NATIONAL TALENT SEARCH EXAMINATION (NTSE-2020) STAGE -1

STATE : MAHARASHTRA PAPER : MAT

Date: 17/11/2019

Max. Marks: 50 **SOLUTIONS** **Time allowed: 45 mins**

Q.1 to 3 : Direction In the following questions a specific group of numbers is given. From the given alternatives, find out the correct alternative that matches the given group.

1. 150 576 252

(1) 393 (2) 466 (3) 80 (4) 182

Ans. (3)

Sol. $x^2 + x^3$

$5^2 + 5^3 = 150, 8^2 + 8^3 = 576, 6^2 + 6^3 = 252$

$4^2 + 4^3 = 80$

2. 132 736 350

(1) 223 (2) 72 (3) 505 (4) 993

Ans. (1)

Sol. $x^3 + 7$

$5^3 + 7 = 132, 9^3 + 7 = 736, 7^3 + 7 = 350$

$6^3 + 7 = 223$

3. 193 454 265

(1) 572 (2) 823 (3) 734 (4) 367

Ans. (2)

Sol. Sum of the digits is 13

Q.4 and 5 : Direction Find the odd term.

4. (1) DUFW (2) HQJS (3) JOLQ (4) AWCZ

Ans. (4)

Sol. In option (1) and (2) first and fourth letter are pair and second and third are pair which have sum as 27.

5. (1) AEVZ (2) FJQU (3) CQTX (4) JMOS

Ans. (3 & 4)

Sol. In option (1) and (2) first and fourth letter are pair and second and third are pair which have sum as 27.

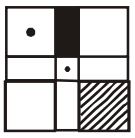
6. ABCDFGHIJKLMNOPQRSTUVWXYZ

From the above alphabets which word will be formed from the given alternatives if the meaningful word formed by the 5th and 10th letter from the right and 1st and 5th letter from the left is written in the reverse order.

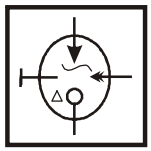
(1) VEAS (2) SAEV (3) AYES (4) EVAS

Ans. (Bonus)

Q.7 to 9: Direction Find the odd figure.

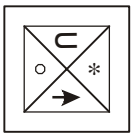
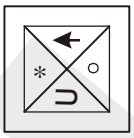
7. (1)  (2)  (3)  (4) 

Ans. (Bonus)

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

Ans. (3)

Sol. By observation

9. (1)  (2)  (3)  (4) 

Ans. (Bonus)

10. In the following question there is a specific relation between first and second term. The same relationship exists between third and the fourth term. Considering the same relationship choose the correct alternative that will replace the question mark. 11529 : 72135 :: 152943 : ?

(1) 213549 (2) 223649 (3) 224194 (4) 215049

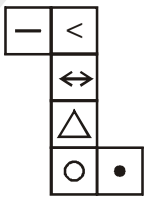
Ans. (1)

Sol. 11529 : 72135 : 152943

1 + 6 = 7 **15 + 6 = 21**
15 + 6 = 21 **29 + 6 = 35**
29 + 6 = 35 **43 + 6 = 49**

213549

Q.11 to 13 : Direction The adjacent figure is folded to form a cube. Observe the figure and answer the following questions.



11. Which symbol will not be adjacent to the symbol '□' ?

(1) < (2) — (3) ↔ (4) Δ

Ans. (2)

Sol. by observation

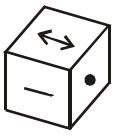
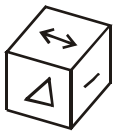
12. Which symbol will be opposite to the symbol Δ ?

