



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

Date: 18/12/2016

Max. Marks: 50

**SOLUTIONS**

Time allowed: 45 mins

1. If  $x + y + z = 0$ , then value of  $\frac{(x+y)(y+z)(z+x)}{xyz} + 11$  is

(1)  $x + 11$

(2)  $y + 11$

(3)  $z + 11$

(4) 10

Ans. (4)

Sol. Given  $(x + y + z) = 0$  \_\_\_\_\_ (i)

From (i)  $(x + y) = -z$ ;  $(y + z) = -x$ ;  $(z + x) = -y$ ;  $(z + x) = -y$  \_\_\_\_\_ (ii)

Now  $\frac{(x+y)(y+z)(z+x)}{xyz} + 11$

Put (ii)  $\frac{(-z)(-x)(-y)}{xyz} + 11$

$\Rightarrow \frac{-xyz}{xyz} + 11 \Rightarrow -1 + 11 \Rightarrow 10$

2. If  $\sin A + \cos A = \sqrt{2} \sin(90^\circ - A)$  then value of  $(\sqrt{2} + 1) \tan A$  will be

(1) 1

(2) 0

(3)  $\sqrt{2}$

(4) 2

Ans. (1)

Sol. Given:  $\sin A + \cos A = \sqrt{2} \cos A$

$\Rightarrow \frac{1}{\sqrt{2}} \sin A + \frac{1}{2} \cos A = \cos A$

$\Rightarrow \sin 45^\circ \sin A + \cos 45^\circ \cos A = \cos A$

$\Rightarrow \cos(45^\circ - A) = \cos A$

$\therefore 45^\circ - A = A$

$\Rightarrow 2A = 45^\circ$

$\Rightarrow A = 22.5$

Now  $(\sqrt{2} + 1) \tan A$

$\Rightarrow (\sqrt{2} + 1) \tan 22.5$

$\Rightarrow (\sqrt{2} + 1) \times \frac{1}{(\sqrt{2} + 1)}$

$\Rightarrow 1$

3. If the point  $(K, 2)$  is equidistant from the point  $(5, -2)$  and  $(1, -2)$  then value of  $K^2 + 7$  will be  
 (1) 10                                      (2) 9                                      (3) 12                                      (4) 16

**Ans. (4)**

**Sol.** From distance formula

$$(K - 5)^2 + (2 + 2)^2 = (K - 1)^2 + (2 + 2)^2$$

$$\Rightarrow (K - 5)^2 = (K - 1)^2$$

$$\Rightarrow K^2 - 10K + 25 = K^2 - 2K + 1$$

$$\Rightarrow 8K = 24$$

$$\Rightarrow K = 3$$

Now,  $K^2 + 7$

$$\Rightarrow (3)^2 + 7$$

$$\Rightarrow 9 + 7$$

$$= 16$$

4. If each side of a cube is increased by 40%, then how much percent its total surface area will be increased.  
 (1) 76                                      (2) 80                                      (3) 96                                      (4) 85

**Ans. (3)**

**Sol.** Let side of cube =  $a$

$$\text{New side of cube } a + \frac{2}{5}a = \frac{7a}{5}$$

$$\text{ATQ } - \frac{6\left(\frac{7a}{5}\right)^2 - 6a^2}{6a^2} \times 100$$

$$\Rightarrow \frac{\frac{294}{25} - 6}{6} \times 100 = 96$$

5. If sum of squares of zeros of a quadratic polynomial  $g(y) = y^2 - 6y + p$  is 10. What will be the value of  $p$ .  
 (1) 13                                      (2) 12                                      (3) 11                                      (4) 10

**Ans. (1)**

**Sol.** Given  $\alpha + \beta = 6$ ;                       $\alpha\beta = p$    &    $\alpha^2 + \beta^2 + 10$

$$\text{Now, } (\alpha + \beta)^2 - 2\alpha\beta = \alpha^2 + \beta^2$$

$$\Rightarrow (6)^2 - 2 \times P = 10$$

$$\Rightarrow 36 - 2P = 10$$

$$\Rightarrow P = 13$$

6. A train cross a pole is 12 seconds. If the speed of the train is 54 km/hr then length of train will be  
 (1) 648 meter                              (2) 150 meter                              (3) 180 meter                              (4) 100 meter

