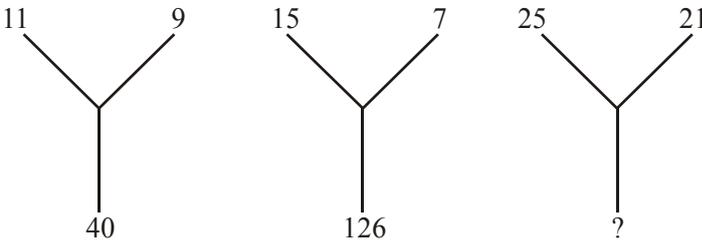
5. 1, 5, 15, 34, 65,

- (1) 111 (2) 125 (3) 117 (4) 126
(5) 105

Ans. (1)

Sol. By double difference.

Direction (6 to 10) : In each of the questions, the numbers are arranged in a certain order. In one place, a question mark is given. Find out which one of the answers will replace the question mark.

6. 

(1) 184 (2) 210 (3) 241 (4) 425
 (5) 506

Ans. (1)

Sol. $(11 + 9) \times (11 - 9) = 40$
 $(25 + 21) \times (25 - 21) = 184$

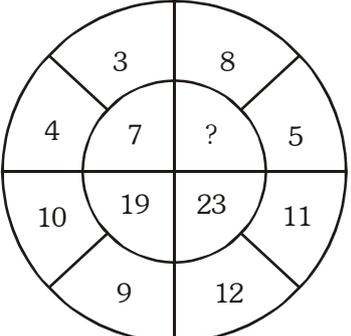
7.

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

(1) 16 (2) 8 (3) 4 (4) 5
 (5) 10

Ans. (1, 3)

Sol. $9 \times 5 = 5 \times 9$ {Multiply 1 & 2 = 3 & 4}
 $16 \times 4 = 8 \times 8$
 or
 $9 + 5 = 9 + 5$ {Add 1 & 3 = 2 & 4}
 $16 + 8 = 16 + 8$

8. 

(1) 35 (2) 39 (3) 34 (4) 45
 (5) 11

Ans. (2)

Sol. $4^3 - 3^3 = 7$
 $10^3 - 9^3 = 19$
 $12^3 - 11^3 = 23$
 $8^3 - 5^3 = 39$

15. If STRAY is coded as TUSBZ, then how will MOURN be coded ?

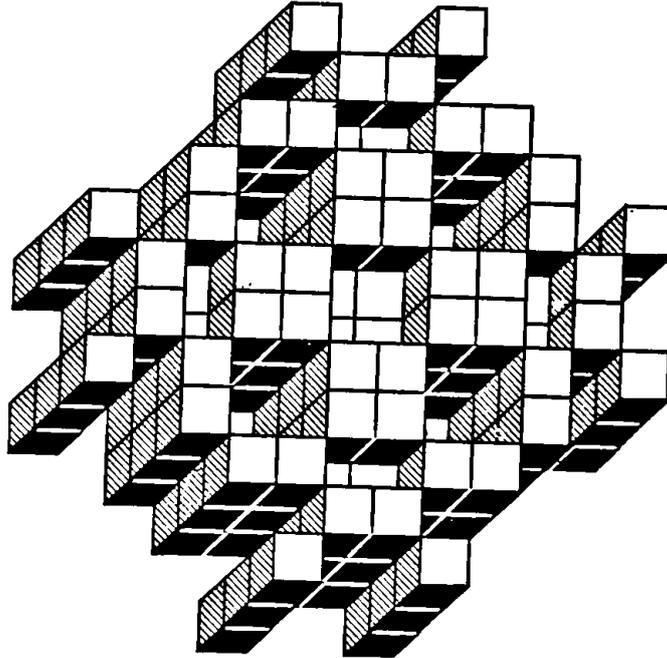
- (1) LPVSO (2) NPVSO (3) NVPSO (4) NPSVO
 (5) NSPOV

Ans. (2)

Sol. Pattern - +1, +1, +1, +1, +1

Direction (16 to 20) : Read the following information carefully and answer the questions given below.

