NTSE-2013 (Stage-I) Solutions

MAT

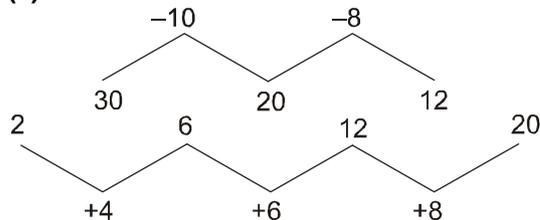**Time allowed : One & half hours (90 Minutes)**   **Maximum Marks : 90**

Direction (1-5) : In each question there is a number series with one term missing shown by question mark (?). This term is one of the alternatives among the four numbers given under it. That number is :

1.   2, 30, 6, 20, 12, 12, (?)
       (1) 26   (2) 22   (3) 20   (4) 24
Ans. **(3)**
Sol.

So missing term is 20.

2.   6, 20, 36, 48, 50, (?), 0
       (1) 36   (2) 40   (3) 46   (4) 56
Ans. **(*)**
Sol.   Date inadequate.

3.   7, 15, 28, 59, 114, (?)
       (1) 243   (2) 233   (3) 213   (4) 223
Ans. **(2)**
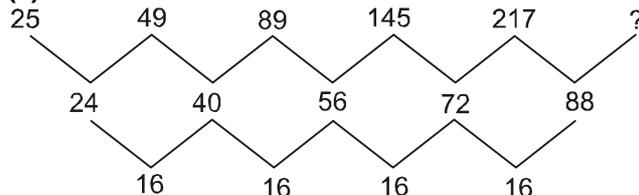**Sol.** $7 \times 2 + 1 = 15$
       $15 \times 2 - 2 = 28$
       $28 \times 2 + 3 = 59$
       $59 \times 2 - 4 = 114$
       $114 \times 2 + 5 = 233$
       So missing term is 233.

4.   25, 49, 89, 145, 217, (?)
       (1) 305   (2) 327   (3) 309   (4) 303
Ans. **(1)**
Sol.

So missing term is 305.

5. 0, 2, 2, 3, 3, 5, 8, 4, 10, (?), 5, 17

(1) 6 (2) 7 (3) 9 (4) 15
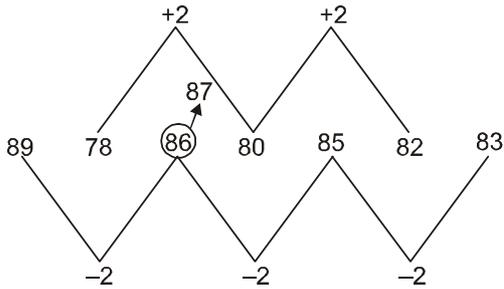
Ans. **(4)**

Sol. There are three series as follows

0, 3, 8, 15

2, 3, 4, 5

2, 5, 10, 17

So missing term is 15.

Direction (6-10) : These questions consists of a number series which contains a wrong term. This term is given as one of the four alternatives among the four numbers given below. The wrong term is :

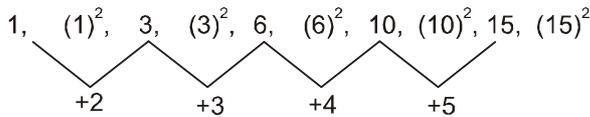**6.** 89, 78, 86, 80, 85, 82, 83

(1) 83 (2) 82 (3) 86 (4) 78

Ans. **(3)**

Sol.

Wrong term is 86. Should be replaced by 87.

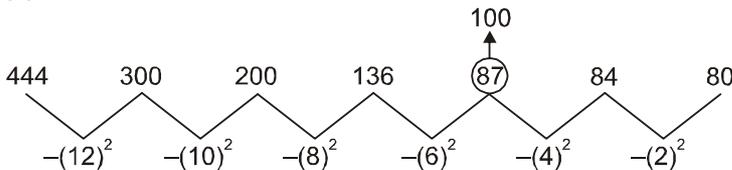**7.** 1, 1, 3, 9, 6, 36, 10, 100, 16, 225

(1) 225 (2) 16 (3) 10 (4) 9

Ans. **(2)**

Sol.

$$1, \quad (1)^2, \quad 3, \quad (3)^2, \quad 6, \quad (6)^2, \quad 10, \quad (10)^2, 15, \quad (15)^2$$

$$+2 \qquad +3 \qquad +4 \qquad +5$$

So wrong term is 16. Should be replaced by 15.

8. 444, 300, 200, 136, 87, 84, 80

(1) 300 (2) 200 (3) 136 (4) 87

Ans. **(4)**

Sol.

444 300 200 136 87 84 80

$$-(12)^2 \quad -(10)^2 \quad -(8)^2 \quad -(6)^2 \quad -(4)^2 \quad -(2)^2$$

So wrong term is 87. Should be replaced by 100.

9. 8, 15, 31, 61, 123, 247, 491

(1) 247 (2) 491 (3) 121 (4) 61

Ans. **(1)**

Sol. 8 × 2 − 1 = 15

15 × 2 + 1 = 31

31 × 2 − 1 = 61

61 × 2 + 1 = 123

123 × 2 − 1 = 245

245 × 2 + 1 = 491

So, wrong term is 247. Should be replaced by 245.

10. 3, 6, 24, 30, 63, 72, 122, 132

(1) 132   (2) 30   (3) 122   (4) 72

Ans. **(3)**

Sol. 3, 6, 24, 30, 63, 72, 122, 132

$2^2 - 1$, $3^2 - 3$, $5^2 - 1$, $6^2 - 6$, $8^2 - 1$, $9^2 - 9$, $11^2 - 1$, $12^2 - 12$

So that wrong term is 122 should be replaced by 120.