(1) $\leftrightarrow$ (2) □ (3) < (4) –

Ans. (3)

Sol. by observation

13. Which of the following figure is the figure obtained by folding the paper to form a cube?

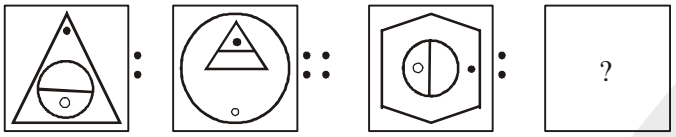
(1)  (2)  (3)  (4) 

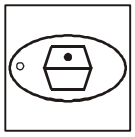
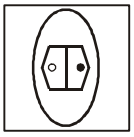
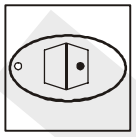
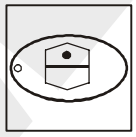
Ans. (4)

Sol. by observation

Q.14 to 16 : Direction In each of the following questions there is a specific relationship between the first and the second figure. The same relationship exists between the third and the fourth figure. Find the relation and choose the correct answer to replace the question mark.

14. Question Figure

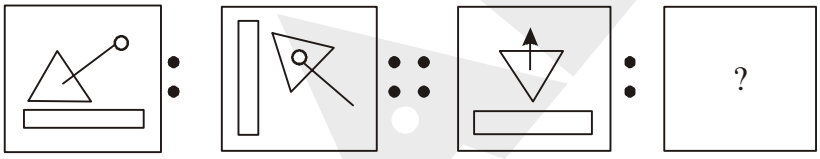


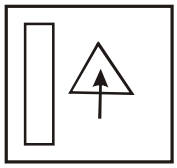
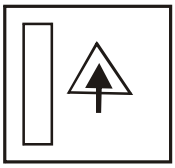
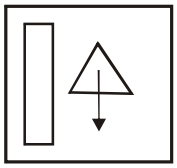
(1)  (2)  (3)  (4) 

Ans. (3)

Sol. by observation

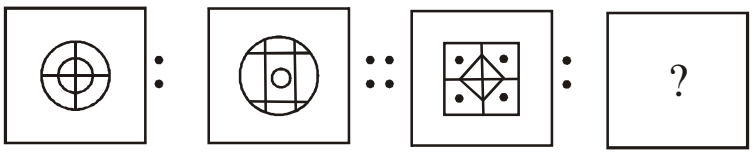
15. Question Figure

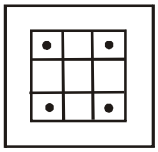
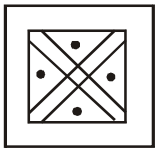
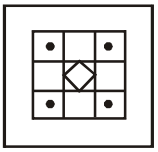
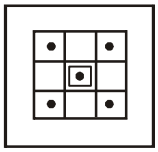


(1)  (2)  (3)  (4) 

Ans. (Bonus)

16. Question Figure



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

Ans. (3)

Sol. Horizontal and vertical line split into two and surrounds the central figure.

Q.17 to 20 : Direction In each of the following questions, choose the correct alternative that will replace the question mark in the given sequence.

17. 4, 6, 16, 62, 308, ?

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

Ans. (4)

Sol. $4 \times 2 - 2 = 6$

$6 \times 3 - 2 = 16$

$16 \times 4 - 2 = 62$

$62 \times 5 - 2 = 308$

$308 \times 6 - 2 = 1846$

18. 6, 9, 18, 21, 42, 45, ?, ?

(1) 90, 91 (2) 90, 92 (3) 90, 93 (4) 90, 94

Ans. (3)

Sol. $\underset{+3}{6}, \underset{\times 2}{9}, \underset{+3}{18}, \underset{\times 2}{21}, \underset{+3}{42}, \underset{\times 2}{45}, \underset{+3}{?}, ?$

$45 \times 2 = 90$

$90 + 3 = 93$

19. 7, 13, 25, 43, 67 ?

(1) 97 (2) 98 (3) 99 (4) 10

Ans. (1)

Sol. Difference is

+6, +12, +18, +24, +30

20. 3624, 4363, 3644, 4563, 3664, ?