**Ans. (3)**

**Sol.** Length of train =  $54 \times \frac{5}{18} \times 12 = 180$  meter

7. If the sum of the digits of a two digit number is 9 and the difference between the number and that formed by reversing the digits is 45 then number is

- (1) 81                                      (2) 72                                      (3) 45                                      (4) 54

**Ans. (2)**

**Sol.** Let digit of numbers are a & b.

Given  $a + b = 9$                                       \_\_\_\_\_(1)

&  $(10a + b) - (10b + a) = 45$

$\Rightarrow a - b = 5$                                       \_\_\_\_\_(2)

From (1) & (2)                                       $a = 7; b = 2$

Required number =  $ab = 72$

8. How many numbers between 10 and 90 are divisible by 8 completely

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

**Ans. (2)**

**Sol.**  $\frac{90}{8} - \frac{10}{8}$

$\Rightarrow 11 - 1 = 10$

9. Is  $3 = x + \frac{1}{1 + \frac{1}{5 + \frac{1}{3}}}$  Value of x will be

- (1)  $\frac{14}{19}$                                       (2)  $\frac{17}{19}$                                       (3)  $\frac{15}{19}$                                       (4)  $\frac{41}{19}$

**Ans. (4)**

**Sol.** Given  $x + \frac{1}{1 + \frac{1}{5 + \frac{1}{3}}} = 3$

$\Rightarrow x + \frac{1}{1 + \frac{1}{\frac{15+1}{3}}} = 3$

$\Rightarrow x + \frac{1}{1 + \frac{3}{16}} = 3$

$\Rightarrow x + \frac{1}{\frac{16+3}{16}} = 3$

$\Rightarrow x + \frac{16}{19} = 3$

$x = 3 - \frac{16}{19} = \frac{57-16}{19}$

$x = \frac{41}{19}$

10. Simplify  $\frac{x+1}{x-1} + \frac{x-1}{x+1} - \frac{(2x^2-2)}{x^2+1}$

(1)  $\frac{4x^2}{x^4+1}$

(2)  $\frac{8x^2}{x^4-1}$

(3) 1

(4)  $\frac{4x^2+2}{x^4-1}$

Ans. (2)

Sol.  $\frac{(x+1)}{(x-1)} + \frac{x-1}{x+1} - \frac{(2x^2-2)}{(x^2+1)}$

$$\Rightarrow \frac{(x+1)^2(x^2+1) + (x-1)^2(x^2+1) - (x^2-1)(2x^2-2)}{(x^2-1)(x^2+1)}$$

$$\Rightarrow \frac{(x^2+2x+1)(x^2+1) + (x^2-2x+1)(x^2+1) - (x^2-1)(2x^2-2)}{(x^4-1)}$$

$$\Rightarrow \frac{x^4+x^2+2x^3+2x+x^2+1+x^4+x^2-2x^3-2x+x^2+1-2x^4+2x^2+2x^2-2}{x^4-1}$$

$$\Rightarrow \frac{8x^2}{x^4-1}$$

11. Vinod has some cows and some hens in his shed. The total number of legs is 92 and total number of heads is 29. Then the number of hens in his shed is

(1) 14

(2) 12

(3) 17

(4) 21

Ans. (2)

Sol. Given  $C + H = 29$  \_\_\_\_\_ (1)

&  $4C + 2H = 92$  \_\_\_\_\_ (2)

Equation (1) & (2)

$$4C + 2H = 92$$

$$\underline{-2C + 2H = 58}$$

$$2C = 34$$

From (1)  $17 + H = 29 \Rightarrow H = 12$

12. Parth can row 16km downstream and 8km upstream in 6 hours. He can tow 6km upstream and 24m downstream in 6 hours. Find the speed of Parth in still water.

(1) 5 km/hr

(2) 3 km/hr

(3) 6 km/hr

(4) 8 km/hr

Ans. (1)

Sol. Let the speed of parth in still water be x km/hr. and speed of stream be y km/hr.

