



**NATIONAL TALENT SEARCH EXAMINATION  
(NTSE-2019) STAGE -1  
STATE : ODISHA PAPER : MAT**

Date: 04/11/2018

Max. Marks: 100

**SOLUTIONS**

Time allowed: 120 mins

**Directions for question number 1 to 2:**

For each question, a word is presented in a code language, Follow the same code and find the answer from the alternatives to replace the question mark.

1. If NUMBER : UNBMRE, then GHOST ; (?)

- (A) GHSOT (B) GHOTS (C) HGSOT (D) HGOST

Ans. (C)

Sol. Pair of two digits is written in reverse order from beginning.

2. If BEAT : EHDW, then ROAD : (?)

- (A) SQCF (B) URDG (C) TQCF (D) URNG

Ans. (B)

Sol.  $\begin{matrix} B & E & A & T \\ \downarrow & \downarrow & \downarrow & \downarrow \\ E & H & D & W \end{matrix}$  two letters are skipped in each one.

$\Rightarrow \begin{matrix} R & O & A & D \\ \downarrow & \downarrow & \downarrow & \downarrow \\ U & R & C & G \end{matrix}$

**Directions for question number 3 to 6:**

Fill in the place of the question mark from the alternatives.

3. A4Z, D7W, ?, J19Q, M28N

- (A) E9U (B) G12T (C) H12S (D) F11V

Ans. (B)

Sol.  $A \xrightarrow{+3} D \xrightarrow{+3} G \xrightarrow{+3} J \xrightarrow{+3} M$

$4 \xrightarrow{+3} 7 \xrightarrow{+5} 12 \xrightarrow{+7} 19 \xrightarrow{+9} 28$

$Z \xrightarrow{-3} W \xrightarrow{-3} T \xrightarrow{-3} Q \xrightarrow{-3} N$

4. ADbc, EHfg, ILjk, ?

- (A) LOmn (B) MPno (C) MNop (D) MPon

Ans. (B)

Sol. Alphabets are written continuously in lower and uppercase.

5. ZXU, XVS, ?, TRO

- (A) VTQ (B) TRQ (C) VRQ (D) TVS

Ans. (A)

**Sol.** Alphabets are decreased by gap of  $-2$ .

6. 9, 4.5, 4.5, 6.75, 13.5, ?, 101.25

- (A) 99.75 (B) 33.75 (C) 13.5 (D) 40.5

**Ans. (B)**

**Sol.**  $9 \xrightarrow{\times 0.5} 4.5 \xrightarrow{\times 1} 4.5 \xrightarrow{\times 1.5} 6.75 \xrightarrow{\times 2} 13.5 \xrightarrow{\times 2.5} 33.75 \xrightarrow{\times 3} 101.25$

7. Arrange the given words in a meaningful sequence and find the correct sequence from the given alternatives.

- (1) Rain (2) Monsoon (3) Rescue (4) Flood  
(5) Shelter

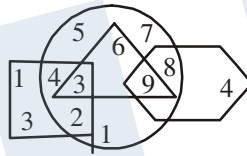
- (A) (1), (2), (3), (4), (5) (B) (1), (2), (4), (5), (3) (C) (2), (1), (4), (3), (5) (D) (4), (1), (2), (3), (5)

**Ans. (C)**

**Sol.** Monsoon, Rain, Flood, Rescue, shelter

**Directions for question number 8 to 11:**

Study the figure given below carefully and answer the questions



8. What is the product of the numbers which belong to two figures only?

- (A) 64 (B) 192 (C) 384 (D) 105

**Ans. (C)**

**Sol.**  $4 \times 2 \times 8 \times 6 = 384$

9. If numbers in the circle represent women, then how many women are there?

- (A) 20 (B) 45 (C) 28 (D) 33

**Ans. (B)**

**Sol.**  $5 + 4 + 3 + 2 + 9 + 1 + 3 + 7 + 6 = 45$

10. What is the product of the numbers which belong to three figures only?

- (A) 27 (B) 162 (C) 648 (D) 54

**Ans. (A)**

**Sol.**  $3 \times 9 = 27$

11. What is the sum of the numbers which belong to two geometrical figures only?

- (A) 6 (B) 10 (C) 20 (D) 30

**Ans. (C)**

**Sol.**  $4 + 2 + 8 + 6 = 20$

**Directions for question number 12 to 14:**

In each of the following questions, three statements are given followed by four conclusions numbered (I), (II), (III) and (IV). You have to take the given statements to be true and then decide which of the given conclusions logically follow from the given statements.

**12. Statements:**

Some tigers are lions. Some lions are rabbits. Some rabbits are horses.

**Conclusion:**

- (I) Some tigers are horses
- (II) Some rabbits are tigers
- (III) Some horses are lions
- (IV) All horses are rabbits
- (A) All follow
- (C) Only (I) and (II) follow

- (B) None follows
- (D) Only (II) and (IV) follow

**Ans. (B)**



**13. Statements:**

Some dogs are rats. All rats are trees. Some trees are not dogs.

**Conclusion:**

- (I) Some trees are dogs.
- (II) All dogs are trees.
- (III) All rats are dogs
- (IV) No tree is dog.
- (A) All follow
- (C) Only (I) and (II) follow

- (B) Only (I) follows
- (D) Only (II) and (IV) follow

**Ans. (B)**



**14. Statements:**

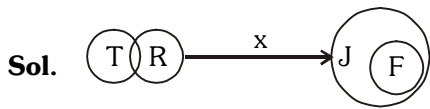
Some trains are roads. No road is jungle. All flowers are jungles.