Direction (11-14) : Each question consists of four groups. One set is different from other three in someway. Find out the different set :

11. (1) PROQN   (2) DFCEG   (3) GIFHE   (4) KMJLI

Ans. **(2)**

Sol. Pattern is $P \xrightarrow{+2} R \xrightarrow{-3} O \xrightarrow{+2} Q \xrightarrow{-3} N$

So that is DFCEG is odd one out.

12. (1) ACEGF   (2) FHJLK   (3) KMOQP   (4) UWYZA

Ans. **(4)**

Sol. Pattern is $A \xrightarrow{+2} C \xrightarrow{+2} E \xrightarrow{+2} G \xrightarrow{-1} F$

So that UWYZA is odd one out.

13. (1) CADGE   (2) JHKNL   (3) ECFGI   (4) XVYBZ

Ans. **(3)**

Sol. Pattern is $C \xrightarrow{-2} A \xrightarrow{+3} D \xrightarrow{+3} G \xrightarrow{-2} E$

So that ECFGI is odd one out.

14. (1) 6253   (2) 1881   (3) 7043   (4) 8210

Ans. **(4)**

Sol. Other than 8210, all are odd numbers.

Direction (15-19) : In the following questions there is a letter series with one term missing shown by (?). Find this term from the four given alternatives.

15. YANWY, DFMBD, IKNGI, NPMLN, (?) XZMVX

(1) RUMSR   (2) SUNQS   (3) UWNSU   (4) VUMTV

Ans. **(2)**

Sol. Each first, second & fourth letter is +5 ahead in the next term. Third letter is N & M repeated and a first and fifth letter is same.

So missing term is SUNQS.

16. PEXKW, RFWMU, TGVOS, VHUQQ, XITSO, (?)

(1) ZJSUM   (2) YJSUZ   (3) ZKSVJ   (4) JZSTN

Ans. **(1)**

Sol. First letter is +2, Second letter is +1.

Third letter is –1, Fourth letter is +2.

Fifth letter is –2.

So missing term is ZJSUM.

17. AYBZC, DWEXF, GUHVI, JSKTL, (?), POQPR

(1) MQDRN   (2) QMONR   (3) MQNRO   (4) NQMOR

Ans. **(3)**

Sol. First letter is +3, Second letter is –2,

Third letter is +3, Fourth letter is –2

Fifth letter is +3.

So missing term is MQNRO.

18. ZYYZR, ABVUN, (?), BCUTM, XWABT, CDTSL
(1) YXZAS   (2) ZYABT   (3) XWYZR   (4) YXZAB
Ans. **(1)**
Sol. This is two alternate series

So $\quad Z \xrightarrow{\ -1\ } Y \xrightarrow{\ -1\ } X$

$\qquad Y \xrightarrow{\ -1\ } X \xrightarrow{\ -1\ } W$

$\qquad Y \xrightarrow{\ +1\ } Z \xrightarrow{\ +1\ } A$

$\qquad Z \xrightarrow{\ +1\ } A \xrightarrow{\ +1\ } B$

$\qquad R \xrightarrow{\ +1\ } S \xrightarrow{\ +1\ } T$

So missing term is YXZAS.

19. deb, ijg, nol, (?), xyv
(1) rsp   (2) stp   (3) rsq   (4) stq
Ans. **(4)**
Sol. Each letter is +5 ahead from the preceding term.

Direction (20-23) : In each question there are circles. Certain numbers are given inside/outside the circles according to a particular rule. In each question one of the circle has a (?) mark in side it. Choose the correct answer to fill in the space marked (?) from the given alternatives.

20.
$$5 \qquad\qquad 3 \qquad\qquad 18$$
$$7\,(63)\,9 \qquad 11(40)6 \qquad 7\,(\,?\,)11$$
$$3 \qquad\qquad 2 \qquad\qquad 4$$
(1) 144   (2) 136   (3) 135   (4) 124
Ans. **(1)**
Sol. $(7 + 5 + 9) \times 3 = 63$
$(11 + 3 + 6) \times 2 = 40$
$(7 + 18 + 11) \times 4 = 144$

21.
$$8 \qquad\qquad 12 \qquad\qquad 9$$
$$12\,(64)\,6 \qquad 5\,(75)10 \qquad 21\,(\,?\,)12$$
$$9 \qquad\qquad 8 \qquad\qquad 14$$
(1) 102   (2) 152   (3) 162   (4) 172
Ans. **(3)**
Sol. $\dfrac{12 \times 8 \times 6}{9} = 64$

$\dfrac{5 \times 12 \times 10}{8} = 75$

$\dfrac{21 \times 9 \times 12}{14} = 162$

22.
$$4 \qquad\qquad 7 \qquad\qquad 7$$
$$7\,(66)\,8 \qquad 3\,(38)\,9 \qquad 11\,(\,?\,)\,9$$
$$6 \qquad\qquad 4 \qquad\qquad 2$$
(1) 91   (2) 108   (3) 116   (4) 119
Ans. **(2)**
Sol. $(7 \times 8) + (6 + 4) = 66$
$(3 \times 9) + (7 + 4) = 38$
$(11 \times 9) + (7 + 2) = 108$

23.

$$3$$
$$4 \; (7.50) \; 5$$
$$2$$

$$6$$
$$5 \; (11.25) \; 2$$
$$3$$

$$2$$
$$5 \; (?) \; 2$$
$$9$$

(1) 10.25   (2) 10.50   (3) 11.25   (4) 11.50

Ans. **(3)**

Sol. $\dfrac{4 \times 3 \times 5 \times 2}{16} = 7.50$

$\dfrac{5 \times 6 \times 2 \times 3}{16} = 11.25$

So, $\dfrac{5 \times 2 \times 2 \times 9}{16} = 11.25$

Direction (24-26) : These questions are based on letter series in which some of the letters are missing. The missing letters are given in the proper sequence in one of the alternatives among the four given under each question. Find out the correct alternatives for each question.