16. Count the number of cubes in the given figure.

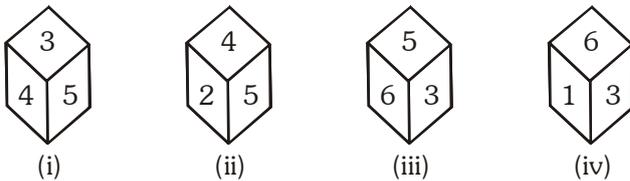


- (1) 167 (2) 168 (3) 169 (4) 170
 (5) 171

Ans. (2)

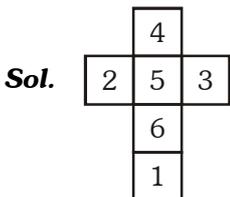
Sol. By Counting

17. The four different positions of a dice are given in the figure. Find the number on the face opposite the face showing 6?

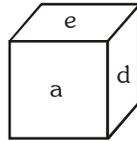


- (1) 1 (2) 2 (3) 4 (4) 5
 (5) 3

Ans. (3)



18. In a dice a, b, c and d are written on the adjacent faces, in a clockwise order e and f at the top and bottom. When c is at the top, what will be at the bottom ?



- (1) a
- (2) b
- (3) c
- (4) d
- (5) e

Ans. (1)

Sol. By observation

19. A cube has six different symbols drawn over its six faces. The symbols are dot, circle, triangle, square, cross and arrow. Three different positions of the cube are shown in figures X, Y and Z. Which symbol occurs at the bottom of figure Y ?



(X)



(Y)

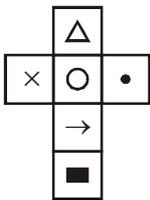


(Z)

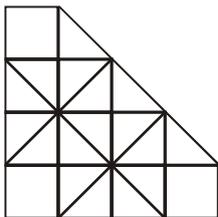
- (1) Arrow
- (2) Triangle
- (3) Circle
- (4) Dot
- (5) Square

Ans. (3)

Sol.



20. How many squares are there in the given figure ?



- (1) 15
- (2) 18
- (3) 12
- (4) 16
- (5) 20

Ans. NA

Sol. Answer is 14 not given in option

Direction (21 to 25) : In each of the following questions a letter series is given, in which some letters are missing. The missing letters are given in the proper sequence as one of the alternative. Find the correct alternative.

21. _ _ aba _ _ ba _ ab

- (1) abbba
- (2) abbab
- (3) babb
- (4) bbaba
- (5) aaabb

Ans. (2)

Sol. a a b b a b / a a b b a b / a a

22. ab ___ b _ bbaa _

- (1) abaab (2) abbab (3) baaab (4) babba
(5) ababa

Ans. (3)

Sol. a b b a a b / a b b a a b

23. _ baa _ aab _ a _ a

- (1) aabb (2) aaba (3) abab (4) baab
(5) aaab

Ans. (3)

Sol. a b a / a b a / a b a / a b a

24. __ babbba _ a __

- (1) ababb (2) baaab (3) bbaba (4) babbb
(5) abbbb

Ans. (5)

Sol. a b a b b b / a b a b b b

25. _ op _ mo _ n _ _ pnmop _

- (1) mnpmon (2) mpnmop (3) mnompn (4) mnpomn
(5) mnmnpo

Ans. (1)

Sol. m o p n / m o p n / m o p n / m o p n

Direction (26 to 30) : Choose odd number questions. Certain numbers are given, out of which all except one are alike in some manner while one is different and this number is to be chosen as the answer.