(1) 4263 (2) 4363 (3) 4536 (4) 4763

Ans. (4)

Sol. 3624 $\boxed{3634}$ 3644 $\boxed{3654}$ 3664 $\boxed{4763}$

Q.21 to 23: Direction Atul, Tushar, Nishant and Amar are four players. Except Nishant all play cricket. Atul plays only cricket and football. Only three players play football. Tushar plays all the games except kho-kho. Only one player does not play kabaddi. Only Nishant does not play football. Nishant and Amar are expert in kho-kho.

21. Which game Tushar, Nishant and Amar play ?

(1) Kabaddi (2) Kho-Kho (3) Cricket (4) Football

Ans. (1)

22. Who plays all the games?

(1) Atul (2) Tushar (3) Nishant (4) Amar

Ans. (4)

23. Which game is played by only two players?

(1) Cricket (2) Kabaddi (3) Football (4) Kho-kho

Ans. (4)

Sol. Q.21 to Q.23

	Atul	Tushar	Nishant	Amar
Cricket	✓	✓	✗	✓
Football	✓	✓	✗	✓
Kabaddi	✗	✓	✓	✓
Kho-Kho	✗	✗	✓	✓

Q. 24 and 25: Direction A rhythmic arrangement of letters is given. The missing letters appear in the same order in one of the alternative answer. Choose the correct alternative.

24. ab-bc-c-ba-c

(1) baac (2) aabb (3) caab (4) aaab

Ans. (3)

Sol. abc/bca/cab/abc

25. abb -baa -- bb - b - ab

(1) bbaba (2) abaaa (3) abbba (4) ababa.

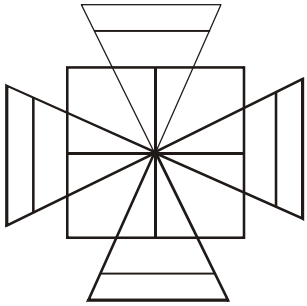
Ans. (1 and 2)

Sol. abbbb/aab/abbbb/aab

or

abbab/aab/abbab/aab

26. Find the number of triangles in the adjacent figure :

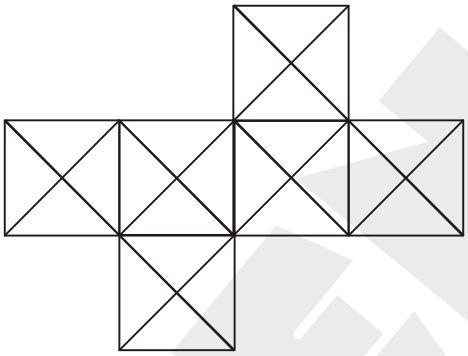


(1) 12 (2) 16 (3) 20 (4) 24

Ans. (3)

Sol. By counting

27. Find the number of Squares from the adjacent figure :



(1) 6 (2) 11 (3) 13 (4) 10

Ans. (2)

Sol. By counting

Q.28 to 31 : Direction Choose the correct alternative that will replace the question mark.

28. JDP, NGR, RJT, VMV, ?

(1) ZPW (2) ZQY (3) ZPX (4) ZRY

Ans. (3)

Sol. Comparing the corresponding letter of each term,

J, N, R, V, ?

Difference is +4, next letter after 'V' will be 'Z'

Similarly, we get P and X respectively.

'ZPX' is the anwer.

29. $V_{422}D, S_{719}G, P_{1016}J, M_{1313}M, ?$

(1) $K_{1711}P$ (2) $J_{1610}P$ (3) $J_{1611}P$ (4) $I_{1520}O$

Ans. (2)

Sol. Compare the corresponding letters of each term we get J and P. Now value of 'P' in alphabetical order is 16 and 'J' is 10. Value of second letter is placed first.

30. 29AYC, EUG33, IQ37K, ?

(1) MMO_{41} (2) MZB_{41} (3) MNP_{43} (4) MPO_{44}

Ans. **(1)**

Sol. A + Y + C = 1 + 25 + 3

Similarly E + U + 4 = 33 and I + 4 + K = 37

Comparing the corresponding letters of each term, we get MMO.