Then,

$$\text{ATQ, } \Rightarrow \frac{16}{x+y} + \frac{8}{x-y} = 6 \quad \text{_____ (1)}$$

$$\text{and } \frac{24}{x+y} + \frac{6}{x-y} = 6 \quad \text{_____ (2)}$$

from (1) and (2), we get  $x + y = 8$  and  $x - y = 2$

On solving, we get :  $x = 5$  km/hr,  $y = 3$ km/hr

Hence, the speed of parth in still water in 5km/hr.

**13.** Value of  $\left(\log \frac{75}{16} - 2\log \frac{5}{9} + \log \frac{32}{243}\right)$  is

(1)  $\log 3$

(2)  $2 \log 2$

(3)  $\log 5$

(4)  $\log 2$

**Ans. (4)**

**Sol.**  $\log\left(\frac{75}{16}\right) - 2\log\frac{5}{9} + \log\left(\frac{32}{243}\right)$

$$\Rightarrow \log \frac{75}{16} + \log\left(\frac{5}{9}\right)^{-2} + \log\left(\frac{32}{243}\right)$$

$$= \log \frac{75}{16} \times \frac{81}{25} \times \frac{32}{243}$$

$$= \log 2$$

option (4) is correct

**14.** Find the angle between the two hands of a clock at 15 minutes past 4 O'clock (Minute hand and hour hand)

(1)  $35.5^\circ$

(2)  $30^\circ$

(3)  $37.5^\circ$

(4)  $32.5^\circ$

**Ans. (3)**

**Sol.**  $30H - \frac{11}{2} \times \text{min} = \text{Angle}$

$$\Rightarrow 30 \times 4 - \frac{11}{2} \times 15$$

$$\Rightarrow 120 - \frac{165}{2}$$

$$\Rightarrow 120 - 82.5$$

$$\Rightarrow 37.5$$

**15.** If  $3\sqrt{5} + \sqrt{125} = 17.88$  then what will be the value of  $\sqrt{80} + 6\sqrt{5}$

(1) 22.35

(2) 21.66

(3) 20.12

(4) 20.46

**Ans. (1)**

**Sol.**  $3\sqrt{5} + \sqrt{125} = 17.88$

$$\Rightarrow 3\sqrt{5} + 5\sqrt{5} = 17.88$$

$$\Rightarrow 8\sqrt{5} = 17.88$$

$$\Rightarrow \sqrt{5} = \frac{17.88}{8}$$

$$\therefore \sqrt{80} + 6\sqrt{5}$$

$$= 10\sqrt{5}$$

$$= 10 \times \frac{17.8}{8} = 22.35$$

**16.** The traffic signals at four road crossing change every 30 second, I minute, 45 seconds and 75 seconds respectively. If they change simultaneously at 9 : 00 AM, at what time will they change simultaneously again.

- (1) 9 : 12 AM                      (2) 9 : 15 AM                      (3) 9 : 20 AM                      (4) 9 : 30 AM

**Ans. (2)**

**Sol.** LCM of 30 sec., 1 min, 45 sec & 75 sec. = 900 sec.  
= 15 min

So, the traffic signals change in every 15 min.

**17.** If  $A : B = 2 : 3$ ,  $B : C = 2 : 4$  and  $C : D = 2 : 5$  then  $A : D$  is equal to

- (1) 2 : 15                      (2) 2 : 5                      (3) 1 : 5                      (4) 3 : 5

**Ans. (1)**

**Sol.**  $A : B = 2 : 3$ ,  $B : C = 2 : 4$ ,  $C : D = 2 : 5$

$$\text{Now, } \frac{A}{B} \times \frac{C}{D} = \frac{2}{3} \times \frac{2}{5}$$

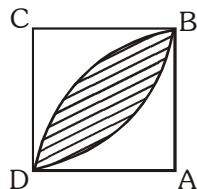
$$\Rightarrow \frac{A}{D} \times \frac{4}{2} = \frac{4}{15}$$

$$\Rightarrow \frac{A}{D} = \frac{2}{15}$$

$$A : D = 2 : 15$$

So, optin (1) is correct.