**Conclusion:**

- (I) Some trains are flowers
- (II) Some trains are jungles
- (III) Some flowers are trains
- (IV) No road is flower

- (A) None follows
- (B) Only (II) follows
- (C) Only (III) follows
- (D) Only (IV) follows

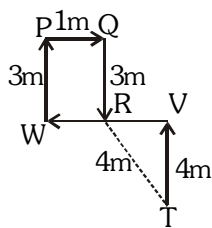
**Ans. (D)**



**15.** Maya starts at point 'T', walks straight to point 'U' which is 4 meters away. She turns left at  $90^\circ$  and walks to 'W' which is 4 meters away turns  $90^\circ$  right and goes 3 meters to 'P', turns  $90^\circ$  right and walks 1 meter to 'Q', turns left at  $90^\circ$  and goes to 'V' which is 1 meter away and once again turns  $90^\circ$  right and goes to 'R' which is 3 meter away. What is the distance between 'T' and 'R' ?

- (A) 4 meter                      (B) 5 meter                      (C) 7 meter                      (D) 8 meter

**Ans. (B)**



$$RU = WV \times WR = 3m$$

Distance between T and R

$$\Rightarrow (TR)^2 = (RU)^2 + (UT)^2$$

$$= (3)^2 + (4)^2$$

$$\Rightarrow TR = 5m$$

**16.** A watch gains 5 seconds in 3 minutes and was set right at 8 AM. What time will it show at 10 PM on the same day?

- (A) 10 : 27 : 41 PM                      (B) 8 : 51 : 04 AM                      (C) 9 : 45 : 15 PM                      (D) 10 : 23 : 20 PM

**Ans. (D)**

**Sol.** Watch gain 5 sec in 3min = 100 sec in 1 hour. From 8 AM to 10PM on same day, time passed = 14 hours.

In 14 hours, watch would have gained 23 min 20 seconds.

So, when correct time is 10PM, watch would show 10 : 23 : 20 PM

**17.** A clock is set right at 4 A.M. on Sunday. The clock loses 20 minutes in 24 hours. What will be the correct time when the clock indicates 3 A.M. on Wednesday ?

- (A) 4 AM                      (B) 5 AM                      (C) 2 AM                      (D) 4.30 AM

**Ans. (A)**

**Sol.** 23 hour 40 minutes of incorrect watch = 24 hours of correct watch.

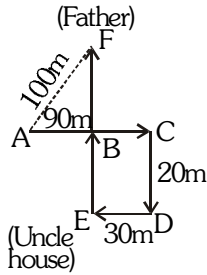
$$\frac{71}{3} \text{ hours} = 24 \text{ hours of correct watch time from 4 AM Sunday to 3 AM Wednesday}$$

$$\Rightarrow 71 \text{ hours} = \frac{24 \times 3}{71} \times 71 = 72 \text{ hours}$$

⇒ 4 AM Wednesday.

- 18.** A child went 90 m in the East to look for his father, then he turned right and went 20 m. After this he turned right and after going 30 m he reached to his uncle's house. His father was not there. From there he went 100 m to his north and met his father. How far did he meet his father from the starting point ?  
 (A) 80 m                      (B) 100 m                      (C) 140 m                      (D) 260 m

**Ans. (B)**



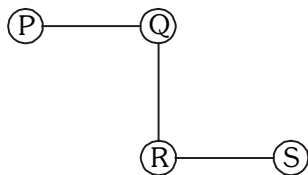
**Sol.**

Distance between AF  
 $(AF)^2 = (FB)^2 + (AB)^2$   
 $= (FE - BE)^2 + (AC - BC)^2$   
 $= (80)^2 + (60)^2$   
 $= 6400 + 3600$   
 $(AF)^2 = 10000$

⇒  $AF = 100m$

- 19.** If  $A \times B$  means A is to the south of B;  $A + B$  means A is to the north of B;  $A \% B$  means A is to the east of B;  $A - B$  means A is to the west of B; then in  $P \% Q + R - S$ , S is in which direction with respect to Q ?  
 (A) South-West                      (B) South-East                      (C) North-East                      (D) North-West

**Ans. (B)**



**Sol.**

South - East

- 20.** A clock is started at noon. By 10 minutes past 5 PM on the same day, the hour hand has turned through:  
 (A)  $145^\circ$                       (B)  $150^\circ$                       (C)  $155^\circ$                       (D)  $160^\circ$

**Ans. (C)**

**Sol.** In 1 hours, hour hand rotates  $30^\circ$   
 Thus, from 12 to 5, difference of 5 hours.

Hour hand rotates by  $5 \times 30 = 150^\circ$

In 60 Min, hour hand turns by  $30^\circ$

so, in 10 minutes, hours hand turns by  $\frac{30}{60} \times 10 = 5$  degree

**Directions for question number 21 to 24:**

Each of the questions below consists of a question and two statements numbered (I) and (II) given below it. You have to decide whether the data provided in the statements are sufficient to answer the question by selecting from the following options.

- (1) (I) alone is sufficient while (II) alone is not sufficient
- (2) (II) alone is sufficient while (I) alone is not sufficient
- (3) Either (I) or (II) is sufficient
- (4) Neither (I) nor (II) is sufficient

**21.** A, B and C have money with them respectively in the ratio of 5 : 4 : 1 then, how much money does B have ?

- (I) A has ₹ 48 more than C.
- (II) The money with B is ₹ 30 less than A.

