

Date: 21/02/2021

Max. Marks: 100

**NTSE STAGE-1**

Time allowed: 120 mins

1. Find the odd one out of the following :

(1) 368047

(2) 640837

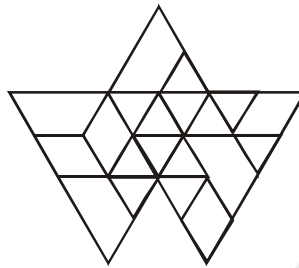
(3) 809467

(4) 308467

Ans. (3)

Sol. Sum of all digits of a number = 28 except option (3)

2. How many RHOMBUS are there in the given figure ?



(1) 16

(2) 17

(3) 18

(4) 19

Ans. (1)

Sol. Total no. of Rhombus = 16

3. In a family, the father took 1/4th of the cake and he had 3 times as much as each of the other members had. What is the total number of members in the family ?

(1) 3

(2) 7

(3) 10

(4) 12

Ans. (3)

Sol. For father = 1/4 cake, So let no. of other member = x

$$\text{A/Q } x \left( \frac{1}{12} \right) = \frac{3}{4} \Rightarrow x = 9$$

Total number = 10

4. If '+' means 'x', 'x' means means '-', '÷' means then '+', '-' means '÷', then  $175 - 25 \div 5 + 20 \times 3 + 10 = ?$

(1) 77

(2) 160

(3) 240

(4) 2370

Ans. (1)

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

5. In a certain code '7496' means 'I am not coming', '4321' means 'She is not coming', '9058' means 'We will be coming', '6051' means 'I will be going'. Which of the following is the code of 'I am not going' ?

(1) 6749

(2) 7491

(3) 6741

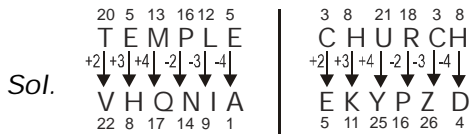
(4) None of these

Ans. (\*)

Sol. BONUS

6. In a certain language 'TEMPLE' is coded as 'VHQNIA'. How would 'CHURCH' be coded in the same language ?  
 (1) EKYWI (2) EKYQZD (3) EKYPZD (4) EKYQWD

Ans. (3)



Direction: (Q. 7-14): In each of the following questions, a number series is given which is according to certain rule, what is the correct answer for the place of sign of interrogation out of given alternatives.

7. In the series 2, 6, 18, 54, ..... What will be the 8th term ?

- (1) 4370 (2) 4374 (3) 7443 (4) 7434

Ans. (2)

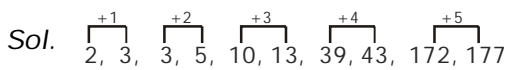
Sol. 2, 6, 18, 54,.....

$$t_8 = 2(3)^{8-1} = 2(3)^7 = 4374$$

8. 2, 3, 3, 5, 10, 13, ?, 43, 172, 177

- (1) 23 (2) 38 (3) 39 (4) 40

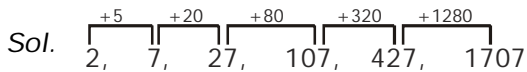
Ans. (3)



9. 2, 7, 27, 107, 427, ?

- (1) 1262 (2) 1707 (3) 4027 (4) 4207

Ans. (2)

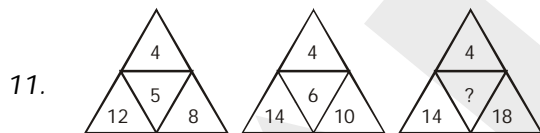


10. 2, 2, 5, 13, 28, ?

- (1) 49 (2) 50 (3) 51 (4) 52

Ans. (4)

Sol.  $2 + (1^2 - 1) = 2$ ,  $2 + (2^2 - 1) = 5$ ,  $5 + (3^2 - 1) = 13$   
 $13 + (4^2 - 1) = 28$ ,  $28 + (5^2 - 1) = 52$



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

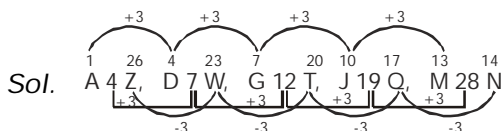
Ans. (2)

Sol.  $(14 + 18) \div 4 = 8$ .

12. A4Z, D7W, ?, J19Q, M28N

- (1) E9U (2) G12T (3) H12S (4) F11V

Ans. (2)



13. 4, 13, 31, 67, ?, 283  
 (1) 139 (2) 103 (3) 121 (4) 169

Ans. (1)

Sol. 
$$\begin{array}{cccccc} 4, & 13, & 31, & 67, & 139, & 283 \\ \hline & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} \\ & 4 \times 2 + 5 & 13 \times 2 + 5 & 31 \times 2 + 5 & 67 \times 2 + 5 & 139 \times 2 + 5 \end{array}$$

14. 3, 12, 27, 48, 75, 108, ?  
 (1) 192 (2) 163 (3) 147 (4) 99

Ans. (3)

Sol. 
$$3 \xrightarrow{+9} 12 \xrightarrow{+15} 27 \xrightarrow{+21} 48 \xrightarrow{+27} 75 \xrightarrow{+33} 108 \xrightarrow{+39} 147$$
  

$$\begin{array}{cccccc} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} \\ & +6 & +6 & +6 & +6 & +6 \end{array}$$

Direction : (Q. 15 to 22) : In the given figures some rule is followed. Identify the rule and choose correct answer for the place of interrogation?