**18.** In the adjoining figure, ABCD is a square of 7 cm side length.  $\overline{BD}$  is an an arc of a circle of radius AB what is the area of the shaded region.



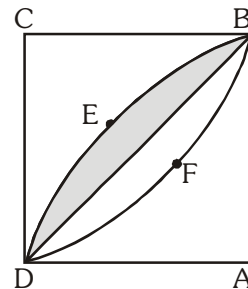
- (1) 28 cm<sup>2</sup>                      (2) 35 cm<sup>2</sup>                      (3) 21 cm<sup>2</sup>                      (4) 14 cm<sup>2</sup>

**Ans. (1)**

**Sol.** Area of shaded region BEDF = 2 (area of ahaded region BEDB)

$$\begin{aligned} \text{Now, ar (BEDB)} &= \text{ar (quad BADE)} - \text{ar } (\Delta BAD) \\ &= 90^\circ (\pi (7)^2) - \frac{1}{2} \times 7 \times 7 \\ &= 360^\circ \\ &= 7^2 \left( \frac{\pi}{4} - \frac{1}{2} \right) \\ &= 14 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \therefore \text{area (shaded reg. BEDF)} &= 2 \times 14 \text{ cm}^2 \\ &= 28 \text{ cm}^2 \end{aligned}$$



**19.** Width of a room is half of its height and height of room is  $\frac{3}{2}$  times of its length. If cost of flooring carpet on floor at the rate of Rs. 4/m<sup>2</sup> is Rs. 432 then what will be height of room.

- (1) 18 m                      (2) 20 m                      (3) 12 m                      (4) 15 m

**Ans. (1)**

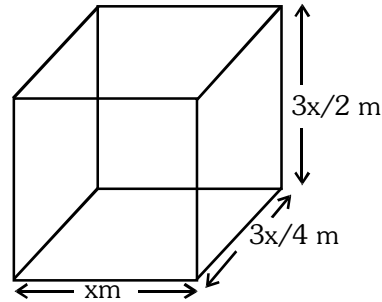
**Sol.** Let 'x' m be the length of a room,  
Then

$$\text{Height of room} = \frac{3x}{2} \text{ m and width} = \frac{3x}{4} \text{ m}$$

$$\begin{aligned} \therefore \text{Area of the floor} &= l \times b \\ &= x \times \frac{3x}{4} \\ &= \frac{3x^2}{4} \text{ m}^2 \end{aligned}$$

Total cost of carpeting the floor = Rs. 432.

$$\begin{aligned} \Rightarrow \frac{3x^2}{4} \times \text{Rs. } 4/\text{m}^2 &= \text{Rs. } 432 \\ &= x = 12\text{m} \\ \Rightarrow 12 \text{ m} \end{aligned}$$



$$\therefore \text{Height of a room} = \frac{3x}{2} = 18\text{m}$$

**20.** Which number in the following will completely divide  $3^{15} + 3^{16} + 3^{17}$ .

- (1) 11                      (2) 14                      (3) 13                      (4) 17

**Ans. (3)**

**Sol.**  $3^{15} + 3^{16} + 3^{17}$   
 $= 3^{15} (1 + 3 + 3^2)$   
 $= 3^{15} (13)$

Hence it will be completely divisible by 13.

**21.** What will be the difference between simple interest and compound interest on sum of Rs 6000 in 2 years at the rate of interest of 5% p.a.

- (1) Rs. 15                      (2) Rs. 20                      (3) Rs. 30                      (4) Rs. 10

**Ans. (1)**

**Sol.** C.I. = A - P

$$= 6000 \left[ \left( 1 + \frac{5}{100} \right)^2 - 1 \right]$$

$$= 6000 \left[ \left( \frac{105}{100} \right)^2 - 1 \right]$$

$$= \text{Rs. } 615$$

$$\text{Also S.I.} = \frac{6000 \times 5 \times 2}{100}$$

$$= \text{Rs. } 600$$

$$\therefore \text{C.I.} - \text{S.I.}$$

$$= 615 - 600$$

$$= \text{Rs. } 15$$

**22.** Value of  $(3.5)^3 - (2.5)^3$  is

- (1) 25.27                      (2) 29.25                      (3) 27.25                      (4) 25.29

