



**NATIONAL TALENT SEARCH EXAMINATION
(NTSE-2018) STAGE -1
STATE : HARYANA PAPER : MAT**

Date: 05/11/2017

Max. Marks: 50

SOLUTIONS

Time allowed: 45 mins

1. How many '8' s, are there followed by an even number and preceded by an odd number in the given number sequence ?

5 8 4 7 8 3 2 8 5 4 8 2 9 8 6 8 5 4 8 7 8 4 2 8 6 4 5 8 4 9

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

Ans. (3)

Sol. 5 **8** 4 7 8 3 2 8 5 4 8 2 9 **8** 6 5 4 8 7 **8** 4 2 8 6 4 5 **8** 4 9

2. J, K and L are educated; J, L and M are hard working ; L, M and N are employed; J, K, M and N are polite. Who is educated, hard working, polite but not employed ?

(1) J (2) K (3) L (4) N

Ans. (1)

Sol. Educated Hard working Employee Polite

J	✓	✓		✓
K	✓			✓
L	✓	✓	✓	
M		✓	✓	✓
N			✓	✓

3. If 'S' denote '+'. 'D' denotes '-', 'Q' denotes '÷' and 'P' denotes then value of following equation is :

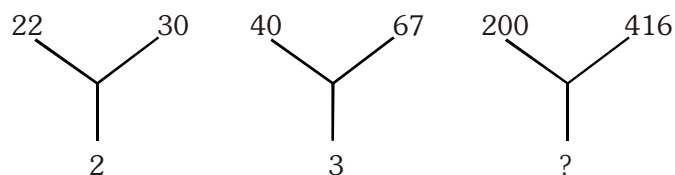
35 Q 7 P 5 S 5 D 6 = ?

(1) 22 (2) 24 (3) 26 (4) 28

Ans. (2)

Sol. $35 \div 7 \times 5 + 5 - 6 = 24$

Direction (Q.4 -5) : Select the missing number from the given responses.



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

Ans. (1)

Sol. $30 - 22 = 8 = 2^3$

$67 - 40 = 27 = 3^3$

$416 - 200 = 216 = 6^3$

5. $\begin{matrix} 14 & 25 & 42 \\ 2 & 4 & 6 \\ 3 & 3 & ? \\ 4 & 7 & 9 \end{matrix}$

(1) 7

(2) 6

(3) 4

(4) 3

Ans. (3)

Sol. $4 \times 3 + 2 = 14$

$7 \times 3 + 4 = 25$

$9 \times x + 6 = 42$

$x = 4$

Direction (Q.6-7) : Some equations are solved on the basis of a certain system. On the same basis, find out the correct answer, from amongst the four alternatives, for the unsolved equation.

6. If $9 * 7 = 32$, $11 * 5 = 96$ then $17 * 9 = ?$

(1) 160

(2) 175

(3) 208

(4) 280

Ans. (3)

Sol. $9^2 - 7^2 = 32$, $11^2 - 5^2 = 96$

$\therefore 17^2 - 9^2 = 208$

7. $85 \times 14 = 44$, $68 \times 28 = 64$, $79 \times 45 = ?$

(1) 72

(2) 83

(3) 96

(4) 124

Ans. (2)

Sol. $8 \times 5 + 1 \times 4 = 44$, $6 \times 8 + 2 \times 8 = 64$, $7 \times 9 + 4 \times 5 = 83$

Direction : Q.8-9 are based on the following data.

Vaibhav walks 2 km to east, turns right and walks 1 km and then turns left and walks 4 km and again turning to his left travels 9 km.

8. In which direction in Vaibhav now from his starting point ?

(1) North

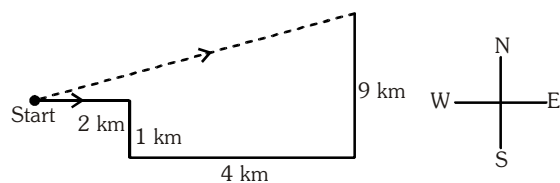
(2) North-East

(3) West

(4) South-West

Ans. (2)

Sol.