26. 2468, 2648, 4826, 6482

- (1) 2468 (2) 2648 (3) 4826 (4) 6482
(5) 2864

Ans. (4)

Sol. Sum of 1st & 4th = Sum of 2nd & 3rd

27. 2, 16, 56, 128

- (1) 2 (2) 16 (3) 56 (4) 128
(5) 32

Ans. (3)

Sol. All numbers are 2's power

28. 9611, 7324, 2690, 1754

- (1) 9611 (2) 7324 (3) 2690 (4) 1754
(5) 1547

Ans. (2)

Sol. Digit sum is 17

29. 7, 5, 31, 57

- (1) 7 (2) 5 (3) 31 (4) 57
(5) 65

Ans. (4)

Sol. All are prime number

30. 232, 431, 612, 813

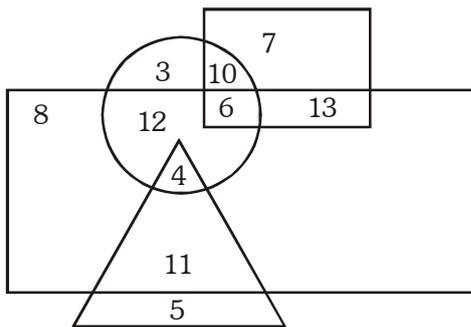
- (1) 232 (2) 431 (3) 612 (4) 813
(5) 831

Ans. (4)

Sol. Digit multiplication is 12

Direction (31 to 35) : These questions are based on the diagram given below.

- A) Rectangle represents males.
B) Triangle represents educated.
C) Circle represents urban resident.
D) Square represents civil servant.



31. Who among the following is an educated male who is not an urban resident ?

- (1) 4 (2) 5 (3) 8 (4) 11
(5) 6

Ans. (4)

Sol. By observation

32. Who among the following is neither a civil servant nor educated but is urban and not a male ?

- (1) 2 (2) 3 (3) 6 (4) 10
(5) 7

Ans. (2)

Sol. By observation

33. Who among the following is a female, urban resident and also a civil servant ?

- (1) 6 (2) 7 (3) 10 (4) 13
(5) 8

Ans. (3)

Sol. By observation

34. Who among the following is an educated male who hails from urban area ?

- (1) 4 (2) 2 (3) 11 (4) 5
 (5) 7

Ans. (1)

Sol. By observation

35. Who among the following is uneducated and also an urban male ?

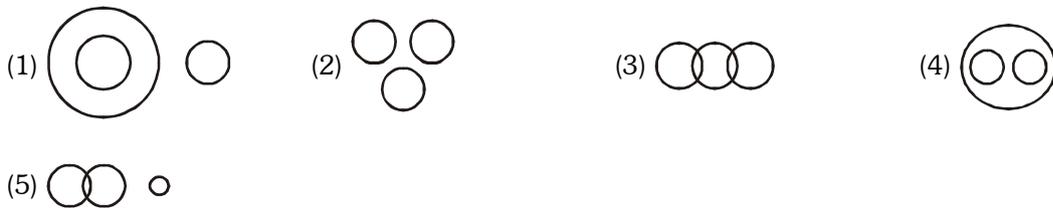
- (1) 2 (2) 3 (3) 11 (4) 12
 (5) 7

Ans. (4)

Sol. By observation

Direction (36 to 40) : Answer the following as per the "Instructions".

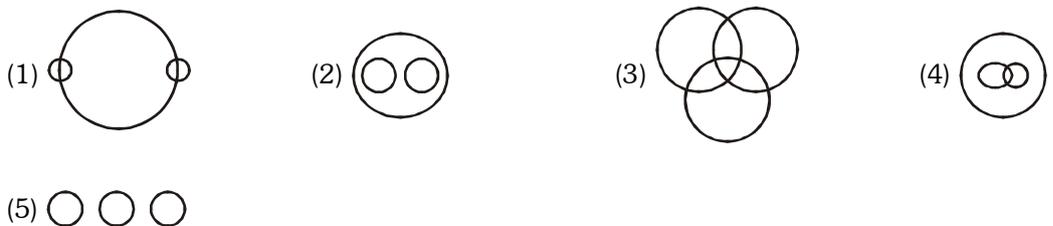
36. Which one of the following diagrams indicates the best relation between travellers, train and bus.