**Ans. (3)**

**Sol.**  $(3.5)^3 - (2.5)^3$   
 $= (3.5 - 2.5) [(3.5)^2 + (2.5)^2 + (3.5)(2.5)]$   
 $= 1(12.25 + 6.25 + 8.75)$   
 $= 27.25$

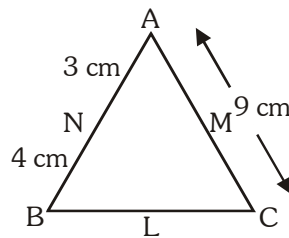
**23.** If  $\sqrt{13 - x\sqrt{10}} = \sqrt{8} + \sqrt{5}$ , then what is the value of x ?

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

**Ans. (4)**

**Sol.**  $\sqrt{13 - x\sqrt{10}} = \sqrt{8} + \sqrt{5}$   
 Squaring both the sides, we get  
 $\Rightarrow 13 - x\sqrt{10} = 8 + 5 + 4\sqrt{10}$   
 On comparing, we get  
 $x = -4$

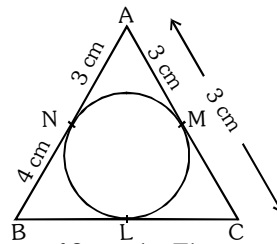
**24.** In the adjoining figure,  $\Delta ABC$  is circumscribing a circle. Then the length of BC is



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

**Ans. (1)**

**Sol.** Here,  $MC = CL = (9 - 3)$  cm  
 $= 6$  cm  
 Also,  $BL = BN = 4$  cm  
 $\therefore BC = BL + LC$   
 $= 4 + 6$   
 $= 10$  cm



**25.** The selling price of 5 articles is the same as the cost price of 3 article. The gain or loss percent is

- (1) 20% gain                      (2) 25% gain                      (3) 40% loss                      (4) 33.33% loss

**Ans. (3)**

**Sol.** Let the C.P. of each article be 'x'.  
 Then, C.P. of 5 article is 5x.  
 and S.P. of 5 articles is 3x.

so, loss % =  $\frac{C.P. - S.P.}{C.P.} \times 100$

$= \left( \frac{5x - 3x}{5x} \right) \times 100$

$= 40\%$



26. If the first half of the English alphabet is reversed and so is the 2<sup>nd</sup> half, then which letter is 7th to the right of the 12th letter from the left side?

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

Ans. (2)

Sol. M L K J I H G F E D C B A Z Y X W V U T S R Q P O N  
 12<sup>TH</sup> LETTER FROM LEFT      ↑      7<sup>TH</sup> LETTER RIGHT OF B

27. If in a certain code language 'THREAT' is written as 'RHTTAE' then how will 'PEARLY' be written in that code?

- (1) YLRAEP (2) YLRPAE (3) AEPYLR (4) AEPRYL

Ans. (3)

Sol. T H R E A T      R H T T A E  
 Reverse

28. What comes in place of question mark '?'

4, 6, 16, 62, 308, ?

- (1) 990 (2) 1721 (3) 698 (4) 1846

Ans. (4)

Sol. 4, 6, 16, 62, 608, 1846  
 $\times 2 - 2$     $\times 3 - 2$     $\times 4 - 2$     $\times 5 - 2$     $\times 6 - 2$

29. In a group of five persons Kamal is the tallest while Leela is the shortest. Rashi is shorter than kamal but taller than Vinita and Priti. Priti is second shortest person in the group. Who is the third tallest ?

- (1) Vinita (2) Rishi (3) Priti (4) Leela

Ans. (1)

Sol. Kamal > Rashi > Vinita > Priti > Leela

30. Which is the following diagram best depicts the relationship between males, Husbands and Doctors ?

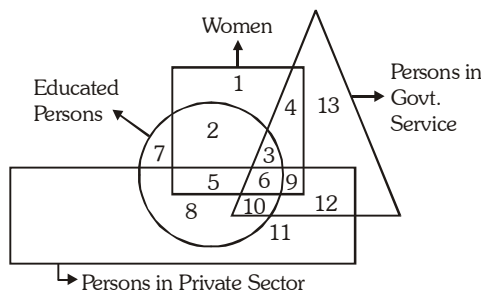


Ans. (1)

Sol. By Observation

Instructions : (for Question 31-33)

In the venn diagram given below, the square represents women, the triangle represents persons who are in Govt. Service, the circle represents educated persons and the rectangle represents person working in private sector. Each section of the diagram is numbered. Study the diagram and answer the following questions.