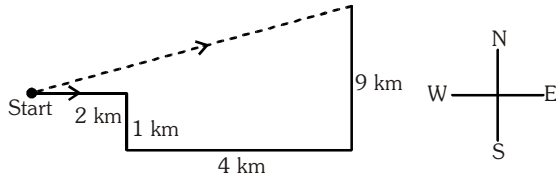
North-east

9. What is the shortest distance between Vaibhav's starting point and the present position ?

- (1) 6 km (2) 8 km (3) 10 km (4) 12 km

Ans. (3)

Sol.



$$\sqrt{6^2 + 8^2} = 10 \text{ km}$$

Direction (Q.10-11) : Take the given statements as true even if they seem to be at variance from commonly known facts and decide which of the conclusions logically follows from the statements.

10. Statements : All flowers are fruits.

Some fruits are vegetables.

No vegetable is tree.

Conclusions :

I. Some fruits are flowers.

II. Some trees are vegetables.

III. Some fruits are trees.

(1) Only conclusion I follow.

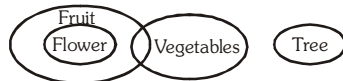
(2) Only conclusion II follow.

(3) Only conclusion I and II follows.

(4) Only conclusion II and III follows.

Ans. (1)

Sol.



or



11. Statement : Adversity makes a man wise.

Conclusions :

I. The poor are wise.

II. Man learns from bitter experience.

(1) If only conclusion I follow.

(2) If only conclusion II follow.

(3) If both I and II follows.

(4) If neither I and nor II follows.

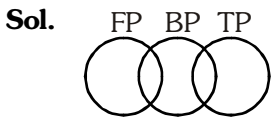
Ans. (2)

Sol. Man learns are bitter expence

12. 'Some of the Football players are Badminton players, some Badminton players are Tennis players, no Football player is a Tennis player'. Which of the following venn diagrams correctly represents the above statement?



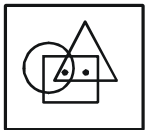
Ans. (4)



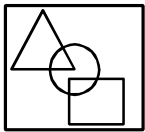
FP → Football player
BP → Badminton player
TP → Tennis player

13. There are two dots placed in the Question Figure. Find out the answer figure which has the possibility of placing the dots satisfying the same conditions as in the Question figure ?

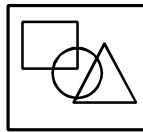
Question figure :



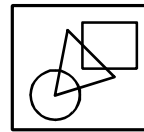
Answer figure



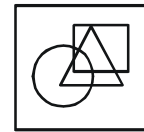
(1)



(2)

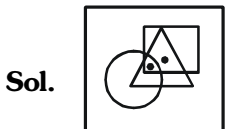


(3)

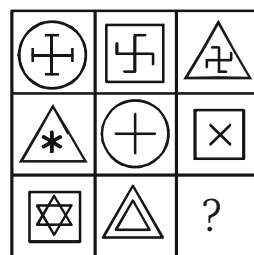


(4)

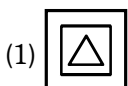
Ans. (4)



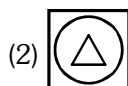
14. Select a suitable figure from the four alternatives that would complete the given matrix.



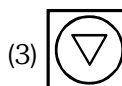
(X)



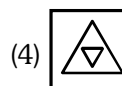
(1)



(2)



(3)

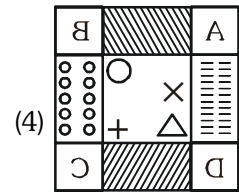
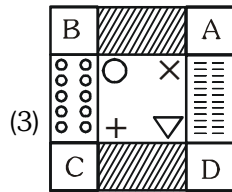
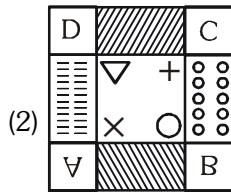
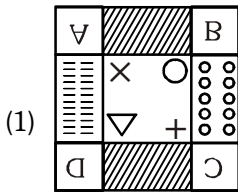
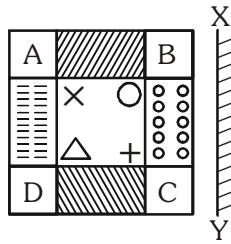