15. Which one will replace the question mark ?

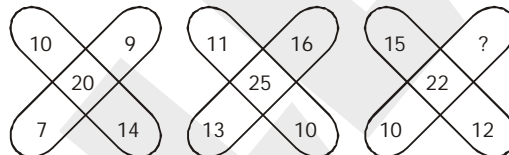
18	24	32
12	14	16
3	?	4
72	112	128

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

Ans. (2)

Sol. 
$$\frac{24 \times 14}{112} = 3$$

16. Which one will replace the question mark ?



- (1) 8 (2) 9 (3) 7 (4) 16

Ans. (3)

Sol. 
$$(15 + 10 + 12 + x) \div 2 = 22 \Rightarrow x = 7$$

17. Which one will replace the question mark ?

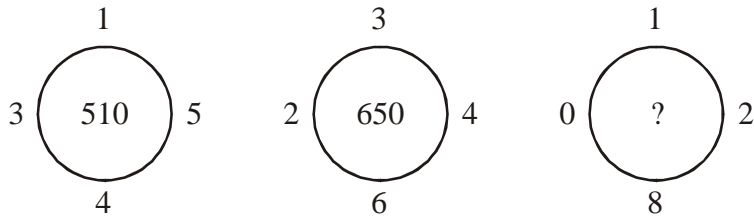
5			
32	?	44	7
6			

- (1) 33 (2) 38 (3) 32 (4) 37

Ans. (4)

Sol. 
$$(6 \times 5) + 2 = 32 ; (5 \times 7) + 2 = 37 ; (7 \times 6) + 2 = 44$$

18. Which one will replace the question mark ?

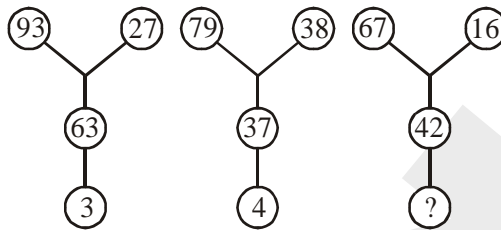


- (1) 660                      (2) 670                      (3) 610                      (4) 690

Ans. (4)

Sol.  $(0^2 + 1^2 + 2^2 + 8^2) \times 10 = 69 \times 10 = 690$

19. Which one will replace the question mark ?



- (1) 5                      (2) 6                      (3) 8                      (4) 9

Ans. (4)

Sol.  $67 - (16 + x) = 42 \Rightarrow x = 9$

20. Which one will replace the question mark ?

4	9	2
3	5	7
8	1	?

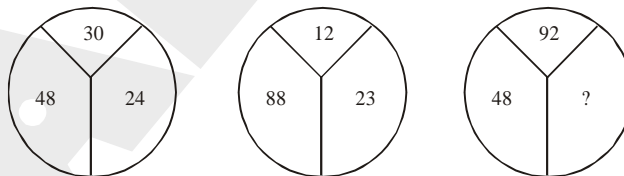
- (1) 9                      (2) 6                      (3) 15                      (4) 14

Ans. (2)

Sol.  $(2 + 7 + x) = 15 \Rightarrow x = 6$

(sum all numbers in column is equal to 15)

21. Which one will replace the question mark ?

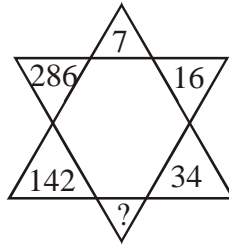


- (1) 60                      (2) 46                      (3) 86                      (4) 75

Ans. (3)

Sol.  $(92 - x) \times 8 = 48$                        $(30 - 24) \times 8 = 48$   
 $\Rightarrow x = 86$                        $(23 - 12) \times 8 = 88$

22. Which one will replace the question mark ?



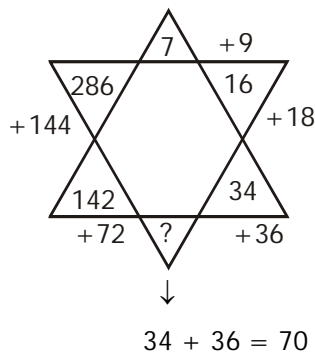
(1) 72

(2) 70

(3) 68

(4) 66

Ans. (2)



Sol.

Direction (Q.23-25) : Identify the rule and choose the right answer.

23. CEMENT : jkwjzra :: MATURE : ?

(1) wlpcrj

(2) wlphmk

(3) temcrj

(4) zncpox

Ans. (\*)

Sol. Bonus

24. TM7, YP42, CT79, ?

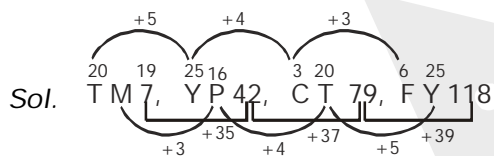
(1) EW112

(2) DX110

(3) FY118

(4) BY113

Ans. (3)



25. If RECRUIT :  $\text{BECBUIJ}$  then AIM3b : ?

(1)  $\text{VJW3P}$

(2)  $\text{VJW3P}$

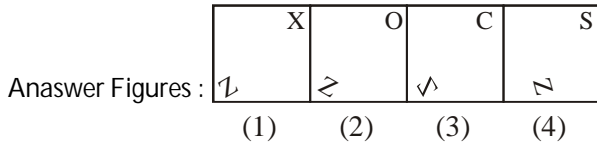
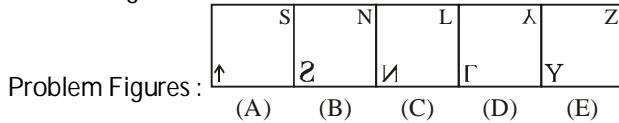
(3)  $\text{VJW3P}$

(4)  $\text{VJW3P}$

Ans. (3)

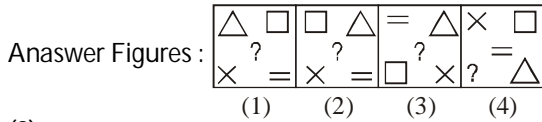
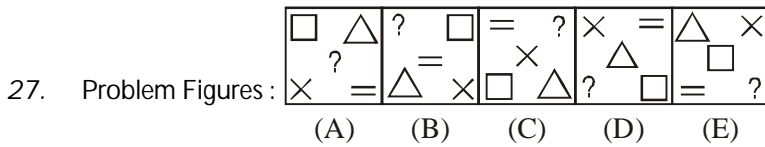
Sol. Water image

26. Select a figure from amongst the Answer Figures which will continue the same series as established by the live Problem Figures.