**31.** Which number represents educated women, who are in Govt. Job ?

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

**Ans. (2)**

**Sol.** By Observation

**32.** Which number represents the uneducated women, who have Govt. Job as well as jobs in private sectors ?

- (1) 6                                      (2) 4                                      (3) 12                                      (4) 9

**Ans. (4)**

**Sol.** By Observation

**33.** Which number represent educated men having private job as well as govt. job ?

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

**Ans. (4)**

**Sol.** By Observation

**34.** Which is the smallest number ?

- (1)  $-7 \div 7 \times 7 + 7$       (2)  $(7 + 7 \times 7) \div 7 - 7$       (3)  $7 - 7 \times 7 \div 7 + 7$       (4)  $7 - (7 \div 7 \times 7 + 7)$

**Ans. (4)**

**Sol.** (1)  $-7 \div 7 \times 7 + 7 = 0$

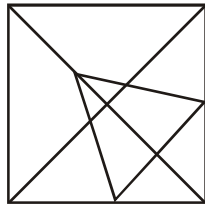
(2)  $(7 + 7 \times 7) \div 7 - 7 = 1$

(3)  $7 - 7 \times 7 \div 7 + 7 = 7$

(4)  $7 - (7 \div 7 \times 7 + 7) = -7$

So, option 4 is the smallest.

**35.** In the given figure, how many triangles are there ?



- (1) 26                                      (2) 16                                      (3) 18                                      (4) 19

**Ans. (4)**

**Sol.** By Observation

**36.** Choose the correct mirror image of the given figure from the alternatives :



- (1) 5297NAC8LD      (2) 2597NAC8LD      (3) 2597NAC8LD      (4) 2597NAC8LD

**Ans. (3)**

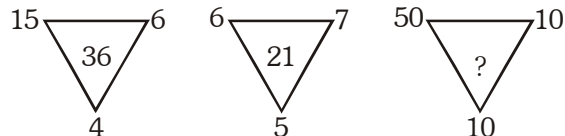
**Sol.** By Observation

**37.**  $\frac{T}{J} : 2 :: \frac{X}{H} : ?$

- (1)  $\frac{3}{7}$                                       (2) 2                                      (3) 3                                      (4) 4

**Ans. (3)**

**Sol.**  $\frac{T}{J} = \frac{20}{10} = 2$ ;       $\frac{X}{H} = \frac{24}{8} = 3$

38. 
- (1) 140                      (2) 220                      (3) 500                      (4) 320

**Ans. (3)**

**Sol.**  $\frac{\text{Multiply all number}}{10}$

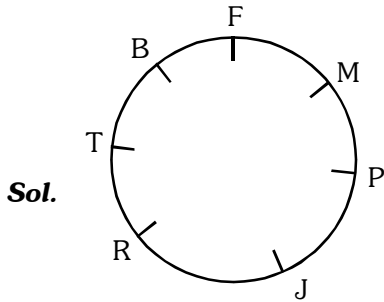
Instruction (Questions 39 - 41)

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

M, P, J, B, R, T and F are sitting around a circle facing the centre. B is the third to the left of J who is second to the left of M. P is third to the left of B and second to the right of R. T is not an immediate neighbour of M

39. Who is fourth to the right of M.  
 (1) B                      (2) T                      (3) J                      (4) M

**Ans. (NA)**



40. Who is second to the left of T.  
 (1) F                      (2) M                      (3) P                      (4) J