(4)

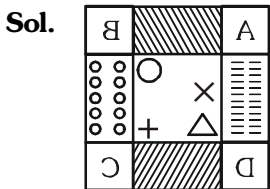
Ans. (3)



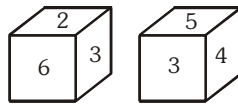
15. If a mirror is placed on the line X Y, then which of the answer figures is the correct image of the given Question Figure ?



Ans. (4)



16. Two positions of a dice are shown below. When number 1 is on the top, what number will be at the bottom ?



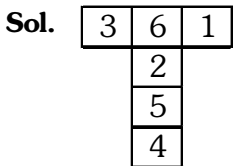
(1) 2

(2) 3

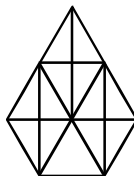
(3) 5

(4) 6

Ans. (2)



17. How many triangles are there in the following figure ?



(1) 20

(2) 25

(3) 32

(4) 34

Ans. (3)

Sol. By counting

Direction (Q.18-22) : In the following questions, there is a relationship between the letters/numbers/figures on the left of the sign (: :). The same relationship exists to the right of the sign (: :), of which one is missing. find the missing term from the given alternatives.

18. CEHL : PLIG :: LNQU : ?

- (1) PYUR (2) YUPR (3) YURP (4) YPUR

Ans. (3)



19. FEAL : LEAF :: EAKT : ?

- (1) KATE (2) TAKE (3) KETA (4) ETAK

Ans. (2)



20. 63 : 9 :: ? : 14

- (1) 43 (2) 54 (3) 86 (4) 96

Ans. (3)

Sol. Sum of digit

$$63 : 9 :: \underline{86} : 14$$

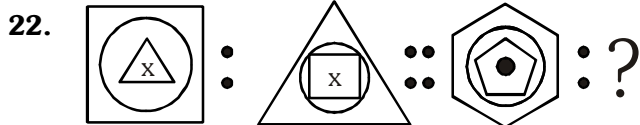
21. 5 : 64 :: 11 ; ?

- (1) 121 (2) 124 (3) 144 (4) 196

Ans. (4)

Sol. $(5 + 3)^2 = 64$

$$\therefore (11 + 3)^2 = 196$$



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

Ans. (1)

Sol. By observation

Direction (Q.23-27) : In the following questions, some letter clusters/ numbers/figures are given in a sequence. Find the missing term to replace the question mark from the given alternatives.

23. REOC, PGME, NIKG, ?

- (1) MJJI (2) LKII (3) LKJH (4) KLIG

Ans. (2)

Sol. REOC, PGME, NIKG, LKII

1st letter are - 2

2nd letters are +2

3rd letters are -2

4th letters are +2

24. BYCX, DWEV, FUGT, ?

- (1) JSHR (2) HRJS (3) HSRJ (4) HSIR

Ans. (4)

Sol. 1st letter are 2

2nd letters are -2

3rd letters are +2

4th letters are -2

25. 6, 11, 26, 71, 206, ?

- (1) 244 (2) 496 (3) 611 (4) 632

Ans. (3)

Sol. $6 \times 3 - 7$

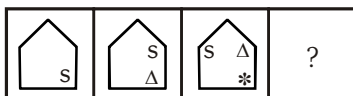
26. 81, 192, 375, ?, 1029

- (1) 686 (2) 648 (3) 484 (4) 468

Ans. (2)

Sol. 81, 192, 375, **648**, 1029

$9 \times 9, 16 \times 12, 25 \times 15, \mathbf{36 \times 18}, 49 \times 21$

27. 