Ans. (3)

Sol. ∴ The symbol at top right is water reflected in next one.

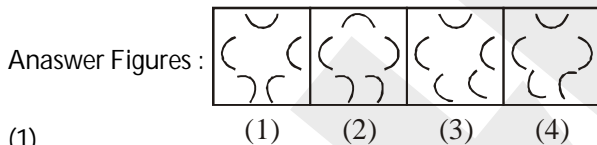
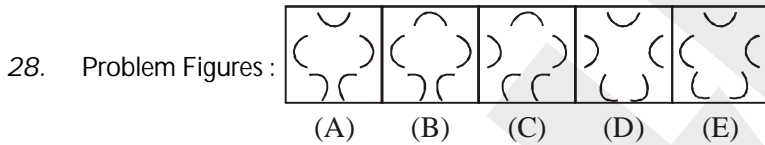


Ans. (2)

Sol. ∴ The symbol follow

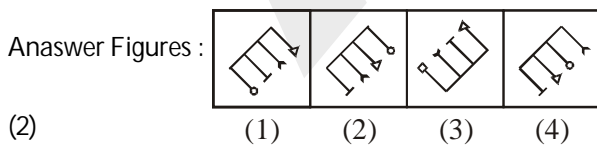
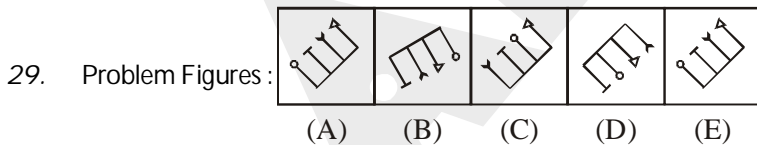
1	2
4	5

3 → 1 → 2 → 4 → 5 → 3 ....



Ans. (1)


Sol. ACW movement of arcs, in series 1, 2, 3, 1, 2, 3, .....



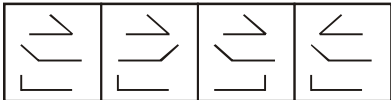
Ans. (2)

Sol. ∴ follows 3, 1, 3, 1, 3 .... and Δ follow 1, 3, 1, 3, 1 .....

So in the series - should be on 1 and Δ on 3

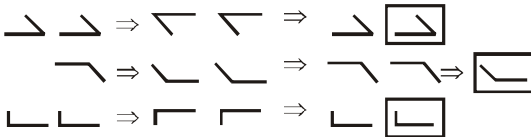
30. Problem Figures : 

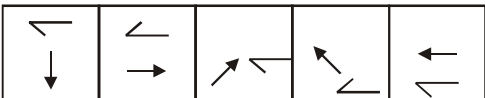
(A) (B) (C) (D) (E)

Answer Figures : 

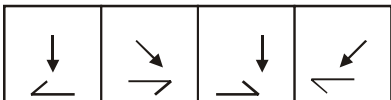
(1) (2) (3) (4)

Ans. (1)

Sol.  $\Rightarrow$  

31. Problem Figures : 

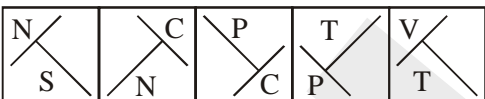
(A) (B) (C) (D) (E)

Answer Figures : 


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

Ans. (1)

Sol.  $\Rightarrow$  moves  $45^\circ$  and water reflect. Only correct seq. is (1)

32. Problem Figures : 


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

Answer Figures : 


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

Ans. (4)

Sol. The 'T' rotates by  $90^\circ$  every time. Only option (4)

33. Problem Figures : 

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

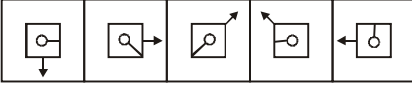
Answer Figures : 

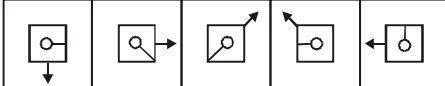
(1) (2) (3) (4)

Ans. (3)

Sol. Brickets are filpping in pattern 1, 4, 1, 4, 1

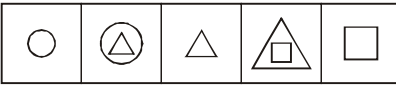
So lass one will flip once

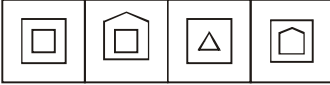
34. Problem Figures :   
 (A) (B) (C) (D) (E)

Answer Figures :   
 (1) (2) (3) (4) (5)

Ans. (A)


Sol. The black arrow rotates in the ACW direction with rotation of  $90^\circ, 45^\circ, 90^\circ, 45^\circ \dots$


35. Problem Figures :   
 (A) (B) (C) (D) (E)

Answer Figures :   
 (1) (2) (3) (4)

Ans. (4)


Sol. The polygon with  $n$  sides is outside and  $n-1$  is inside.

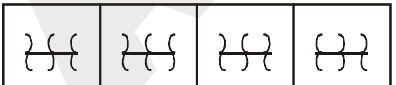
36. Problem Figures :   
 (A) (B) (C) (D) (E)

Answer Figures :   
 (1) (2) (3) (4)

Ans. (3)

Sol. The figure in the middle i.e. '—' moves by  $90^\circ$  every time and one corner stick moves to the other end.

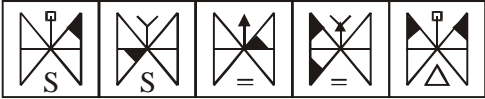
37. Problem Figures :   
 (A) (B) (C) (D) (E)

Answer Figures :   
 (1) (2) (3) (4)

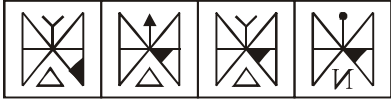
Ans. (3)

Sol.  $\therefore$  The new bracket is opposite to last added and the brackets move right and up.