24. ab _ acc _ _ da _ bba _

(1) cdabc   (2) badaa   (3) cdbcd   (4) dbacd

Ans. **(2)**

Sol. ab <u>b</u> acc <u>a</u> d da <u>a</u> bba <u>a</u>

25. abb _ _ ab _ b _ bba _ a

(1) bbbab   (2) babba   (3) abaab   (4) bbabb

Ans. **(4)**

Sol. abb <u>b</u> <u>b</u> ab <u>a</u> b <u>b</u> bba <u>b</u> a

26. b _ a _ bab _ ab _ a

(1) baba   (2) babb   (3) abab   (4) abba

Ans. **(3)**

Sol. b <u>a</u> a <u>b</u> bab <u>a</u> ab <u>b</u> a

Direction (27-31) : Out of nine cells of a square one cell is left blank and in the rest of the cells numbers are written which follow some rule. Get the rule and find out the proper option for the blank cell (?)

27.

2	72	56
?	0	42
12	20	30

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

Ans. **(2)**

Sol. $0 \xrightarrow{+2} 2 \xrightarrow{+4} 6 \xrightarrow{+2} 12 \xrightarrow{+8} 20 \xrightarrow{+10} 30 \xrightarrow{+12} 42 \xrightarrow{+14} 56 \xrightarrow{+16} 72$

So missing term is 6.

28.

91	64	73
84	76	61
25	60	?

(1) 66   (2) 68   (3) 69   (4) 71

Ans. **(1)**

Sol. Sum of each column is 200.

91 + 84 + 25 = 200

64 + 76 + 60 = 200

73 + 61 + x = 200

i.e.   x = 66

29.

5	10	30
?	3	12
28	14	32

(1) 34   (2) 16   (3) 7   (4) 1

Ans. **(*)**
Sol. Date inadequate

30.

7	32	?
31	8	25
11	24	9

(1) 50   (2) 48   (3) 47   (4) 51

Ans. **(3)**
Sol. Sum of column is 49, 64, 81 respectively.
i.e. missing term is 47.

31.

4	20	25
27	81	9
11	44	?

(1) 4   (2) 16   (3) 30   (4) 55

Ans. **(2)**
Sol.
$$4 \times \sqrt{25} = 20$$
$$27 \times \sqrt{9} = 81$$
$$11 \times \sqrt{16} = 44$$
So missing term is 16.

Direction (32-33) : Find out the correct alternative of the questions based on the Dice figures.

32.

The number opposite side the face having the no. 4 will be :
(1) 1   (2) 2   (3) 5   (4) 6

Ans. **(1)**
Sol. 3, 2, 5, 6 are adjacent to 1. So that 4 is opposite to 1.

33.

  (i)   (ii)   (iii)

These positions of a Dice are shown. In figure (iii) which number will come in place of (?)
(1) 5   (2) 3   (3) 6   (4) 1

Ans. **(4)**

Sol.

	1	
2	6	3
	5	
	4	

i.e. 1 will come in place of question mark.

34. The following figure is converted into a cube. Its correct shape will be :
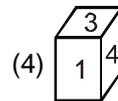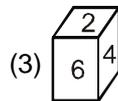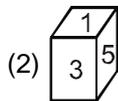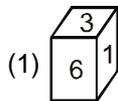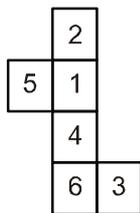
Ans. **(4)**
Sol. Opposite pair are (2, 4), (1, 6) & (3, 5)
i.e. from option only (4) is in correct shape.

35. The following figure is converted into a cube. Its four positions (a), (b), (c) and (d) are shown. On the basis of these select correct alternative.
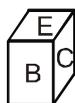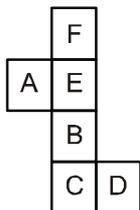
(1) A only   (2) B only   (3) A and C only   (4) A, B, C and D

Ans. **(2)**
Sol. Opposite pair are (B, F), (C, E) & (A, D)
i.e. from option only (b) is in correct shape.

Direction (36-40) : The following question are based on the arrangement of numbers in the form of a pyramid. In each question there is some relationship between the two numbers on the left of the (::). The same relationship exists between the two terms in the right of which one is missing. Find the missing are from the given alternatives.

```
                        1
                    2   3   4
                9   8   7   6   5
            10  11  12  13  14  15  16
        25  24  23  22  21  20  19  18  17
    26  27  28  29  30  31  32  33  34  35  36
49  48  47  46  45  44  43  42  41  40  39  38  37
```
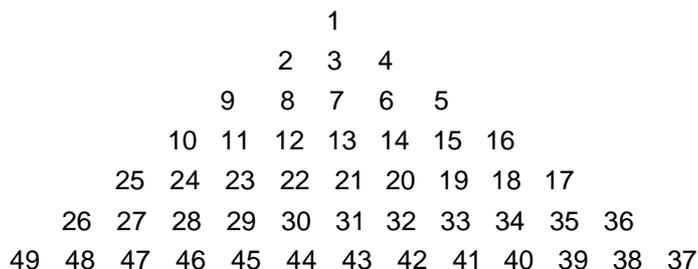
36. 132220 : 211412 : : 222931 : (?)
(1) 304345   (2) 302123   (3) 442931   (4) 312022
Ans. **(2)**
Sol. In the given numbers grid by observation.

37. 2873 : 13212014 : : 10242311 : (?)
(1) 29282423   (2) 28274746   (3) 25272824   (4) 29454430
Ans. **(4)**
Sol. In the given numbers grid by observation.

38. 241214 : 752119 : : 14163234 : (?)
(1) 19174139   (2) 20184240   (3) 21194341   (4) 20224244
Ans. **(1)**
Sol. In the given numbers grid by observation.