**Ans. (1)**

**Sol.** F is second to the left of T.

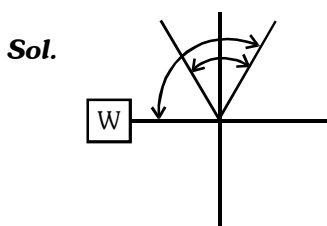
41. What is F's position with respect to R.  
 (A) Third to the left  
 (B) Fourth to the right  
 (C) Third to the right  
 (1) Only A                      (2) Only B                      (3) Only C                      (4) Both A and B

**Ans. (4)**

**Sol.** Both A & B are true.

42. A man is facing North West. If he turns  $90^\circ$  in the clockwise direction and then  $135^\circ$  in the anticlockwise direction. Which direction is he facing now?  
 (1) East                      (2) West                      (3) North                      (4) South

**Ans. (2)**



**43.** If in a certain language 'how can you go' is written as 'Je de ke Pe', 'you come here' is written as 'ne ke se' and 'come and go' as 're pe se', then how will 'here' be written in the language ?

- (1) Je                                      (2) pe                                      (3) me                                      (4) ke

**Ans. (NA)**

**Sol.** By Observation

**44.**

4	5	6
2	3	7
1	8	3
21	98	?

- (1) 85                                      (2) 94                                      (3) 49                                      (4) 104

**Ans. (2)**

**Sol.**  $4^2 + 2^2 + 1^2 = 21$

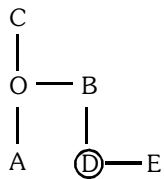
$$6^2 + 7^2 + 3^2 = 94$$

**45.** A's mother is sister of 'B' and daughter of 'C' 'D' is the daughter of B and sister of E. How is 'C' related to E.

- (1) Sister                                      (2) Mother  
(3) Father                                      (4) Grand mother or Grand father

**Ans. (4)**

**Sol.**



Clearly C is grand mother /grand fater

**46.** In a certain code

P stands for +

Q stands for -

R stands for ×

S stands for ÷

Then number corresponding to

6 R 8 S 1 R 3 Q 5 P 7 Q 4 P 2 is

- (1) 144                                      (2) 148                                      (3) 146                                      (4) 116

**Ans. (1)**

**Sol.**  $6 \times 8 \div 1 \times 3 - 5 + 7 - 4 + 2$

$$\Rightarrow 6 \times 8 \times 3 - 5 + 7 - 4 + 2$$

$$\Rightarrow 144 - 5 + 7 - 4 + 2$$

$$\Rightarrow 144$$

**47.** If the first and third digits of each number are interchanged and one is added to the second digit of each number, then which of the following pairs of numbers, will have highest total of their numerical value ?

- (1) 946 and 728                              (2) 728 and 574                              (3) 669 and 946                              (4) 669 and 629

**Ans. (4)**

**Sol.** By observation

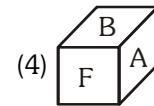
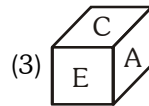
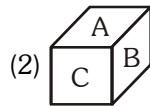
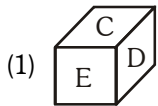
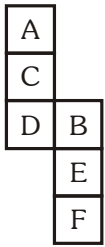
**48.** Looking into a mirror, the clock shows 9 : 30 as the time. The actual time is

- (1) 2 : 30                      (2) 3 : 30                      (3) 4 : 30                      (4) 6 : 30

**Ans. (1)**

**Sol.** By observation

**49.** The sheet of paper shown in the figure is folded to form a box. Choose the correct alternative. Which will truly represent the position of alphabets A to F shown in the following figure

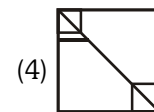
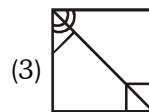
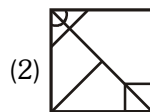
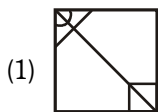
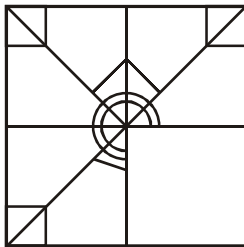


**Ans. (2)**

**Sol.** By observation

**50.** Select the figure from amongst the four alternatives which when placed in the blank space, would complete the pattern.

Problem Figure



**Ans. (3)**

**Sol.** By observation