38. Problem Figures : 

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

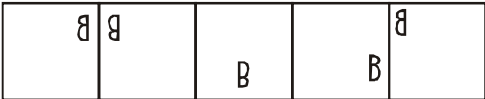
Answer Figures : 

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


Ans. (3)

Sol.  $S \rightarrow S \rightarrow = \rightarrow = \rightarrow \Delta \rightarrow \Delta \dots$

Shaded part  $\rightarrow$  out  $\rightarrow$  in  $\rightarrow$  in  $\rightarrow$  out  $\rightarrow$  out  $\rightarrow$  in  $\rightarrow$  in

39. Problem Figures : 

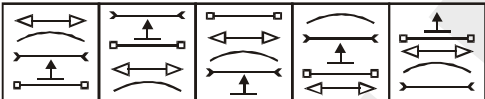
(A) (B) (C) (D) (E)

Answer Figures : 

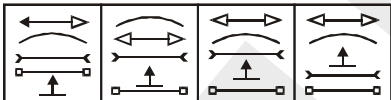
(1) (2) (3) (4)

Ans. (1)

Sol. B makes mirror image after two turns, and moves in form  $90^\circ, 135^\circ, 90^\circ \dots$

40. Problem Figures : 

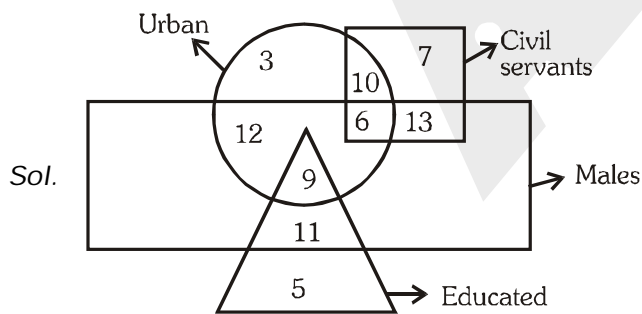
(A) (B) (C) (D) (E)

Answer Figures : 

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

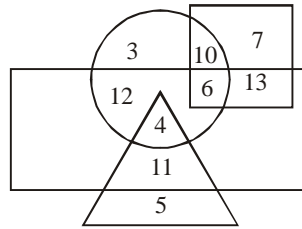
Ans. (3)

Sol. First two go to last and last three shift vp.



Directions (Q.41 to 45) : The following questions are based on the diagram given below :

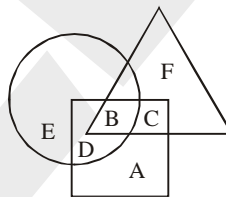
1. Rectangle represents males
2. Triangle represents educated
3. Circle represents urban
4. Square represents civil servants



41. Which number represents an educated male who is not an urban resident ?  
 (1) 4 (2) 5 (3) 9 (4) 11
42. Which number represents a person who is neither a civil servant nor educated but is urban and not a male ?  
 (1) 2 (2) 3 (3) 6 (4) 10
43. Which number represents a female, urban resident and also a civil servant ?  
 (1) 6 (2) 1 (3) 10 (4) 13
44. Which number represents only a civil servant but not a male nor urban oriented and uneducated ?  
 (1) 7 (2) 8 (3) 9 (4) 14
45. Which number represents a male, urban oriented and also a civil servant but not educated ?  
 (1) 13 (2) 12 (3) 6 (4) 10

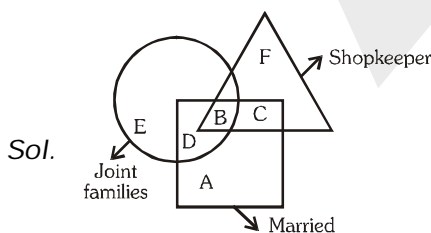
Ans. (3)

Directions (Q.No. 46-48) : In the given diagram below, three classes of population are represented by three geometrical figures. The triangle represents shopkeeper, the square represented the married persons and the circle represents the persons living in joint families.



46. Married persons living in joint families but not working as shopkeeper are represented by  
 (1) F (2) C (3) D (4) A

Ans. (3)



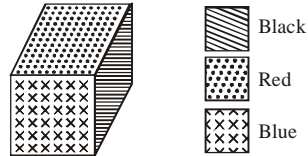
47. The persons who live in joint families are unmarried and do not work as shopkeepers, are represented by  
 (1) E (2) D (3) B (4) C

Ans. (1)

48. Married shopkeepers living in joint families are represented by  
 (1) A (2) B (3) C (4) D

Ans. (2)

*Directions (Q.49-51) :* A solid cube of each side 4 cms, has been painted red, blue and black on pairs of opposite faces. It is then cut into cubical blocks of each side 1 cms.



49. How many times the solid cube had been cut to get cubical blocks of each side 1 cm ?  
 (1) 3 times (2) 4 times (3) 6 times (4) 8 times

Ans. (3)

50. How many cubes have only one face painted ?  
 (1) 24 (2) 16 (3) 10 (4) 8

Ans. (1)

51. How many cubes have three faces painted ?  
 (1) 8 (2) 12 (3) 16 (4) 20

Ans. (1)

52. If A is 1, B is 2 and so on, then select the combination that forms a meaningful word.  
 (1) 2, 7, 8, 6, 4, 3, 1, 5 (2) 4, 7, 5, 2, 6, 8, 1, 3 (3) 7, 1, 8, 5, 6, 2, 4, 3 (4) 5, 3, 7, 1, 6, 4, 8, 2

Ans. (Bonus)

53. Unscramble the word in the question and find the option most similar in meaning to the rearranged/unscrambled meaningful word.

ITGNDLEI

- (1) Intelligent (2) Difficult (3) Laborious (4) Quick

Ans. (3)

Sol. I T G N D L E I :- D I L I G E N T

Similar word of D I L I G E N T → Laborious

54. If each vowel in OVEN is changed to the previous letters in English alphabets and the consonants are changed to next letters of English alphabets, how many meaningful words can be formed using the letters of new word thus formed using each letter only once ?