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

Ans. (1)

Sol. By observation

28. Arrange the following words in logical order.

- | | | | |
|---------------|---------------|---------------|---------------|
| 1. Leaf | 2. Fruit | 3. Stem | 4. Root |
| 5. Flower | | | |
| (1) 4,1,3,5,2 | (2) 4,3,1,2,5 | (3) 4,3,1,5,2 | (4) 4,5,1,3,2 |

Ans. (3)

Sol. Root, stem, leaf, flower, fruit.

29. Which one number is wrong number series ?

- 13, 17, 19, 23, 27, 29
- | | | | |
|--------|--------|--------|--------|
| (1) 29 | (2) 27 | (3) 23 | (4) 19 |
|--------|--------|--------|--------|

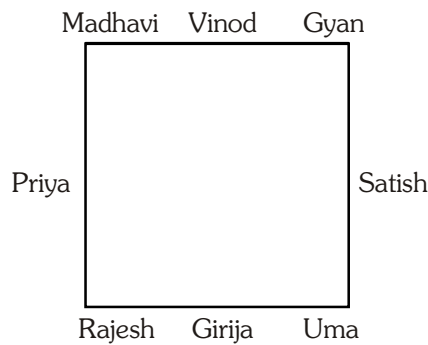
Ans. (2)

Sol. Prime numbers.

Direction : Q. No. 30 to 32 are based on following information.

A group of friends is sitting in a square facing the centre, They are sitting one each at the corners and one each at the midpoints of the sides of the square. Madhvi is sitting diagonally opposite to Uma who is to Girija's right. Rajesh is next to Girija and opposite to Gyan who is on Vinod's left. Satish is not on Madhvi's right but opposite to Priya.

Sol. Q. No. 30 to 32



30. Who is opposite to Vinod?

- | | | | |
|------------|------------|-----------|------------|
| (1) Girija | (2) Madhvi | (3) Priya | (4) Satish |
|------------|------------|-----------|------------|

Ans. (1)

31. Who is between Gyan and Madhvi?

- | | | | |
|------------|------------|-----------|-----------|
| (1) Rajesh | (2) Satish | (3) Vinod | (4) Priya |
|------------|------------|-----------|-----------|

Ans. (3)

32. If Gyan and Rajesh interchange their places, who will be to the left of Gyan ?

- | | | | |
|------------|-----------|-----------|------------|
| (1) Satish | (2) Priya | (3) Vinod | (4) Girija |
|------------|-----------|-----------|------------|

Ans. (2)

33. Arrange the following words as per order in the dictionary

- | | | | |
|----------------|---------------|---------------|---------------|
| 1. Dissident | 2. Dissolve | 3. Dissent | 4. Dissolute |
| 5. Dissolution | | | |
| (1) 3,1,4,2,5 | (2) 3,1,4,5,2 | (3) 3,2,4,5,1 | (4) 3,2,1,4,5 |

Ans. (2)

Sol. Dissent, Dissident, Dissolute, Dissolution, Dissolve

34. In a race Amar was running faster than Bipin. Chetan could not run as fast as Amar but ran faster than Deepak. Bipin too could not run as fast as Chetan but ran faster than Deepak. Who will be the winner in the race ?

- (1) Deepak (2) Chetan (3) Bipin (4) Amar

Ans. (4)

Sol. Amar > Chetan > Bipin : Deepak

35. If Friday falls on 15th of September 2000, what will be the day on 15th of September 2001 ?

- (1) Thursday (2) Friday (3) Saturday (4) Sunday

Ans. (3)

Sol. One complete ordinary year = + 1 odd by

Direction (Q.36-38) : Select the one word pair/number-pair/letter cluster which is different from the other three alternatives.

36. (1) Light : Heavy (2) Kind : Cruel (3) Soft : Hard (4) Vacant : Empty

Ans. (4)

Sol. Opposite meaning.

37. (1) 18 : 48 (2) 30 : 80 (3) 40 : 110 (4) 48 : 134

Ans. (1)

Sol. $18 \times 3 = 54$

38. (1) DIMPR (2) HMQTV (3) QVZBC (4) UZDGI

Ans. (3)

Sol. Difference are decreasing

39. At present the father is older than the son by 25 years. After 13 years the father's age becomes double that of the son. What is father's age now ?