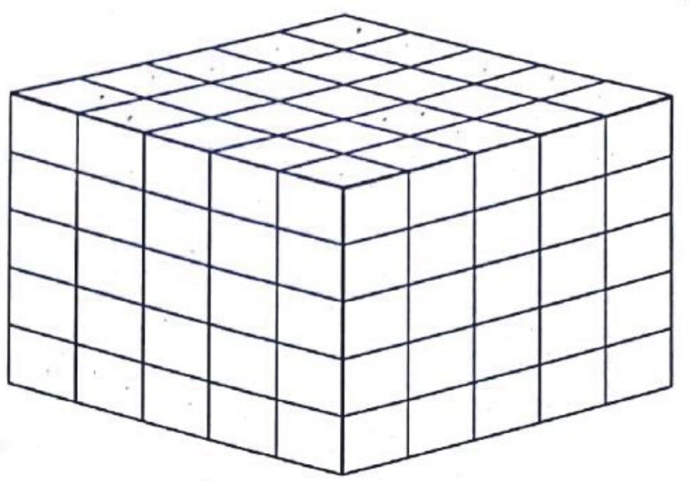
31. ZAB, WDE, SHI, NMA, ?

(1) VEF (2) UFG (3) FUG (4) HSG

Ans. **(2)**

Sol.
A B C D E F G H I J K L M A B C D E F G H ..... M
X Y X W V O T S R Q P O N Z Y X W V U T .... N

Q.32 to 34: Direction The bottom and the top surface of a cube, having each side 5 units, is painted black. The opposite surfaces of the cube are red. Then the cube is cut into smaller cubes having each side 1 unit. On the basis of this information choose the correct alternative to answer the questions.



32. How many cubes have at least one surface painted?

(1) 125 (2) 116 (3) 100 (4) 98

Ans. **(4)**

33. How many cubes have only red surface?

(1) 18 (2) 30 (3) 48 (4) 60

Ans. **(3)**

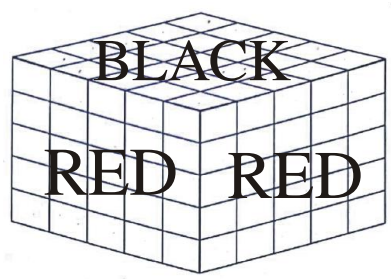
34. How many cubes have surfaces in both the colours, black and red?

(1) 25 (2) 50 (3) 8 (4) 20

Ans. **(Bonus)**

Sol. Q.32 to Q.34

Assuming all the lateral surfaces are coloured Red.



32. $n^3-(n-2)^3$

$=(5)^3-(5-2)^3=125-3^3$

$=125-27=98$

33. $15+15+9+9=48$

34. Bonus

35. If in mathematical code language

$\Delta+\nabla=9,\ \triangleleft+\triangleright=13,\ \triangleright+\Delta=11$ and $\nabla+\square=12$ then find the valule of $\square$ from the following alternatives.

(1) 5 (2) 7 (3) 6 (4) 8

Ans. (1 and 4)

Sol. Considering distinct digit for different symbol. Option (1) and (4) satisfies the above equation.

36. In a certain code language if $\$ \times ₹ = 35$, $E \times \$ = 30$. $₹ \times U = 63$ and $U \times \# = 36$ then find the value of #.

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

Ans. (2)

Sol. $\$ \times ₹ = 35 = 5 \times 7$

$E \times \$ = 30 = 5 \times 6$

$\Rightarrow \$ = 5, ₹ = 7, E = 6$

$₹ \times U = 63$

$7 \times U = 63$

$\therefore U = 9$

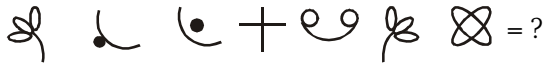
$U \times \# = 36$

$9 \times \# = 36$

$\therefore \# = 4$

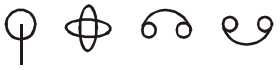
Q.37 and 38:Direction In the following table the digits are assigned with certain symbols. Observe them carefully and choose the correct alternative to answer the questions

Digit	9	0	8	1	7	2	6	3	5	4
Symbol										

37.  = ?