- (A) 1                                      (B) 2                                      (C) 3                                      (D) 4

**Ans. (C)**

**Sol.** (I)  $5x : 4x : x$   
 $\Rightarrow 5x - x = 48$   
 $\Rightarrow x = 12$   
 $5x = 60, 4x = 48, x = 12$

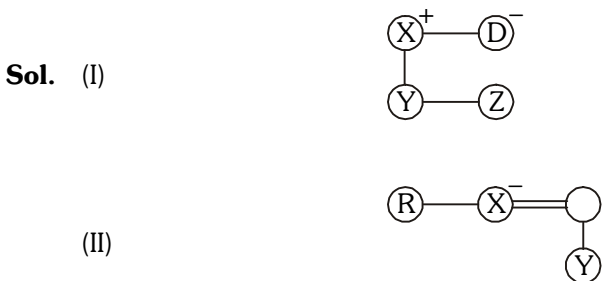
(II)  $A = 30 + 4x = 5x$   
 $\Rightarrow x = 30$

**22.** How is X related to Y ?

- (I) Y and Z are children of D who is wife of X.
- (II) R's sister X is married to Y's father

- (A) 1                                      (B) 2                                      (C) 3                                      (D) 4

**Ans. (C)**



**23.** How many doctors are practicing in this town ?

- (I) There is one doctor per seven hundred residents.

(II) There are 16 wards with each ward having as many doctors as the number of wards.

- (A) 1 (B) 2 (C) 3 (D) 4

**Ans. (B)**

**Sol.** (I) Total doctors in town =  $N \times \frac{1}{700}$

N = Total Number of residents

(But unknown)

(II) Number of doctors in town - (Number of wards) × (Number of doctors in each ward)  
=  $16 \times 16$   
= 256

**24.** Among T.V.B.E and C, who is the third from the top when arranged in the descending order of their weights?

(I) B is heavier than T and C and is less heavy than V who is not the heaviest.

(II) C is heavier than only T.

- (A) 1 (B) 2 (C) 3 (D) 4

**Ans. (A)**

**Sol.** (I)  $B > T, B > C, V > B$   
Thus, V is heavier than B, T and C  
But V is not heaviest. So, E is heaviest  
(II)  $E > V > B > T > C$   
or  $E > V > B > C > T$   
Hence, B is third from top

**Directions for question number 25 to 28:**

For each question, a word is presented in a code language. Follow the same code and find the answer from the alternatives.

**25.** If FRIEND is coded as HUMJTK, how is CANDLE written in that code?

- (A) EDRIRL (B) DCQHQB (C) ESJFME (D) DEQJQM

**Ans. (A)**

**Sol.** Difference between letters is increased by  
 $+2, +3, +4, +5, +6, +7$

**26.** In a certain code, '247' means 'spread red carpet'; '256' means 'dust one carpet' and '234' means 'one red carpet'. Which digit in that code means "dust"?

- (A) 2 (B) 3 (C) 5 (D) 6

**Ans. (C)**

**Sol.** In first and second statement, common code is 2 and common word is carpet.

So, 2 means 'carpet'

In second and third statements, common digit is 6 and common word is 'one'

So, 6 means 'one'

Therefore, in second statement, '5' means 'dust'.

**27.** If ROSE is coded as 6821. CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for

SEARCH?

- (A) 246173                      (B) 214673                      (C) 214763                      (D) 216473

**Ans. (B)**

**Sol.** Letters of word 'SEARCH' are present in ROSE, CHAIR and PREACH.

So, code is 214673.

**28.** In a certain coding language, if GO = 32 & SHE = 49 then SOME will be equal to ?

- (A) 56                      (B) 58                      (C) 62                      (D) 64

**Ans. (a)**

**Sol.** Adding reverse position of alphabets

$$\text{SOME} = 8 + 12 + 14 + 22$$

$$= 56$$

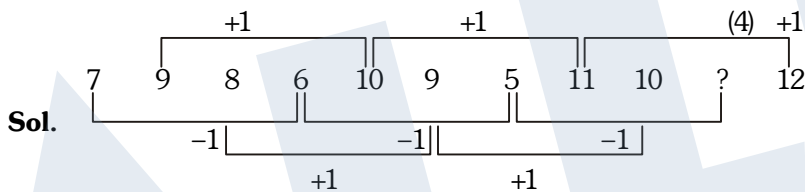
**Directions for question number 29 to 30:**

Select the number from the alternatives to fill up the question mark (?) in the number series.

**29.** 7, 9, 8, 6, 10, 9, 5, 11, 10, ?, 12

- (A) 5                      (B) 11                      (C) 29                      (D) 4

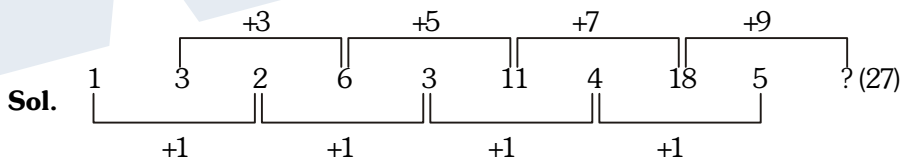
**Ans. (D)**



**30.** 1, 3, 2, 6, 3, 11, 4, 18, 5, ?

- (A) 27                      (B) 11                      (C) 23                      (D) 29

**Ans. (A)**



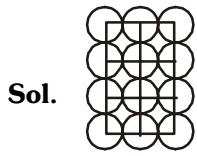
**31.** In the adjoining figure, if the centres of all the circles are joined by horizontal and vertical lines, then find the number of squares that can be formed.



- (A) 6                      (B) 7                      (C) 8                      (D) 1

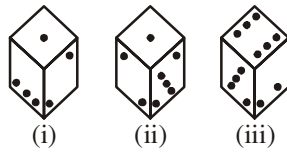


Ans. (C)



Total number of squares = 8

32. Based on the given positions of the dice find the number of dots on the face opposite to the face with one dot.



- (A) 2 (B) 3 (C) 4 (D) 6

Ans. (D)

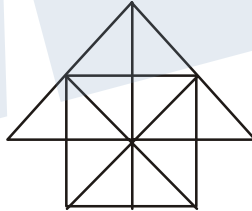
Sol. Moving in clockwise direction from common number in dice I and dice III.