- (1) 26 years (2) 37 years (3) 38 years (4) 50 years

Ans. (2)

Sol. Let present age of father and son be x , $x - 25$

$$\therefore x + 13 = 2(x - 25 + 13)$$

$$x = 37$$

Father's age = 37

40. In a row of boys. Vishal is seventh from the left and Kamal is eleventh from the right. When they exchange their places, Vishal is thirteenth from the left. What is the new position of Kamal from the right ?

- (1) 16th (2) 17th (3) 18th (4) 19th

Ans. (2)

Sol. New position of Kamal from right = $13 + 11 - 7 = 17$

41. In an examination some questions carry 2 marks each and some others 4 marks each. A student scored 10 marks by attempting 15 questions correct in all. How many questions carrying 2 marks did he attempt correctly?

- (1) 15 (2) 12 (3) 8 (4) 10

Ans. (4)

Sol. Let number of 2 mark question be x

Number of 4 mark question = $15 - x$

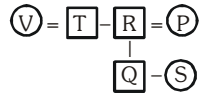
$$2x + 4(15 - x) = 40$$

$$x = 10$$

Direction : Q. 42-44 are based on following information.

P, Q, R, S, T and V are relative 'Q' is the son of 'R' but 'R' not the mother of 'Q', 'P' and 'R' is a married couple. 'T' is the brother of 'R', 'S' is the daughter of 'T', and 'V' is the Aunt of 'Q'.

Sol. Q. 42-44



42. Who is the mother of 'Q'?

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

Ans. (1)

43. How is T related to 'Q'?

- (1) Father (2) Brother (3) Son (4) Uncle

Ans. (4)

44. Who is the wife of T?

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

Ans. (2)

45. From the given alternative words, select the word which cannot be formed using the letters of the given word:

COMMISSIONER

- (1) COMMON (2) MISSION (3) MISSILE (4) SIREN

Ans. (3)

Sol. L is missing.

46. Select the correct combination of numbers so that letters Arranged accordingly will form a meaningful word.

N S G R E I

5 4 3 2 1 0

- (1) 0 2 5 3 1 4 (2) 3 1 5 4 0 2 (3) 5 0 4 2 3 1 (4) 4 0 5 3 1 2

Ans. (4)

Sol. S I N G E R

4 0 5 3 1 2

47. In a certain code language. DIAMOND is written as EMPLBHE. How will ROUTINE be written in that code language?

- (1) FMJSVNS (2) FOJUVPS (3) FMJVSSN (4) SNVSJMF

Ans. (1)

Sol. $\begin{array}{cccccccc} \text{D} & \text{I} & \text{A} & \text{M} & \text{O} & \text{N} & \text{D} \\ +1 & -1 & +1 & -1 & +1 & -1 & +1 \\ \text{E} & \text{H} & \text{B} & \text{L} & \text{P} & \text{M} & \text{E} \\ \hline & & & & & & \rightarrow \end{array}$

48. In certain code language GUIDE is written as $\triangle \bigcirc \square * \square$ and MARCH is written as $@ + \$ \nabla \%$. How will DIAGRAM be written in same code language?

- (1) $* \square + \nabla \$ + @$ (2) $* \square + \$ + \Delta @$ (3) $* \square + \Delta \$ + @$ (4) $* \square + \$ + @ \nabla$

Ans. (3)

Sol. By direct coding

49. If MY = 16, SUN = 27 then HOTEL will be equal to

- (1) 60 (2) 75 (3) 77 (4) 80

Ans. (2)

Sol. Sum of reverse values

50. If 'water' is called 'air', 'air' is called 'tree'; 'tree' is called 'sky', 'sky' is called 'sea' and 'sea' is called 'fire', where do aeroplanes fly ?

- (1) water (2) sky (3) fire (4) sea

Ans. (4)

Sol. Aeroplane flying, sky, sky is called sea