(1) 

(2) 

(3) 

(4) 

Ans. (3)

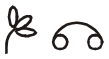
Sol. 872 + 634 = 1506

38.  = ?

(1) 

(2) 

(3) 

(4) 

Ans. (2)

Sol. 278 – 196 = 820

Q.39 and 40: Direction In the following sequence. Choose the correct term that will replace the question mark.

39. 

(1) 

(2) 

(3) 

(4) 

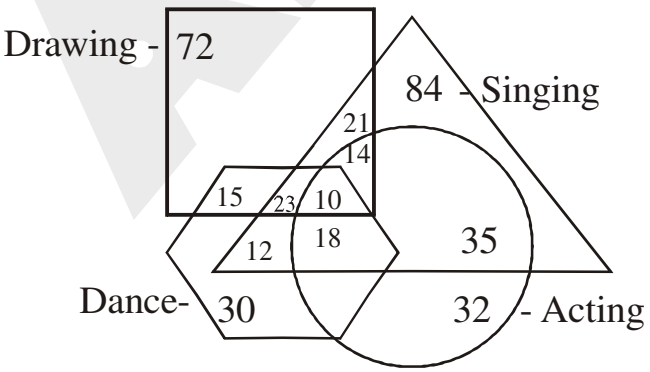
Ans. (Bonus)

40. α β θ ρ δ, β α θ ρ δ, β θ α ρ δ, β θ ρ σ α, ?

(1) βθραδ (2) βθδαρ (3) βθδρα (4) βθρδα

Ans. (Bonus)

Q.41 to 43: Direction In the adjacent figure the numbers represent the number of artists in different arts. Observe the diagram carefully and choose the correct alternative to answer to questions.



41. How many artists are expert in all the arts?

(1) 23 (2) 10 (3) 14 (4) 33

Ans. (2)

Sol. By observation

42. How many artists are good in 'acting'?

(1) 35 (2) 77 (3) 67 (4) 32

Ans. (4)

Sol. By observation

43. How many artists are good in only two arts?

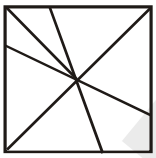
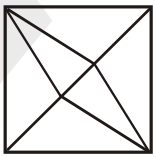
(1) 65 (2) 97 (3) 83 (4) 71

Ans. (3)

Sol. 35 + 21 + 15 + 12 = 83

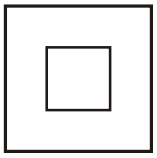
Q.44 and 45 : Direction After folding a square piece of paper it appears as shown in the question figure. The paper when unfolded will look like as shown in one of the laternatives. Select the correct alternative.

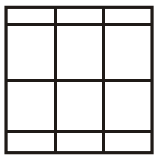
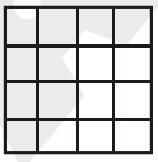
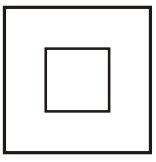
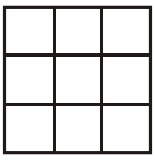
44. Question figure

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

Ans. (Bonus)

45. Question figure



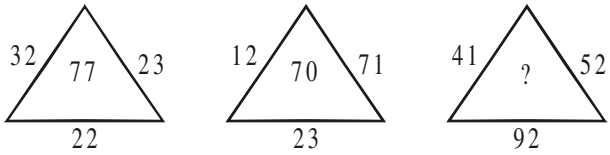
(1)  (2)  (3)  (4) 

Ans. (4)

Sol. By observation

Q.46 and 47: Direction Identify the rule in the following arrangement of numbers. Choose the correct alternative that will replace the question mark.

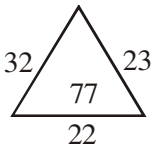
46.