- (1) One (2) Two (3) Three (4) None

Ans. (1)

Sol. O V E N

↓ -1 ↓ +1 ↓ -1 ↓ +1

N W D O

Word can be formed = D O W N

only one word is formed.

55. Arrange the words given below in a meaningful sequence :
- (a) Poverty                      (b) Population                      (c) Death                      (d) Unemployment  
 (e) Disease
- (1) b, c, d, e, a                      (2) c, d, b, e, a                      (3) b, d, a, e, c                      (4) a, b, c, d, e

Ans. (3)

Sol. Population – Unemployment – Poverty – Disease – Death

b                      d                      a                      e                      c

56. Arrange these letters of each group to make a meaningful word and then find the odd one out.

(1) ORFU                      (2) VIDEID                      (3) GHIET                      (4) VEENS

Ans. (2)

Sol. O R F U → F O U R

G H I E T → E I G H T

V E E N S → S E V E N

But V I D E I D is odd one.

57. In a row of girls Shobha and Geetha occupy 9th place from the right end and 10th place from the left end respectively. If they interchange their place, Shobha and Geetha occupy 17th place from the right and 18th places from the left respectively. How many girls are there in the row ?

(1) 26                      (2) 25                      (3) 27                      (4) 28

Ans. (1)

Sol. Place of shobha from Right = 9

also place of geetha from left = 18

∴ Total = 18 + 9 – 1 = 26

58. A paper of rectangular shape is cut into two halves. The two pieces are put together one above the other and again cut into halves. How many pieces will be there after 9 cuttings ?

(1) 256                      (2) 512                      (3) 258                      (4) 1024

Ans. (2)

Sol. In 1<sup>st</sup> cut → 2 Parts

2<sup>nd</sup> cut → 4 Parts

3<sup>rd</sup> cut → 8 Parts

∴ Pattern will be = 2<sup>n</sup>

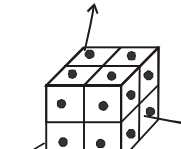
where n = 9

∴ 2<sup>n</sup> = 512

59. A cube is painted on all sides. Three adjacent sides are painted red. Two of the remaining sides are painted green and one is painted yellow. The cube is then cut into eight small cubes. How many cubes are painted red on one side ?

(1) 4                      (2) 3                      (3) 8                      (4) 2

Ans. (2)

Sol.  These 3 cubes are painted red on one side.

60. The Independence day of India was celebrated on Friday in 2014. On which day will it be celebrated in 2022 ?  
 (1) Wednesday (2) Monday (3) Friday (4) Saturday

Ans. (2) Monday

15 Aug 2014 → Friday

15 Aug 2022 → ?

Difference = 8 years = 2 leap year + 6 non leap years

odd days =  $(2 \times 2) + 6$

Total odd days = 3

∴ Friday + 3 days = Monday

61. Kiran and Sanju practice swimming. Kiran practices in the morning and noon on the alternate day starting from Monday. Sanju practices in the morning on Sunday and Thursday and in the noon on Saturday and Sunday. On how many days in a particular month of 30 days starting on Tuesday, Kiran and Sanju would meet each other.

- (1) 2 (2) 4 (3) 5 (4) None of these

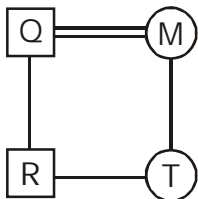
Ans. (Bonus)

62. A \$ B means A is the father of B; A # B means A is the sister of B; A \* B means A is the daughter of B and A @ B means A is the brother of B. Which of the following indicates that M is the wife of Q ?

1. Q \$ R # T @ M      2. Q \$ R @ T # M      3. Q \$ R \* T # M      4. Q \$ R @ T \* M

Ans. (4)

Q \$ R @ T \* M



→ Male

→ Female

Where  ————— → Brother/Sister

————— → Son/Daughter

= = = = = → Husband/Wife

Directions (Q.No. 63 to 68) : Refer to the following information and answer the questions that follow : A landlord owns a two story apartment complex. The complex has four adjacent ground floor apartments numbered 111, 112, 113 and 114 respectively and four upstairs apartments numbered 211, 212, 213 and 214 such that 211 is directly above 111, 212 directly above 112 and so on. The landlord keeps one apartment empty where he stays when he visits town and rents out six others as :

- Nand lives in 114
- Hari won't live in 214 and kim won't live next to Lalit on the same floor
- Inder lived directly above Jai
- Until 112 is being renovated and can't be rented.

63. If Kim rents 213, then which apartment must Lalit rent ?

- (1) 211                                      (2) 212                                      (3) 113                                      (4) 111

Ans. (3)

	I		K	
	211	212	213	214
Sol.	111	112	113	114
	J	X	L	N

∴ kim and lalit are not neighbour on same floor so lalit must rent 113.

64. If Hari rents 111 and Jai rents 113, then which of the following cannot happen.

- (1) 211 is empty                              (2) 212 is empty                              (3) 214 is empty                              (4) Kim lives in 211.

Ans. (3)

		I		
	211	212	213	214
Sol.	111	112	113	114
	H	X	J	N

∴ 214 is empty

65. Which two tenants live in the same floor ?

- (1) Inder and Lalit                              (2) Nand and Jai                              (3) Hari and Jai                              (4) Nand and Kim

Ans. (2)

		I		
	211	212	213	214
Sol.	111	112	113	114
		X		N

∴ Nand and jai are on same floor



66. Which of the following cannot be true if Hari lives next to Nand ?

- (1) Kim lives in 212                              (2) Kim lives in 213                              (3) Lalit lives in 214                              (4) Lalit lives in 212

Ans. (2)

		I		
	211	212	213	214
Sol.	111	112	113	114
	J	X	H	N

∴ kim can not live in 213.