2 – 3 – 1

2 – 4 – 6

So, opposite of 1 is 6.

33. Count the number of triangles and squares in the given figure.

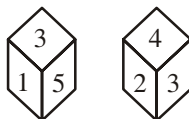


- (A) 26 triangles, 5 squares (B) 28 triangles, 5 squares  
(C) 26 triangles, 6 squares (D) 28 triangles, 6 squares

Ans. (D)

Sol. 28 triangles, 6 squares

34. Based on the given positions of the dice find out which number is opposite to 3.



- (A) 1 (B) 6 (C) 5 (D) 4

**Ans. (B)**

**Sol.** Moving in clockwise direction from common number 3

$$3 - 5 - 1$$

$$3 - 2 - 4$$

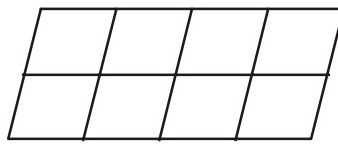
So, opposite of

$$1 \longleftrightarrow 4$$

$$2 \longleftrightarrow 5$$

$$3 \longleftrightarrow 6$$

**35.** How many parallelograms are there in the following figure ?



(A) 12

(B) 20

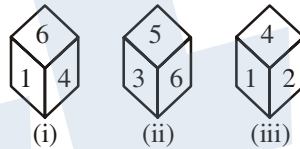
(C) 29

(D) 30

**Ans. (D)**

**Sol.** Total number of parallelogram = 30

**36.** Based on the given positions of the dice find out which number is opposite to 2.



(A) 6

(B) 5

(C) 3

(D) 1

**Ans. (A)**

**Sol.** Comparing dice 1 and 3

If two faces of dices are common, then third face of 1 dice is opposite to third face of 2 dice.

**Directions for question number 37 to 38:**

Fill in blanks in the letter series.

**37.**  $xy\_z\_xxyx\_px\_yxzpx\_yxzpx$

(A)  $x\ p\ z\ x\ x$

(B)  $y\ x\ y\ z\ x$

(C)  $y\ x\ z\ p\ x$

(D)  $z\ y\ x\ p\ y$

**Ans. (A)**

**Sol.**  $xy\ z\ p\ x\ x\ y\ x\ z\ p\ x\ p\ x\ y\ x\ z\ p\ x\ y\ y\ x\ z\ p\ x$

**38.**  $aab\_aa\_bbb\_aaa\_bbba$

(A)  $a\ b\ b\ a$

(B)  $b\ a\ a\ b$

(C)  $a\ a\ a\ b$

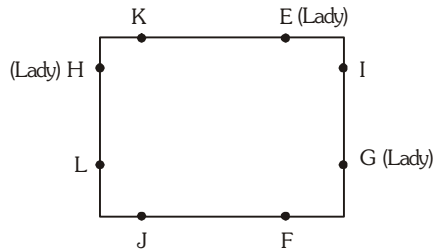
(D)  $a\ b\ a\ b$

**Ans. (B)**

**Sol.**  $aab\ baa\ abbb\ aaaa\ bbbba$

**Directions for question number 39 to 42:**

Each of these questions is based on the information given : 8 person E, F, G, H, I, J, K and L are seated around a square table - two on each side. There are 3 ladies who are seated next to each other. J is between L and F. G is between I and F. H, a lady member is second to the left of J. F, a male member is seated opposite to E, a lady member. There is a lady member between F and I.



39. What is true about J and K?

- (A) J is male, K is female
- (B) K is female, K is male
- (C) Both are female
- (D) Both are male

Ans. (D)

40. Who among the following are three lady members ?

- (A) E H and J
- (B) E, F and G
- (C) E, H and G
- (D) C, H and J

Ans. (C)

41. Who among the following is to the immediate left of F?

- (A) G
- (B) I
- (C) J
- (D) H

Ans. (C)

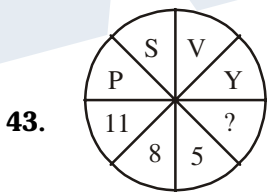
42. How many persons are seated between K and F?

- (A) 1
- (B) 2
- (C) 3
- (D) 4

Ans. (C)

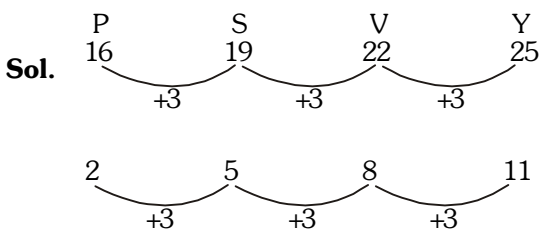
**Directions for questions number 43 to 47:**

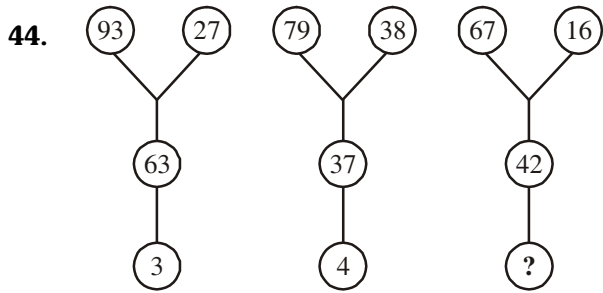
Which alternative will replace the question mark ?