39. 25224447 : 23204245 : : 11143229 : (?)

    (1) 13163431   (2) 24214341   (3) 24214346   (4) 13102421

Ans. **(1)**

Sol. In the given numbers grid by observation.

40. 82224 : 133133 : : 62022 : (?)

    (1) 91221   (2) 81312   (3) 153335   (4) 51921

Ans. **(3)**

Sol. In the given numbers grid by observation.

Direction (41-45) : Words in Capital letters in column-I are written in small letters in a code language in column-II. Decode the Language and find out the correct alternative for the given letters in each questions.

COLUMN-I	COLUMN-II
HERO	Tbfw
JOIN	Bakp
LAZY	Nsvg
MINE	Pdkt
PART	Rwsx
SAURY	Wveos
BLUE	Eglt
CIGAR	Vsqwp
WRIT	Wpxy
VIRUS	Pzwoe
QUACK	Jqems
PIRL	wprg

41. Code for letters in the word TOIL are :

    (1) pxba   (2) bpgn   (3) bpxg   (4) mpxg

Ans. **(3)**

Sol. TOIL will be coded as bpxg.

42. Code for letters in the word COST are :

    (1) boqx   (2) xgps   (3) qost   (4) xqnr

Ans. **(1)**

Sol. COST will be coded as boqx.

43. Code for letters in the word ULCER are :

    (1) ggwmr   (2) teqwp   (3) ktegp   (4) gteqw

Ans. **(4)**

Sol. ULCER will be coded as gteqw.

44. Code for letters in the word SINE are :

    (1) ptkl   (2) toka   (3) ptok   (4) optb

Ans. **(3)**

Sol. SINE will be coded as ptok.

45. Code for letters in the word ARCH are :

    (1) frsq   (2) wfsq   (3) wqfp   (4) sqfn

Ans. **(2)**

Sol. ARCH will be code as wfsq.

46. A and B are brother. C and D are sisters. A's son is D's brother. How is B relate to C ?
(1) Brother   (2) Father   (3) Uncle   (4) Son

Ans. **(3)**

Sol.

○ Male
□ Female

Let A's son is E
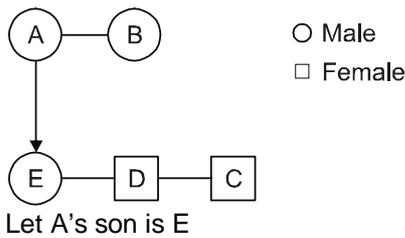
Direction (47) : Read the following information carefully and answer the question given below:

A + B means A is the daughter of B;
A − B means A is the husband of B;
A × B means A is the brother of B.

47. If P + Q − R, which one of the following is true ?
(1) R is the mother of P   (2) R is the sister-in-law of P
(3) R is the aunt of P   (4) R is the mother-in-law of P

Ans. **(1)**

Sol. P + Q − R means

○ Male
□ Female

i.e. R is the mother of P.
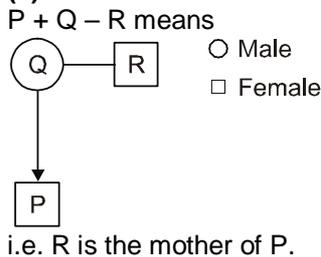
Direction (48-50) : Find out the missing one from the given alternatives.

48. 08 : 28 : : (?) : 65
(1) 9   (2) 12   (3) 15   (4) 18

Ans. **(3)**

Sol. $3^2 − 1 : 3^3 + 1 : : 4^2 − 1 : 4^3 + 1$
i.e. missing term is 15.

49. 35 : 91 : : 189 : (?)
(1) 343   (2) 341   (3) 280   (4) 210

Ans. **(2)**

Sol. $2^3 + 3^3 : 3^3 + 4^3 : : 4^3 + 5^3 : 5^3 + 6^3$
So missing term is 341.

50. $\dfrac{7}{11} : \dfrac{13}{17} : : \dfrac{19}{23} : (?)$

(1) $\dfrac{25}{27}$ (2) $\dfrac{29}{31}$ (3) $\dfrac{23}{29}$ (4) $\dfrac{29}{33}$

Ans. **(2)**

Sol. All are prime number $\dfrac{7}{11} : \dfrac{13}{17} : : \dfrac{19}{23} : \dfrac{29}{31}$

Direction (51-53) : Following four diagrams marked 1, 2, 3 and 4 are given as alternatives. Choose the best suitable alternative diagram marked 1, 2, 3 and 4, the one that represent the best relationship amongst the three given groups.
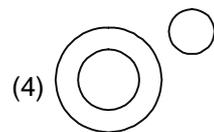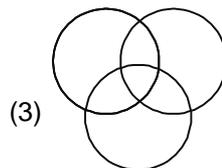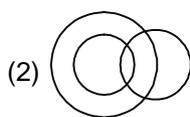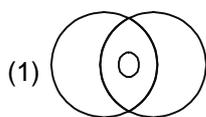
51. Birds, Crows, Cats

Ans. **(4)**

Sol. Crows lies in Birds class

52. Snakes, Land creatures, Water eveatures
Ans. **(1)**
Sol. Snakes are land creatures as well as water eveatures.

53. Males, Nephews, Nieces
Ans. **(4)**
Sol. Nephew lies in males class.

Direction (54-56) : In the following questions some relations are written by particular indicators as shown below:

O	=	Greater than
+	=	Equal to
Δ	=	Not equal to
$\varnothing$	=	Not greater than
$\times$	=	Not less than
$\square$	=	Less than

54. If p Δ q O r, it is possible that :
(1) p $\times$ q $\times$ r   (2) p $\times$ q $\square$ r   (3) p $\square$ q $\varnothing$ r   (4) p $\varnothing$ q $\varnothing$ r
Ans. **(1)**
Sol. p $\times$ q $\times$ r means q is greater than or equal to r .