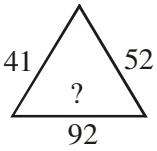
(1) 185 (2) 68 (3) 78 (4) 93

Ans. (2)

Sol. Reversing digits and addition of outer number is the number inside the triangle

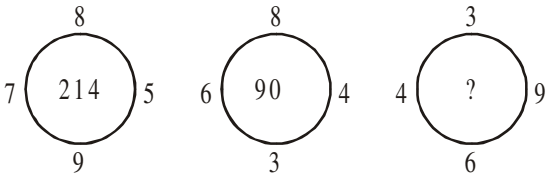


$\Rightarrow \quad 23 + 32 + 22 = 77$



$\Rightarrow \quad ? = 14 + 25 + 29 = 68$

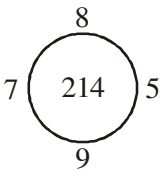
47.



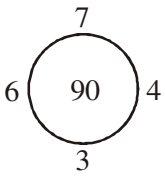
(1) 54 (2) 73 (3) 92 (4) 108

Ans. (4)

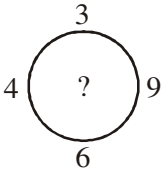
Sol.



$(7\times5+8\times9)\times2=214$

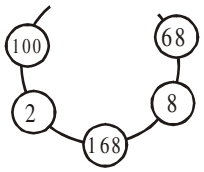


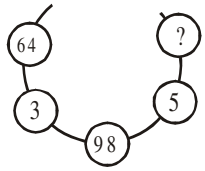
$(4\times6+7\times3)\times2=90$



$(4\times9+3\times6)\times2=108$

Q.48 to 50 : Direction There is a specific rule in the following arrangement of numbers. Study that rule carefully. According to that rule choose the correct alternative for the questions that follow:

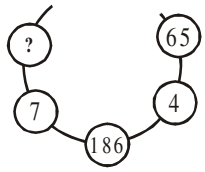


48. 

(1) 30 (2) 32 (3) 34 (4) 52

Ans. **(3)**

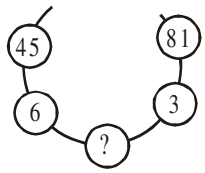
Sol. $64 + ? = 98 \Rightarrow ? = 98 - 64 = 34$

49. 

(1) 57 (2) 84 (3) 98 (4) 121

Ans. **(4)**

Sol. $? + 65 = 186 \Rightarrow ? = 86 - 65 = 121$

50. 

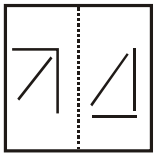
(1) 216 (2) 126 (3) 113 (4) 93

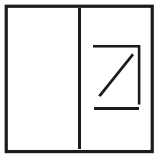
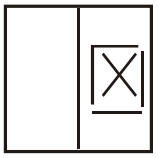
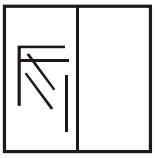
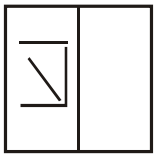
Ans. **(2)**

Sol. $45 + 81 = ? \Rightarrow ? = 126$

Q.51 and Q.52: Direction In the figure given below, a transparent square shaped paper is folded along the dotted lines, which figure will be obtained? Choose the correct figure from the given alternatives.

51. Question Figure

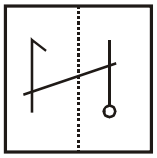


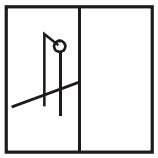
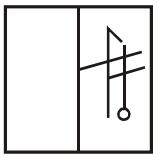
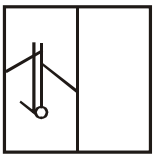
(1)  (2)  (3)  (4) 

Ans. (2)

Sol. by observation

52. Questions Figure



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

Ans. (4)

Sol. by observation

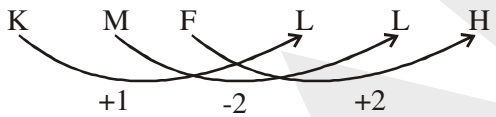
Q.53 to 55: Direction In each of the following questions there is a specific relationship between the first and the second term. The same relationship exists between the third and the fourth term. Find the relation and choose the correct answer to replace the question mark.