- (A) 3
- (B) 7
- (C) 2
- (D) 6

Ans. (B)





(A) 5

(B) 6

(C) 8

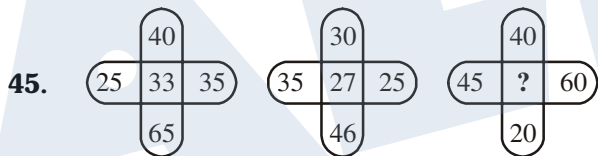
(D) 9

Ans. (D)

Sol. 
$$\left\{ \begin{array}{l} 93 - 27 = 66 \\ 66 - 63 = 3 \end{array} \right.$$

$$\left\{ \begin{array}{l} 79 - 38 = 41 \\ 41 - 37 = 4 \end{array} \right.$$

$$\left\{ \begin{array}{l} 67 - 16 = 51 \\ 51 - 42 = 9 \end{array} \right.$$



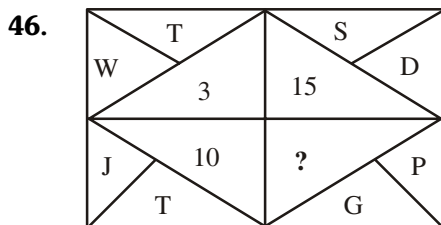
(A) 36

(B) 32

(C) 30

(D) 60

Ans. (NA)



(A) 5

(B) 9

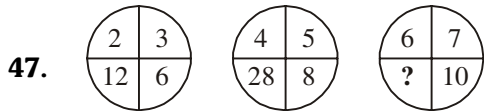
(C) 11

(D) 13

Ans. (B)

Sol.  $\left\{ \begin{array}{l} W \quad T \\ 23 - 20 = 3 \end{array} \right\}$        $\left\{ \begin{array}{l} P \quad G \\ 16 - 7 = 9 \end{array} \right\}$

$\left\{ \begin{array}{l} S \quad D \\ 19 - 4 = 15 \end{array} \right\}$        $\left\{ \begin{array}{l} J \quad T \\ 10 - 20 = 10 \end{array} \right\}$



(A) 38

(B) 44

(C) 52

(D) 40

Ans. (C)

Sol.  $\{2 \times 3 + 6 = 12\}$

$\{4 \times 5 + 8 = 28\}$

$\{6 \times 7 + 10 = 52\}$

48. If '+' means '×', '×' means '-', '÷' means '+', '×' means '÷', then  $175 - 25 \div + 20 \times 3 + 10 = ?$

(A) 77

(B) 160

(C) 240

(D) 2370

Ans. (A)

Sol.  $175 \div 25 + 5 \times 20 - 3 \times 10 = 77$

49. If '+' means '÷', '÷' means '-', '-' means '×', '-' means '+', then  $12 + 6 \div 3 - 2 \times 8 = ?$

(A) -2

(B) 2

(C) 4

(D) 8

Ans. (C)

Sol.  $12 \div 6 - 3 \times 2 + 8 = 4$

**Directions for question number 50 to 51:**

Choose the alternative which closely resembles the water-image of the given combination.

50. VAYU8436

(A) VAYU8436

(B) 6348UAYV

(C) 6348UAYV

(D) 6348UAYV

Ans. (B)

VAYU8436

↓  
6348UAYV

51. ACOUSTIC

(A) ACOUSTIC

(B) ACOUSTIC

(C) ACOUSTIC

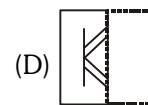
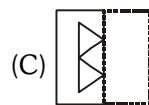
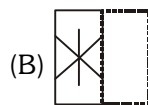
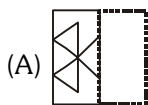
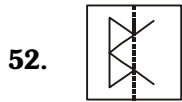
(D) ACOUSTIC

Ans. (B)

Sol. VAYU8436  
 ↓  
 3648UAYV

**Direction for question number 52 to 53:**

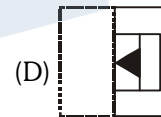
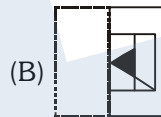
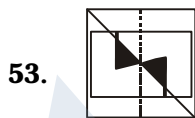
Find out from the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



Ans. (C)

Sol. The right half of the figure has been folded over left half.

Visualising the combination of designs on two parts, we obtain option (C)



Ans. (C)

Sol. The left half of figure has been folded over right half.

Visualising the combination of designs on two parts, we obtain option (C)

**Directions for question number 54 to 56:**

In each of the questions, there are some words translated from an artificial language. study them and answer the attached question.

54. *aptaose*, means first base; *eptose* means second base; *lartabuk* means ballpark. which word could mean “baseball”?

(A) buklarta

(B) oselarta

(C) bukose

(D) osepta

Ans. (B)

Sol. apta → first

ose → base

epta → second

larta → ball

buk → park

55. *Plekapaki* means *fruitcake*; *pakishillen* means *cakewalk*; *treftalan* means *buttercup*.

Which word could mean, “cupcake” ?

- (A) shillenan                      (B) treftpleka                      (C) pakitreft                      (D) alanpaki

Ans. (D)

Sol. pleka → frist  
 paki → cake  
 shillen → walk  
 treft → butter  
 alan → cup

56. *krekinblaf* means *work force*; *dritakrekin*, means *goundwork*; *krekinalti* means *workplace*.

Which word could mean “someplace” ?

- (A) moropalti                      (B) krekindrita                      (C) altiblaf                      (D) dritaalti

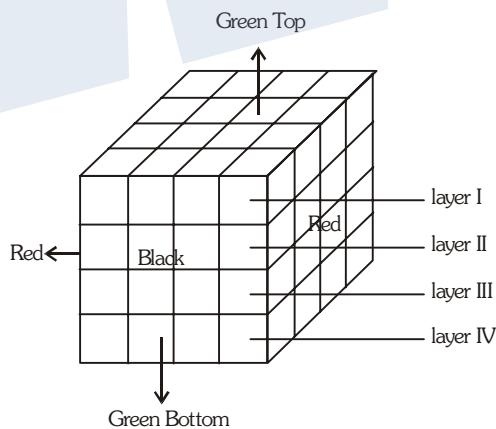
Ans. (A)

Sol. krikin → work  
 blaf → force  
 drita → ground  
 alti → place

Drita means ground, so that rules out option “B” and “D”. Option “C” is not correct because blaf mean force so only possible answer is option “A”.