55. If p $\square$ q Δ r, it is not possible that :
(1) p Δ q $\varnothing$ r   (2) p $\square$ q Δ r   (3) p $\varnothing$ q $\square$ r   (4) p + q $\times$ r
Ans. **(4)**
Sol. p + q $\times$ r means p is not equal to q which is not possible.

56. If p $\times$ q $\varnothing$ r, it is not possible that :
(1) p Δ q $\square$ r   (2) p $\times$ q + r   (3) p Δ q O r   (4) p O q + r
Ans. **(3)**
Sol. p Δ q O r means q is greater than r.

57. If your birth day 30th June, 2003 falls on Monday, on what day of the week does your birth day fall in the year 2005 ?
(1) Sunday   (2) Tuesday   (3) Wednesday   (4) Thursday
Ans. **(4)**
Sol. Thursday because total number odd days will be three.

58. On what day of the week India will celebrate its Republic Day on 26th January, 2015 ?
(1) Sunday   (2) Monday   (3) Tuesday   (4) Wednesday
Ans. **(2)**
Sol. Monday.

59. At what angle are the hands of a clock inclined at 30 minutes past 6 ?
(1) $7\frac{1}{2}°$ (2) $11\frac{1}{2}°$ (3) 15°   (4) 23°
Ans. **(3)**
Sol. $30 \times 6 - 11/2 \times 30 = 15°$.

60. A clock is set to show the correct time at 11 a.m. The clock gains 12 minutes in 12 hours what will be the true when the watch indicates 1 p.m. on the 6th day ?
(1) 10 a.m.   (2) 11 a.m.   (3) 12 noon   (4) None of these
Ans. **(2)**
Sol.

1st day	2nd day	3rd day	4th day	5th day	11.a.m. 6th day
◄24 hrs►	◄24 hrs►	◄24 hrs►	◄24 hrs►	◄24 hrs►	◄ 1.p.m. ►
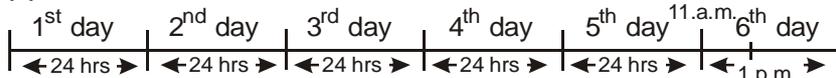
122 hrs. of given clock is equal to 120 hrs of actual time.
Total hrs (according to given clock = 24 $\times$ 5 + 2 = 122 hrs
i.e. actual time will be 2hrs back = 11 a.m.

Direction (61-64) : Two Sets of the figures are given. One set of Question-figures and another set is of Answer figure. Question-figures are arranged in a sequence. One figure from the Answer figures is to be selected such that it can be placed after the series of Question-figures. Find the correct Serial number of the selected Answer-figure.
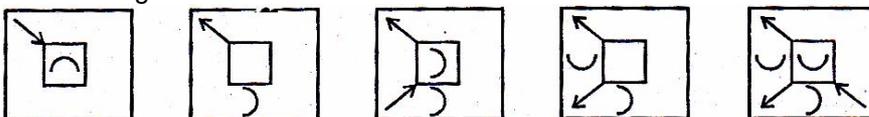
61. Question-Figures :
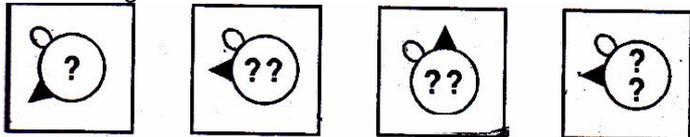
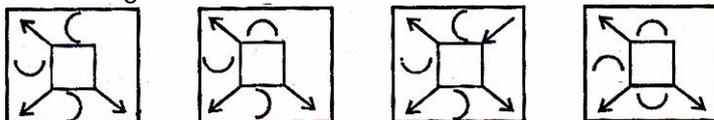

Answer-Figures :

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

Ans. **(2)**
Sol. By visualizing the figure option 2 is correct.

62. Question-Figures :

Answer-Figures :

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

Ans. **(1)**
Sol. By visualizing the figure option 1 is correct.

63. Question-Figures :
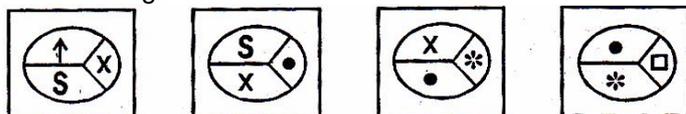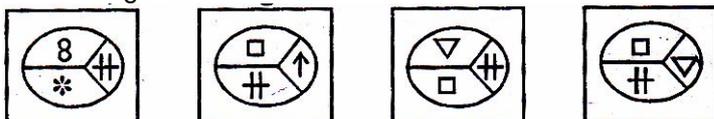
Answer-Figures :

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

Ans. **(4)**
Sol. By visualizing the figure option 4 is correct.

64. Question-Figures :
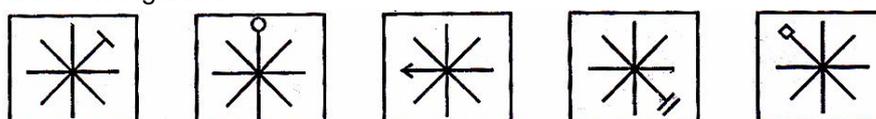
Answer-Figures :
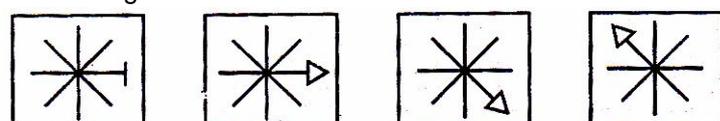
(1)   (2)   (3)   (4)

Ans. **(2)**
Sol. By visualizing the figure option 2 is correct.