Ans. (3)

Sol. By observation

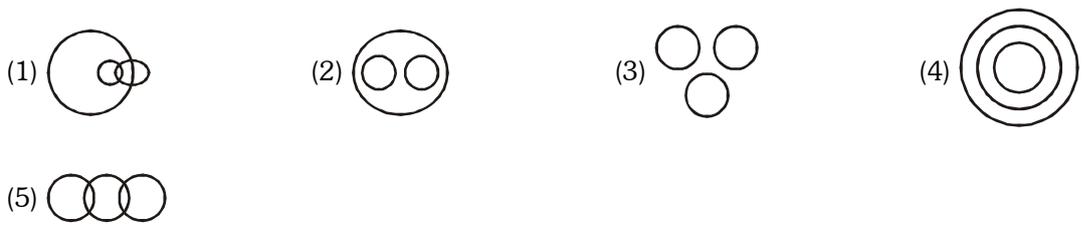
37. Which one of the following diagrams indicates the best relationship between profit, dividend and bonus ?



Ans. (2)

Sol. By observation

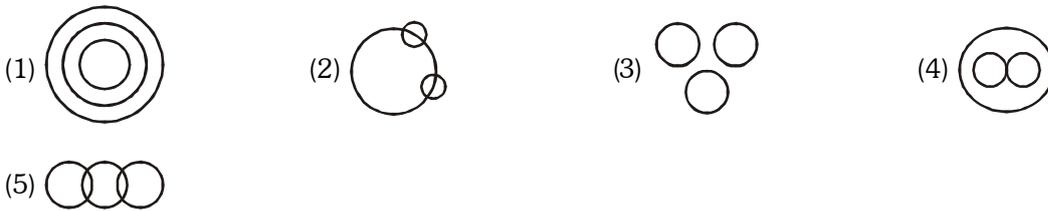
38. Which one of the following diagrams indicates the best relationship between women, mother and engineers ?



Ans. (1)

Sol. By observation

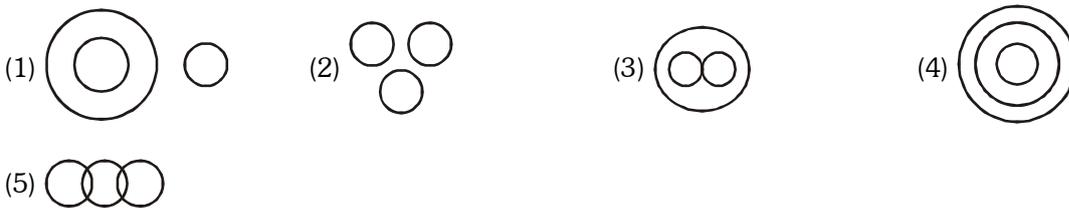
39. Which one of the following diagrams indicates the best relationship between factory, product and machinery ?



Ans. (4)

Sol. By observation

40. Which one of the following diagrams indicates the best relationship between author, lawyer and singer ?

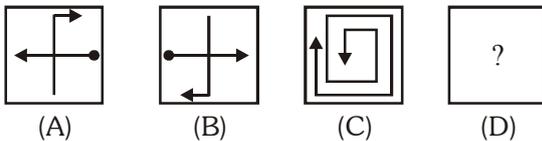


Ans. (2)

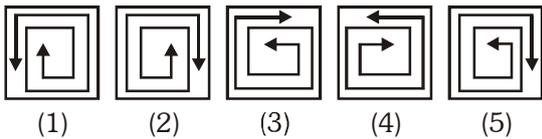
Sol.

Direction (41 to 45) : Each of the following questions consists of two sets of figures. Figures A, B, C and D constitute the problem set, while figures 1, 2, 3, 4, and 5 constitutes the answer set. Select a suitable figure from the answer figure that would replace the question mark (?).