**Directions for question number 57 to 59 :**

All the opposite faces of a big cube are colored with red, black and green. After that it is cut into 64 small equal cubes, then....



57. How many small cubes are there whose no faces are coloured ?

- (A) 0                      (B) 8                      (C) 16                      (D) 4

Ans. (B)

Sol. Middle 4 cubes in layer II and layer III

$4 + 4 = 8$

58. How many small cubes are there whose 3 faces are coloured ?

- (A) 24 (B) 4 (C) 16 (D) 8

Ans. (D)

Sol. Cube at the coners = 8

59. How many small cubes are there where one face is green and other one is either black or red?

- (A) 28 (B) 8 (C) 16 (D) 24

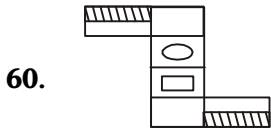
Ans. (C)

Sol. Cubes on edges except corners in layer I and layer IV

$$8 + 8 = 16$$

Directions for question number 60 to 61 :

To which of the cubes in the alternatives can the figure (X) result when folded?

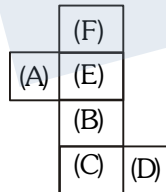


- (A) (B) (C) (D)

Ans. (A)

Sol. The net of dice when folded will results in figure as shown in option A.

61. In which of the cubes can the figure (X) result, when folded?



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

Ans. (B)

Sol.  $A \longleftrightarrow D$

$F \longleftrightarrow B$

$E \longleftrightarrow C$



62. In a certain code  $2 \times 3 = 56$ ,  $5 \times 6 = 1130$ ,  $8 \times 9 = 1772$ , then  $4 \times 1 = ?$

- (A) 54 (B) 45 (C) 55 (D) 44

Ans. (A)

Sol.  $2 \times 3 = 56$

(sum of digits) (product of digits)

$4 \times 1 = 54$

63. In a certain code 'LATE' is written as '\$%#@' and 'WIDE' is written as '\*© Δ@'. The how 'DIAL' will be coded?

- (A) Δ@#\$ (B) Δ@%\$ (C) Δ©%\$ (D) Δ©%#

Ans. (A)

D I A L

Sol.

↓  
Δ © % \$

64. In a certain code language "Always Create New Ideas" is written as 'ba ri sha gi'. 'Ideas and New Thought' is written as 'fa gi na ri'. 'Create Thought and Insight' is written as 'ki ri la fa'.

What is the code for IDEAS ?

- (A) sha (B) be (C) gi (D) na

Ans. (C)

Sol. Ideas → gi

65. In a family, the father took  $\frac{1}{4}$  of the cake and he had 3 times as much as each of the other members had. What is the total number of member in the family ?

- (A) 3 (B) 7 (C) 10 (D) 12

Ans. (C)

Sol. Members →  $(x + 1)$

Fathers share →  $\frac{1}{4}$

Share of each member →  $\frac{3}{4x}$

$$\therefore 3\left(\frac{3}{4x}\right) = \frac{1}{4} \Rightarrow x = 9$$

So total =  $9 + 1 = 10$

66. If 'SCOILAND' is written as '12345678', LOAN is written as '8124' and DAN is written as '537', then what will be the code for 'C' ?

- (A) 6 (B) 9 (C) 5 (D) 4

Ans. (A)

Sol. SCOILAND = 12345678

LOAN = 8124

DAN = 537

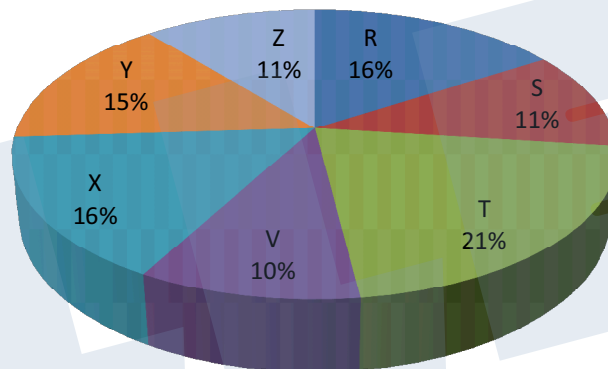
eliminate all possiblites

so remaining no is 6

**Directions for question number 67 to 69 :**

Study the following pie-chart relating to the proportion of population of seven villages and the table relating to % of people below poverty line in each village. Answer the following questions.

Village	% population below poverty line
X	38
Y	52
Z	42
R	51
S	49
T	46
V	58



- 67.** If the population of village R is 32000, then what will be the population of village Y below poverty line ?  
 (A) 15600                      (B) 16500                      (C) 14200                      (D) 18000

**Ans. (a)**

**Sol.**  $16\% = 32000$

$$15\% = \frac{32000}{10} \times 15 = 30,000$$

$$30,000 \times 52\% = 15600$$

- 68.** The ratio of population of village T below poverty line to that of village Z below poverty line  
 (A) 11 : 21                      (B) 23 : 21                      (C) 23 : 11                      (D) 11 : 13

**Ans. (B)**

**Sol.**  $46 : 42 = 23 : 21$

- 69.** Finding the population of village S is the population of village X below poverty line is 12160.  
 (A) 18500                      (B) 20500                      (C) 22000                      (D) 26000

**Ans. (C)**

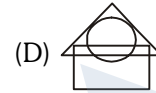
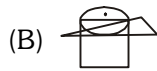
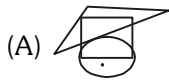
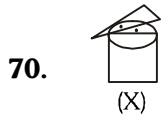
**Sol.** 38% of 16% of  $x = 12160$

$$x = \frac{12160 \times 1000 \times 100}{38 \times 16} = 200000$$

11% of 200000 = 22,000

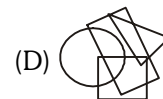
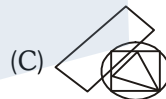
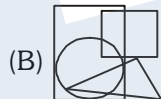
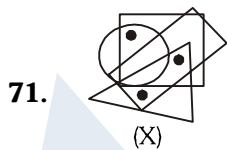
**Directions for question number 70 to 71 :**

Select the figure which satisfies the same conditions of placement of the dots as in figure - (X).