67. If Inder insists on living next to Hari, then where must Hari live ?

- (1) 211                                      (2) 212                                      (3) 213                                      (4) 214

Ans. (2)

		H	I	
	211	212	213	214
Sol.	111	112	113	114
		X	J	N

∴ Hari lives in 212.

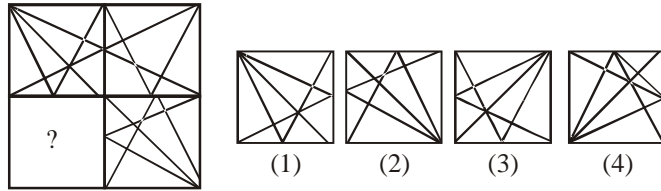
68. If Lalit lives in 213. and Nand moves to be in the apartment that was being renovated, then which must be true ?  
 (1) Hari lives in 113 or 212 (2) Kim lives in 211 or 113 (3) Kim lives in 113 (4) Inder lives in 211 or 214

Ans. (3)

	I		L	
	211	212	213	214
Sol.	111	112	113	114
	J	N	K	X

∴ Kim lives in 113

69. Identify the figure that completes the pattern :



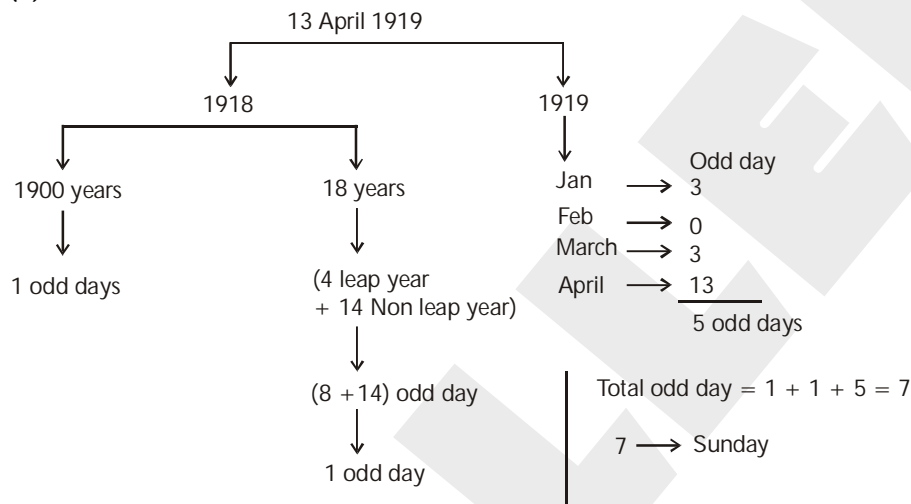
- (1) 1 (2) 2 (3) 3 (4) 4

Ans. (2)

70. What was the day on 13th April, 1919 ?

- (1) Monday (2) Tuesday (3) Sunday (4) Friday

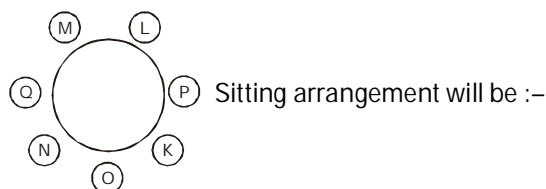
Ans. (3)



Sol.

Directions (Q. 71 to 75) : Read the following information carefully and answer these questions :

- (i) K, L, M, N, O, P and Q are sitting in a circle facing towards the centre and playing cards.  
 (ii) O is neighbour of K and N.  
 (iii) Q is not between P and M.  
 (iv) P is to the immediate right of K.  
 (v) L is second to the left of Q.



71. Which of the following does not have the pair of persons sitting adjacent to each other ?

- (1) LK (2) ML (3) NO (4) QN

Ans. (1)

72. Which of the following pairs has the second person sitting immediately to the right of the first ?

- (1) KL (2) ML (3) OK (4) None of these

Ans. (3)

73. What is the position of P ?

- (1) second to the left of M (2) second of the right of M  
(3) to the immediate left of K (4) to the immediate right of L

Ans. (1)

74. Who are the neighbours of L ?

- (1) K and P (2) M and N (3) P and M (4) None of these

Ans. (3)

75. Which of the following persons are sitting adjacent to each other in clockwise order as shown ?

- (1) LQM (2) PLM (3) MNQ (4) ONQ

Ans. (4)

**Directions (Q. 76 to 78):** In these questions, some symbols have been used for some mathematical operations as indicated below :

'x' for greater than, '©' for not less than, '÷' for not equal to, 'φ' for equal to, '+' for not greater than, 'Δ' for less than. Using these symbols, choose the correct alternatives in each of the following questions :

76. If  $a \text{ © } b \times d$ , it implies that

- (1)  $a \text{ © } b \phi d$  (2)  $a \Delta b \text{ © } d$  (3)  $a \times d + b$  (4)  $d \times b \times a$

Ans. (3)

Sol.  $a \text{ © } b \times d \Rightarrow a \not\lessdot b > d$

(1)  $a \text{ © } b \phi d \Rightarrow a \not\lessdot b = d$

(2)  $a \Delta b \text{ © } d \Rightarrow a < b \not\lessdot d$

(3)  $a \times d + b \Rightarrow a > d \not\lessdot b$

(4)  $d \times b \times a \Rightarrow d > b > a$

Hence  $a \not\lessdot b > d$  implies that  $a \geq b > d$  which satisfies the option (3).

77. If  $a \times b \Delta d$ , it follows that

- (1)  $d + b \text{ © } a$  (2)  $a \text{ © } b + d$  (3)  $b \text{ © } a \times d$  (4)  $a \phi d \Delta b$

Ans. (2)

Sol.  $a \times b \Delta d \Rightarrow a > b < d$

(1)  $d + b \text{ © } a \Rightarrow d \not\lessdot b \not\lessdot a$

(2)  $a \text{ © } b + d \Rightarrow a \not\lessdot b \not\lessdot d$

(3)  $b \text{ © } a \times b \Rightarrow b \not\lessdot a > d$

(4)  $a \phi d \Delta b \Rightarrow a = d < b$

Hence,  $a > b < d$  implies that  $a \not\lessdot b \not\lessdot d$  which is option (2).