Directions (65-68) : In each of the following questions four figures are given. One of these figures does not fit with the rest of the figures. Find out that correct serial number.
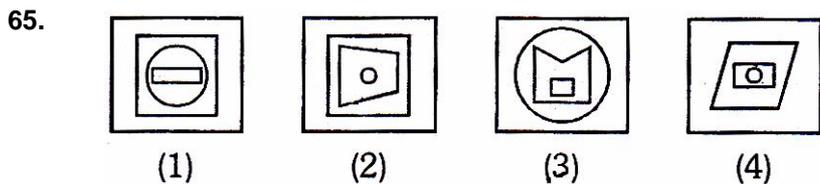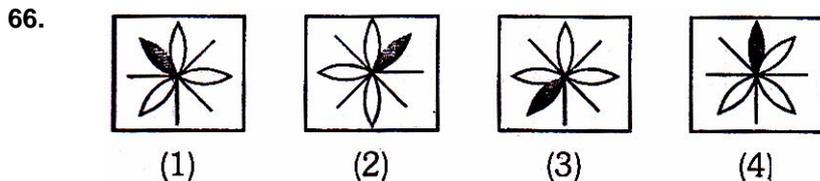
65.

(1)　　(2)　　(3)　　(4)

Ans. **(3)**
Sol. By visualizing the figure option 3 is correct.

66.

(1)　　(2)　　(3)　　(4)

Ans. **(1)**
Sol. By visualizing the figure option 1 is correct.

67.

(1)　　(2)　　(3)　　(4)

Ans. **(1)**
Sol. By visualizing the figure option 1 is correct.

68.

(1)　　(2)　　(3)　　(4)
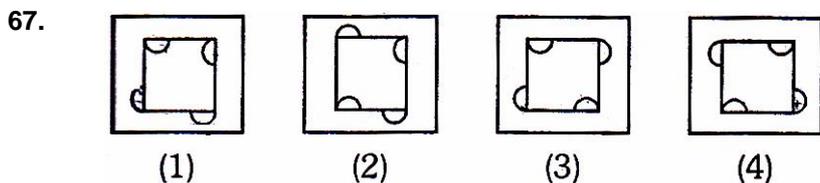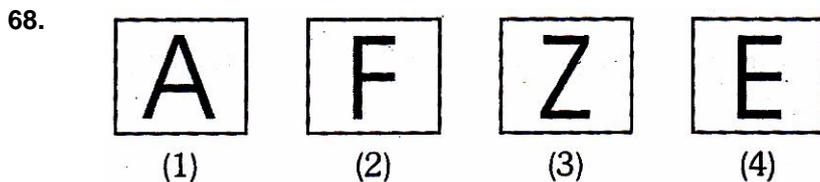
Ans. **(1, 4)**
Sol. By visualizing the mirror image option 1 is correct or by visualizing the water image option 4 is correct

Direction (69-72) : In the following questions there is some relationship between the two figure on the left of (::) the same relationship exists between the two term on the right, of which one is missing. Find the missing one from the given alternative.

69. Questions-Figures :

Answer-Figures :

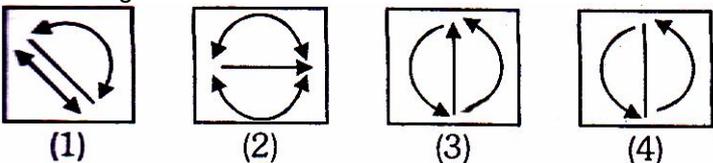(1)　　(2)　　(3)　　(4)
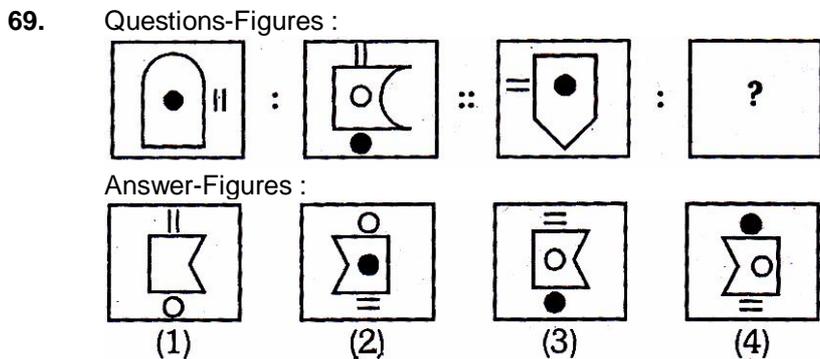
Ans. **(4)**
Sol. By visualizing the figure option 4 is correct.

70. Questions-Figures :
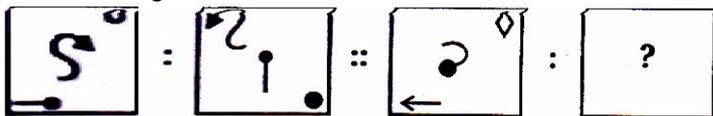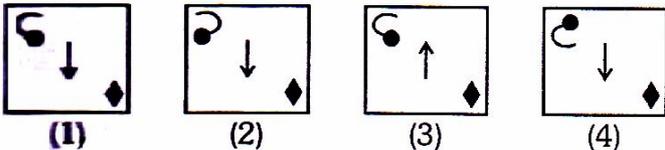
Answer-Figures :

Ans. **(1)**
Sol. By visualizing the figure option 1 is correct.

71. Questions-Figures :
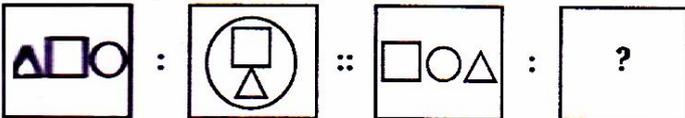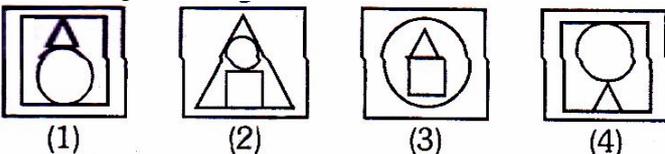
Answer-Figures :

Ans. **(2)**
Sol. By visualizing the figure option 2 is correct.