**Ans.** (C)

**Sol.** See the common space

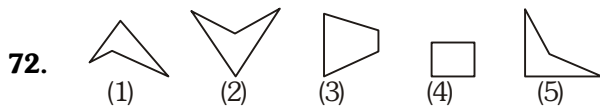


**Ans.** (D)

**Sol.** See the common space

**Directions for question number 72 to 73 :**

Select the alternative which represents three out of the five alternative figures which when fitted into each other would form a complete square.



(A) (1), (2), (4)

(B) (3), (4), (5)

(C) (1), (2), (3)

(D) (1), (3), (5)

**Ans.** (D)



(A) 20

(B) 23

(C) 169

(D) 100

**Ans. (B)**

**Sol.** Let number are x and y

$$xy = 120$$

$$x^2 + y^2 = 289$$

$$\text{so, } (x + y) = 23$$

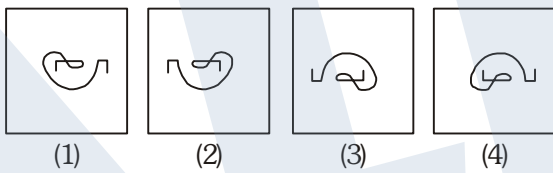
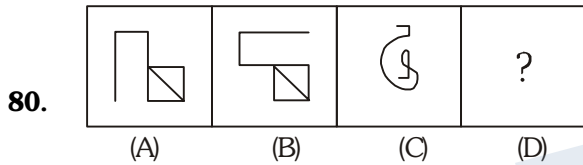
add  $2xy$  on both sides

$$x^2 + y^2 + 2xy = 289 + 2xy$$

$$(x + y)^2 = 289 + 2 \times 120 = 529$$

**Directions for question number 80 to 82 :**

There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from the alternatives that would replace the question mark.



(A) 1

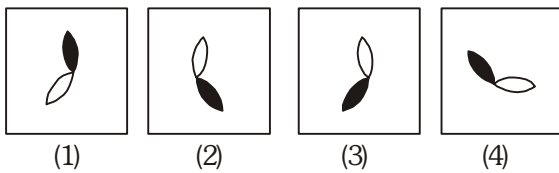
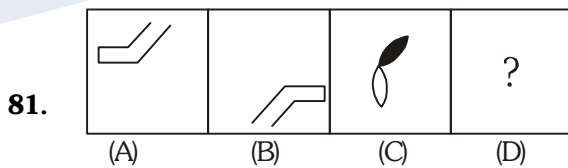
(B) 2

(C) 3

(D) 4

**Ans. (C)**

**Sol.** Fast move  $90^\circ$  clockwise then inverted.



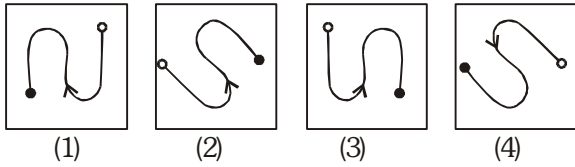
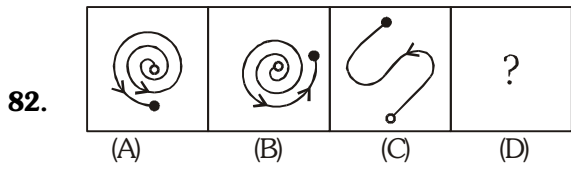
(A) 1

(B) 2

(C) 3

(D) 4

**Ans. (C)**



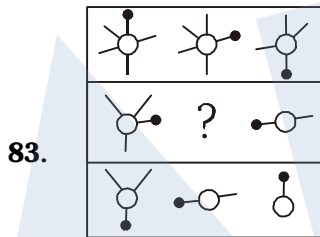
- (A) 1                                      (B) 2                                      (C) 3                                      (D) 4

**Ans. (B)**

**Sol.** Figure rotate  $90^\circ$  anticlockwise and arrow's direction remain same.

**Directions for question number 83 to 85 :**

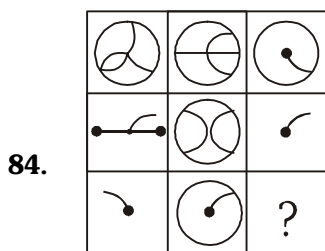
Find out which the answer figure completes the figure matrix ?

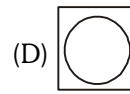
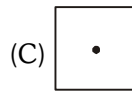
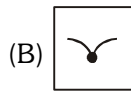
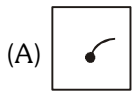


- (A)      (B)
- (C)      (D)

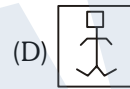
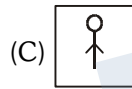
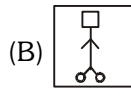
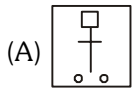
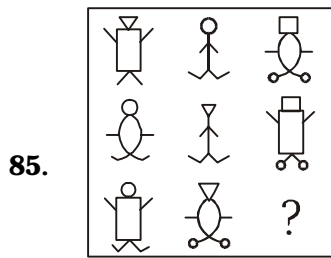
**Ans. (D)**