78. If  $a \Delta b \Delta d$ , it does not imply that

- (1)  $a \times d \times b$                       (2)  $a \Delta d \times b$                       (3)  $d \times b \times a$                       (4)  $b \times a \Delta d$

Ans. (1)

Sol.  $a \Delta b \Delta d \Rightarrow a < b < d$

(1)  $a \times d \times b \Rightarrow a > d > b$

(2)  $a \Delta d \times b \Rightarrow a < d > b$

(3)  $d \times b \times a \Rightarrow d > b > a$

(4)  $b \times a \Delta d \Rightarrow b > a < d$

Hence,  $a < b < d$  does not imply that  $a > d > b$  which is option (1).

79. A watch which gains 5 seconds in 3 minutes was set right at 7 a.m. In the afternoon of the same day, when the watch indicated quarter past 4 O'clock, the true time is

- (1)  $59\frac{7}{12}$  min past 30                      (2) 4 p.m.                      (3)  $58\frac{7}{11}$  min. past 3                      (4)  $2\frac{3}{11}$  min. past 4

Ans. (2)

Sol. Time from 7 a.m. to quarter past 4 O'clock = 9 hours 15 min.

$$= ((9 \times 60) + 15) \text{ min}$$

$$= (540 + 15) \text{ min}$$

$$= 555 \text{ min.}$$

The watch gains 5 seconds in 3 minutes

i.e. time shown by faulty clock in 3 minutes =  $3 + \frac{5}{60} = \frac{37}{12}$  min

i.e. Actual time when faulty clock shows  $\frac{37}{12}$  min = 3 min.

$$\Rightarrow \text{Actual time when faulty clock shows 555 min} = \frac{3}{37} \times 12 \times 555 = 540 \text{ min} = 9 \text{ hrs.}$$

Hence, the true time = 4 p.m.

80. At what time between 4 and 5 O'clock will the hands of a watch point in opposite directions ?

- (1) 45 min past 4                      (2) 40 min past 4                      (3)  $50\frac{4}{11}$  min. past 4                      (4)  $54\frac{6}{11}$  min. past 4

Ans. (4)

Sol. At 4 O'clock, the hands of the watch are 20 minutes spaces apart.

To be in opposite direction, they must be 30 min. spaces apart.

$\therefore$  the minute hand will have to gain 50 min. spaces.

Now, 55 min. spaces are gained in 60 min.

$$\therefore 50 \text{ min spaces are gained in } \frac{60}{55} \times 50 \text{ min} = \frac{600}{11} \text{ min} = 54\frac{6}{11} \text{ min}$$

$$\Rightarrow \text{Required time} = 54\frac{6}{11} \text{ min. past 4.}$$

81. An accurate clock shows 8 O'clock in the morning. Through how many degrees will the hour hand rotate when the clock shows 2 O'clock in the afternoon ?

- (1) 144°                      (2) 150°                      (3) 168°                      (4) 180°

Ans. (4)

Sol. Angle traced by the hour hand in 6 hours  $\left(\frac{360}{12} \times 6\right) = 180^\circ$

82. Integer y on dividing by 3 leaves remainder 2, on dividing by 5 leaves remainder 3 and on dividing by 7 leaves remainder 5. What could be the minimum value of the integer y from the following options ?

- (1) 36                      (2) 68                      (3) 136                      (4) 56

Ans. (2)

Sol. Option (1) is not possible as 36 is completely divisible by 3.

Option (3) is not possible as 136 leaves remainder 1 when divided by 5 & option (4) is also not possible as 56 leaves remainder 1 when divided by 5.

Option (2) is possible as 68 leaves remainder 2 when divided by 3, leaves remainder 3 when divided by 5 & leaves remainder 5 when divided by 7.

83. Among five friends, Malkeet is older than Ravi but not as old as Lakhbeer. Lakhbeer is older than Nirmal and Karamjit. Nirmal is younger than Ravi but not the youngest. Who is the oldest in age ?

- (1) Malkeet                      (2) Ravi                      (3) Nirmal                      (4) Lakhbeer

Ans. (4)

Sol. Correct figure is :

Lakhbeer

|

Malkeet

|

Ravi

|

Nirmal

|

Karamjit

Hence, Lakhbeer is oldest in age.

84. If the first half of the English alphabet is reversed and then next portion of English alphabet is reversed so as 'A' takes the position of 'M' and 'N' takes the position of 'Z' then which letter will be 6th to the left of 17th letter to the right of 7th letter from the left ?

- (1) U                      (2) V                      (3) C                      (4) D

Ans. (2)

Sol. The new sequence becomes :

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

Now, 7<sup>th</sup> letter from left is G

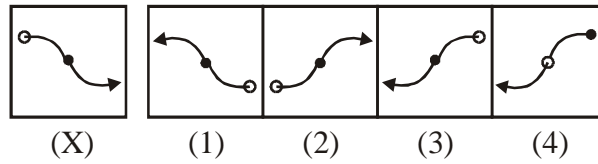
& 17<sup>th</sup> letter to the right of G is P

& 6<sup>th</sup> letter to the left of P is V.

Hence, 6<sup>th</sup> letter to the left of 17<sup>th</sup> letter to the right of 7<sup>th</sup> letter from the left is V.





90. Choose the alternative which closely resembles the mirror image of the figure X .

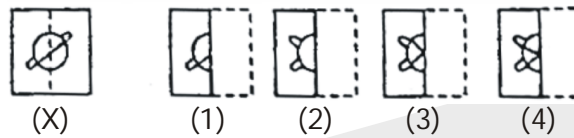


- (1) 1                      (2) 2                      (3) 3                      (4) 4

Ans. (3)



Sol. The mirror image of the figure  is  which is option (3) .