**72.** Questions-Figures :
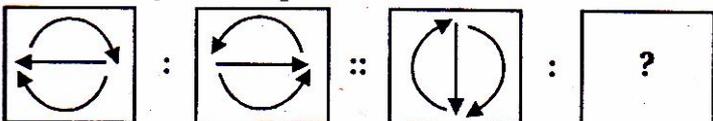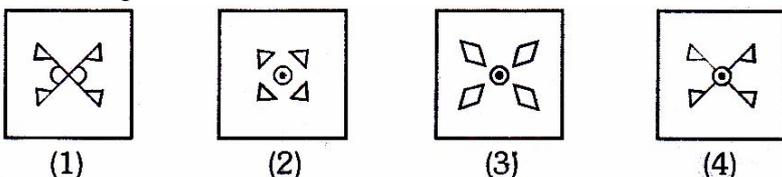

Answer-Figures :

Ans. **(3)**
Sol. By visualizing the figure option 3 is correct.

Direction (73-76) : The following questions are related to paper cutting. The questions that follow contain a set of three figures X, Y and Z, showing a sequence of folding of a piece of paper. Fig. (Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures 1, 2, 3 and 4 (IInd Set) from which you have to choose a figure which would most closely resemble the unfolded form of fig. (Z).
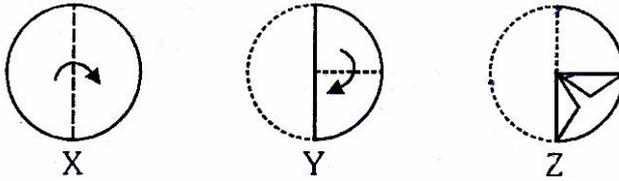
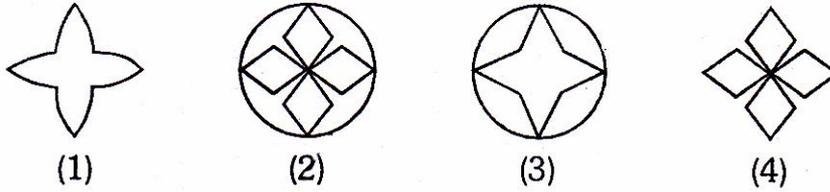**73.** Sequence of folding the paper.
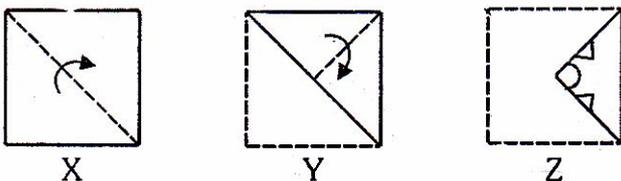
Answer-Figures :

Ans. **(3)**
Sol. By visualizing the figure option 3 is correct.
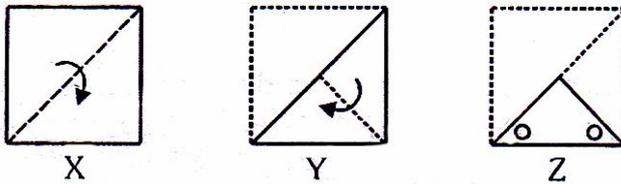
74. Sequence of folding the paper.

Answer-Figures :
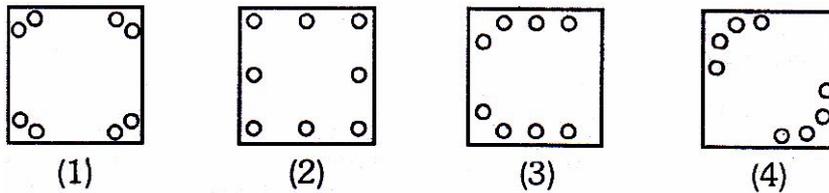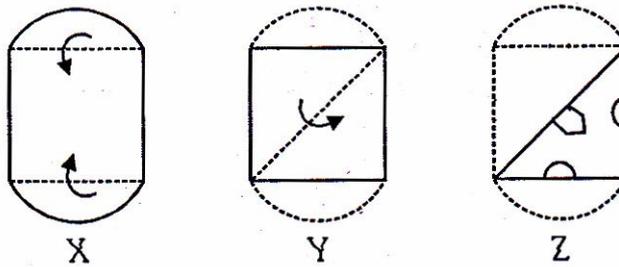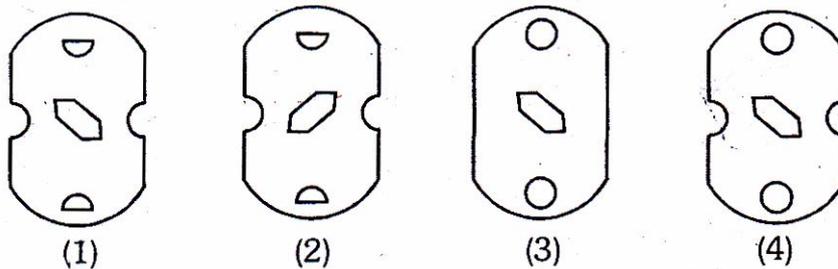

(1)   (2)   (3)   (4)

Ans. **(2)**
Sol. By visualizing the figure option 2 is correct.

75. Sequence of folding the paper.

Answer-Figures :

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

Ans. **(1)**
Sol. By visualizing the figure option 1 is correct.