**Sol.** Line which have a dot rotate  $90^\circ$ .





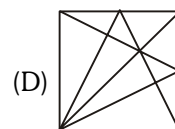
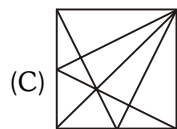
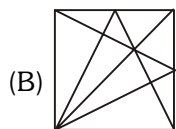
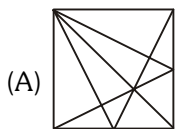
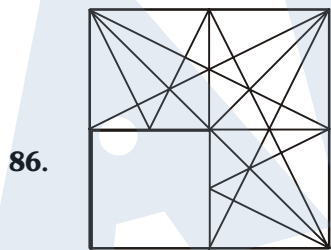
Ans. (C)



Ans. (D)

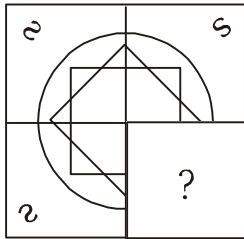
Directions for question number 86 to 88 :

Identify the figure from the alternatives that completes the pattern.

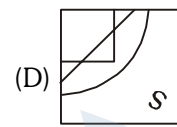
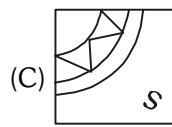
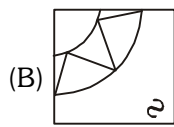
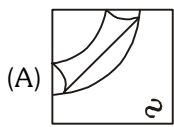


Ans. (D)

87.

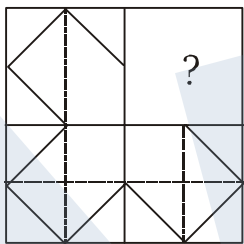


(X)

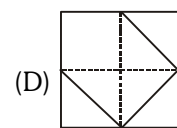
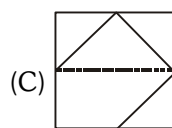
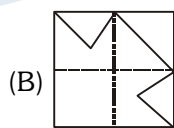
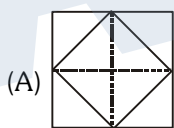


Ans. (D)

88.



(X)



Ans. (C)

Directions for question number 89 to 91 :

Which alternative will replace the question mark ?

89.  $12 - \begin{matrix} 10 \\ \textcircled{4} \\ 9 \end{matrix} - 15$       $12 - \begin{matrix} 16 \\ \textcircled{12} \\ 20 \end{matrix} - 28$       $11 - \begin{matrix} 15 \\ \textcircled{?} \\ 16 \end{matrix} - 23$

(A) 11

(B) 14

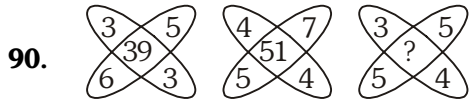
(C) 10

(D) 12

Ans. (A)



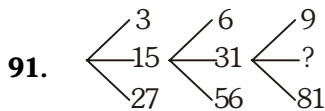
**Sol.**  $(10 + 15) - (12 + 9) = 25 - 21 = 4$   
 $(15 + 23) - (11 + 16) = 14$



- (A) 35 (B) 37 (C) 45 (D) 47

**Ans. (B)**

**Sol.**  $3 \times 3 + 5 \times 6 = 39$   
 $7 \times 5 + 4 \times 4 = 51$   
 $3 \times 4 + 5 \times 5 = 37$



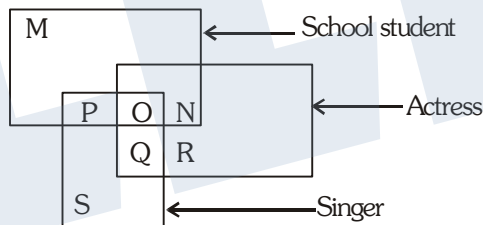
- (A) 45 (B) 41 (C) 32 (D) 40

**Ans. (A)**

**Sol.** Mean of first and 3<sup>rd</sup> is 15

**Directions for question number 92 to 94 :**

Answer the questions by using the following diagram:



92. Which of the following represents those school students who are actress but not singer?  
 (A) M (B) N (C) O (D) R

**Ans. (B)**

**Sol.** Common letter is N.

93. Which of the following represents those actresses who are neither singer nor school students?  
 (A) N (B) P (C) Q (D) R

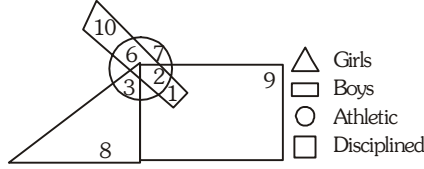
**Ans. (D)**

94. Which of the following represents those school students who are singer but not actress?  
 (A) M (B) N (C) O (D) P

**Ans. (D)**

**Directions for question number 95 to 97 :**

Study the following diagram and answer the given questions.



95. How many girls are both athletic and disciplined?  
 (A) 0 (B) 3 (C) 8 (D) 2

**Ans. (A)**

**Sol.** No common portion.

96. How many boys are neither athletic nor disciplined?  
 (A) 10 (B) 6 (C) 3 (D) 2

**Ans. (A)**

97. How many boys are both athletic and disciplined?  
 (A) 1 (B) 2 (C) 6 (D) 10

**Ans. (B)**

**Directions for question number 98 to 100 :**

Choose the alternative which resembles the mirror image of the given combination.

98. 247596  
 (A) 695742 (B) 965742 (C) 247596 (D) 695742

**Ans. (D)**

**Sol.** Inverted figure.

99. ANS43Q12  
 (A) ANS43Q12 (B) 210342SNA (C) 210342SNA (D) 120342SNA

**Ans. (B)**

**Sol.** Inverted figure.

100. UTZFY6KH  
 (A) HK9YF5TU (B) 965742SNA (C) HK9YF5TU (D) 965742SNA

**Ans. (D)**

**Sol.** Inverted figure.

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