41. Problem Figures



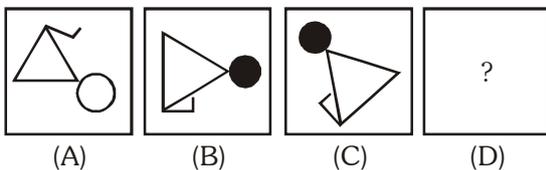
Answer Figures



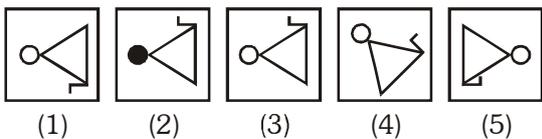
Ans. (2)

Sol. By observation

42. Problem Figures



Answer Figures

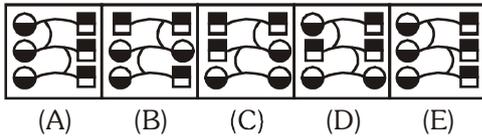


Ans. (3)

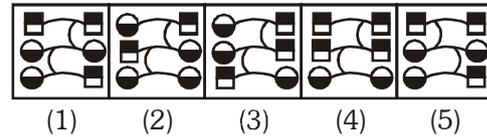
Sol. By observation

Direction (46 to 50) : Each of the following questions consists of the five figures marked A, B, C, D and E called the problem figures followed by five alternatives marked 1, 2, 3, 4 and 5 called the answer figures. Select a figure which will continue the same series established by the five problem figures.

46. Problem Figures



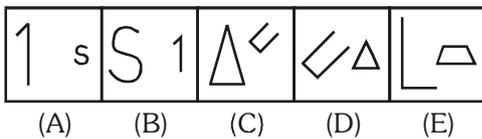
Answer Figures



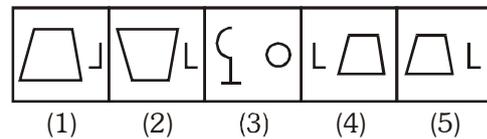
Ans. (1)

Sol. By observation

47. Problem Figures



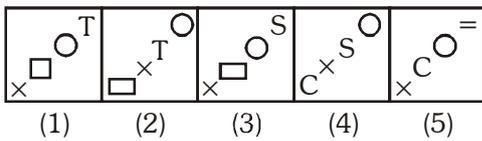
Answer Figures



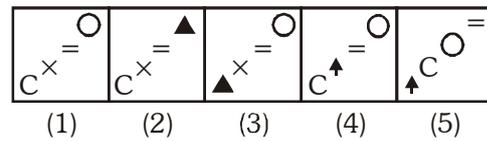
Ans. (5)

Sol. By observation

48. Problem Figures



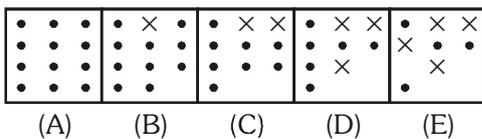
Answer Figures



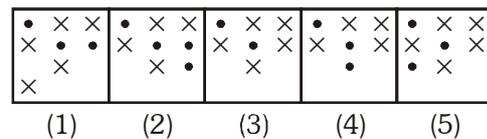
Ans. (3)

Sol. By observation

49. Problem Figures



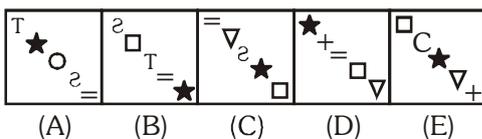
Answer Figures



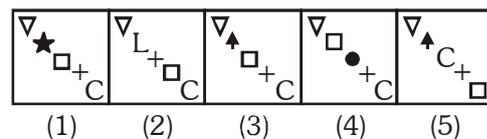
Ans. (3)

Sol. By observation

50. Problem Figures



Answer Figures



Ans. (3)

Sol. By observation