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

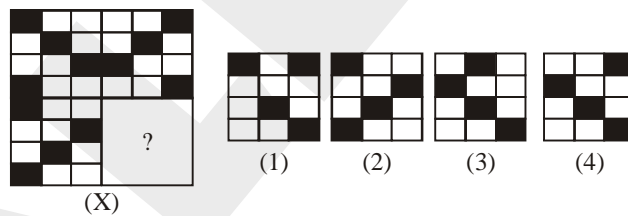


- (1) 1                      (2) 2                      (3) 3                      (4) 4

Ans. (4)


Sol. When the transparent sheet  is folded at the dotted line, we get the figure  which is option (4).

92. Identify the figure that completes the pattern.

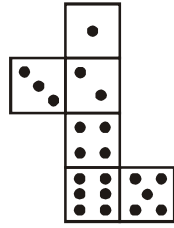


- (1) 1                      (2) 2                      (3) 3                      (4) 4

Ans. (4)

Sol. Figure  completes the pattern which is option (4)

93. When the following figure is folded to form a cube, how many dots lie opposite the face bearing five dots ?



(1) 1



(2) 2

(3) 3

(4) 4

Ans. (3)

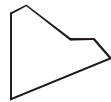
Sol. Face opposite to  is 

Face opposite to  is 

& the face opposite to  is 

Hence, three dots lie opposite to the face bearing five dots.

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



1



2



3



4



5


(1) 145

(2) 245

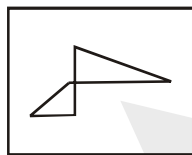
(3) 123

(4) 234

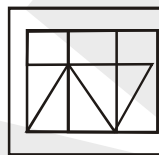
Ans. (2)

Sol. When the figures in alternatives 2, 4, and 5 are fitted into each other, we get the figure  which forms a complete square.

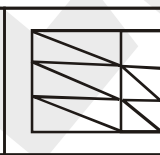
95. Find out the alternative figure which contains figure (X) as its part :



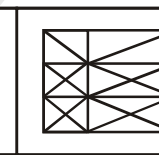
(X)



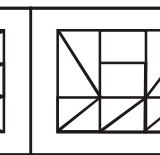
A



B



C



D



(1) A

(2) C

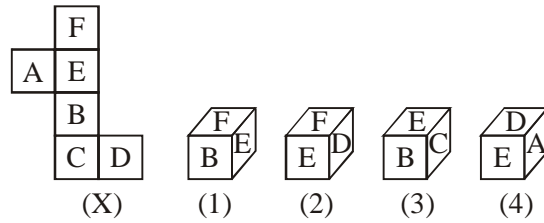
(3) B

(4) D

Ans. (2)

Sol. The figure  is embedded in  which is option (2)

96. Choose the box that is similar to the box formed from the given sheet of paper (X).



(1) 1 only

(2) 2 only

(3) 1 and 3

(4) 1, 2, 3 and 4

Ans. (2)

Sol. Face opposite to F is B


Face opposite to E is C


& the face opposite to A is D

Cube in figure (1) is not possible as F is not adjacent to B.

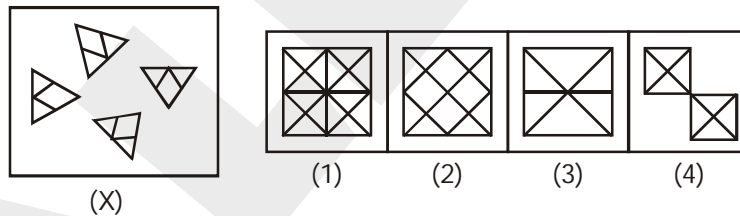
Cube in figure (3) is not possible as E is not adjacent to C

& Cube in figure (4) is also not possible as A is not adjacent to D.

Hence, when the given sheet of paper  is folded

We get  which is the cube in figure (2).

97. Find out which of the figures can be formed from the pieces given in figure :



(1) 1


(2) 2

(3) 3

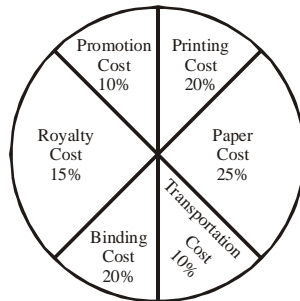
(4) 4

Ans. (2)

Sol. When we join the pieces given in the figure ,

we get , which is the figure in option (2).

**Directions :** (Q. 98-99) : The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and then answer the questions based on it.



98. If for a certain quantity of books, the publisher has to pay Rs. 30,600 as printing cost, then what will be amount of royalty to be paid for these books ?

- (1) Rs. 19,450                      (2) Rs. 21,200                      (3) Rs. 22,950                      (4) Rs. 26,150

**Ans.** (3)

**Sol.** Percentage distribution of the expenditure incurred in printing cost in publishing a book = 20%

& the total cost which the publisher has to pay for printing cost = Rs. 30,600

⇒ 20% represents                      → Rs. 30,600

⇒ 1% represents                        → Rs. 30,600 / 20 = Rs. 1530

% 15 represents                        → Rs. 1530 × 15 = Rs. 22950.

where 15% represents the percentage distribution of the expenditure incurred in Royalty cost in publishing a book.

Hence, Amount to be paid for Royalty for these books = Rs. 22950.

99. What is the central angle of the sector corresponding to the expenditure incurred on Royalty ?

- (1) 15°                                      (2) 24°                                      (3) 48°                                      (4) 54°

**Ans.** (4)

**Sol.** Percentage which represents the expenditure incurred on Royalty = 15%.

Hence, the central angle of the sector corresponding to the expenditure incurred on Royalty =  $\frac{15}{100} \times 360^\circ = 54^\circ$ .

100. Sundar runs 20 m towards East and turns to right and runs 10 m. Then he turns to the right and runs 9 m. Again he turns to right and runs 5 m. After this he turns to left and runs 12 m and finally he turns to right and runs 6 m. Now to which direction is Sundar facing ?

- (1) East                                      (2) West                                      (3) North                                      (4) South

**Ans.** (3)

**Sol.** Now, Sundar is facing in North direction.