76. Sequence of folding the paper.

Answer-Figures :
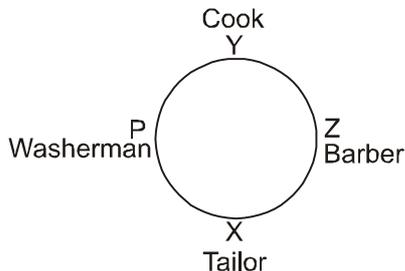

(1)   (2)   (3)   (4)

Ans. **(4)**
Sol. By visualizing the figure option 4 is correct.

77. X, Y, Z and P are sitting around a circular table and discussing their trades.
(1) X, sits opposite to cook
(2) Y, sits right to the barber
(3) The washerman is on the left of the tailor
(4) P, sits opposite Z
What are the trades X and Y ?
(1) Tailor and Barber   (2) Barber and Cook   (3) Tailor and Cook   (4) Tailor and Washerman
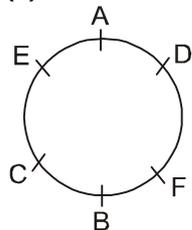
Ans. **(3)**

Sol.

78. Six persons, A, B, C, D, E and F are standing in a circle. B is between F and C, A is between E and D, F is to the left of D.
Who is between A and F ?
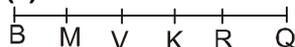(1) B   (2) C   (3) D   (4) E

Ans. **(3)**

Sol.

79. Six students are sitting in a row. K is sitting between V and R. V is sitting next to M. M is sitting next to B who is sitting on the extreme left and Q is sitting next to R.
Who are sitting adjacent to V ?
(1) R and Q   (2) B and M   (3) K and R   (4) M and K

Ans. **(4)**

Sol. B   M   V   K   R   Q

80. If $27 \ast 3 = 243$
     $5 \ast 4 = 80$
Then what is the value of $3 \ast 7$?
(1) 84   (2) 147   (3) 63   (4) 23

Ans. **(2)**

Sol. $81 \times 3 = 243$
$20 \times 4 = 80$
$21 \times 7 = 147$.

Direction (81 - 84) : The six faces of a cube are painted in a manner that no two adjacent faces have the same colour. The three colours used in painting are red, blue and green. The cube is then cut into 36 smaller cubes in such a manner that 32 cubes are of one size and the rest of a bigger size and each of the bigger cubes has no red side. Answer the following questions.

81. How many cubes in all have a red side ?
(1) 16   (2) 32   (3) 8   (4) 20

Ans. **(2)**

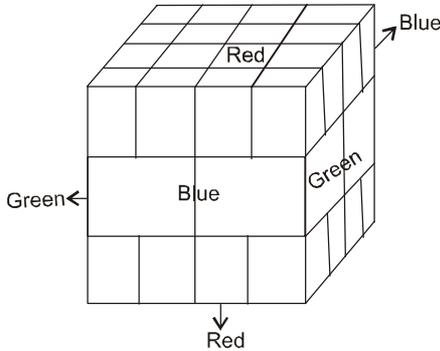**82.** How many cubes in all have only one side coloured ?
(1) 20   (2) 16   (3) 0   (4) 8

Ans. **(4)**

83. How many cubes are coloured on three sides ?

   (1) 20   (2) 16   (3) 8   (4) 0

Ans.   **(3)**

84. How many cubes are there which have two or more sides painted ?

    (1) 36   (2) 28   (3) 20   (4) 32

Ans.   **(2)**

Sol.   **(81-84)**

The given cube has been cut in following manner.

85. In a coded language NUMBER is written as in MFNYVI, Then FIGURE may be written in coded language as :

    (1) ERHFID   (2) URTVSF   (3) GJTFSF   (4) URTFIV

Ans.   **(4)**

Sol.   Every alphabet is coded by it's reverse ranking alphabet .

86. In a coded language SHIFT is written as UFKDV, Then COVET may be written in coded language as :

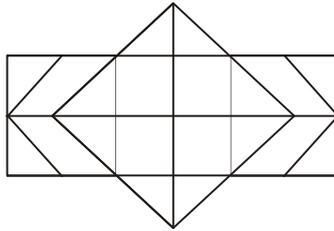   (1) EMXCV   (2) FNYDU   (3) EXCUV   (4) EQUDS

Ans.   **(1)**

Sol.
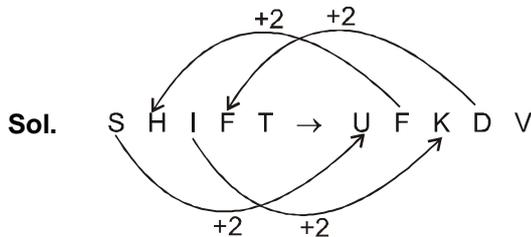
87. If

PET = 4

LET = 3

JEY = 2

Then what is the value of XET ?

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

Ans.   **(3)**

Sol.   PET = 4 is coded as : P = 16 , E = 5, T = 20

$16 \times 5 = 80/20 = 4$

Similarly XET = 6.

88. In a coded language is HOME = 2541, SHOP, = 8256, WORK = 9573, then coded for SMOKE will be :

    (1) 85431   (2) 84531   (3) 83451   (4) 84351

Ans.   **(2)**

Sol.   Code for S = 8, M = 4, O = 5, K = 3, E = 1.

89. What will be the number of Hexagonals in the given figure ?

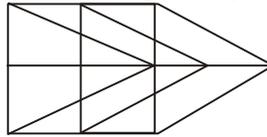(1) 2   (2) 4   (3) 5   (4) 6

Ans. **(4)**

Sol. Total number of Hexagonals figures is 6.

90. What will be the number of Parallelograms in the given figure ?

(1) 15   (2) 17   (3) 13   (4) 16

Ans. **(2)**

Sol. Total number of Parallelograms are 17.

*   *   *   *   *