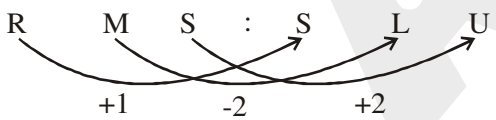
53. KMF : LLH : : RMS : ?

(1) SLR (2) SLU (3) SSU (4) SUS

Ans. (2)

Sol.



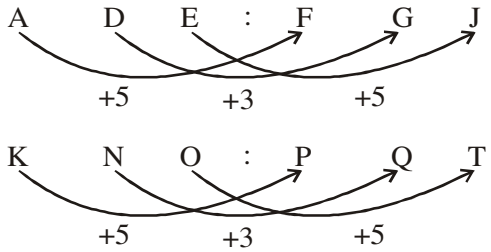


54. ADE : FGJ : : KNO : ?

(1) PQR (2) PQT (3) RQP (4) TPR

Ans. (2)

Sol.

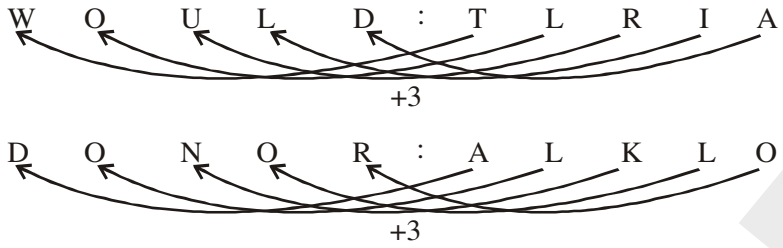


55. ? : ALKLO : : WOULD : TLRIA

(1) BLOCK (2) BARGE (3) CONES (4) DONOR

Ans. (4)

Sol.



56. **Direction:** In the following question the numbers and letters in each horizontal line are related to each other by a specific rule. Identify the rule and choose the correct alternative to replace the question mark.

FJ	**25**	**16**	**NS**
LZ	**25**	**196**	**SX**
NQ	**?**	**?**	**WY**

(1) 4,9 (2) 9, 4 (3) 18, 169 (4) 31, 256

Ans. (1)

Sol. (Difference of letters)^2

$J - F = 4 \Rightarrow 4^2 = 16$

$S - N = 5 \Rightarrow 5^2 = 25$

57. Choose the correct alternative to replace the question mark.

A	M	Q
C	U	E
G	E	?

(1) F (2) T (3) U (4) S

Ans. (3)

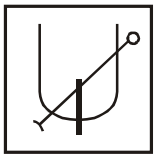
Sol.

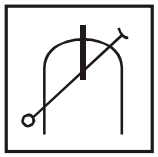
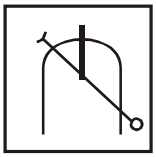
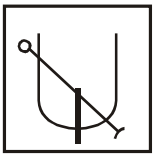
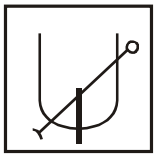
A	M	Q
+2 ↓	+8 ↓	+14 ↓
C	U	E
+4 ↓	+10 ↓	+16 ↓
G	E	U

(Consider E as 31)

Q.58 and 59: Direction Choose the water image from the alternatives given for the question figure.

58. Question Figure

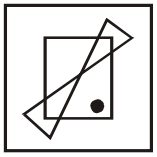


(1)  (2)  (3)  (4) 

Ans. (2)

Sol. by observation

59. Question figure



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

Ans. (3)

Sol. by observation

Q.60 and Q.61: Direction Pradyumna walked 12km west. Then he turned right and walked 5km. Again he turned right and walked 4km. Finally he Again turned right and walked 11km. Then

60. At the end, which direction Pradyumna is facing?

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

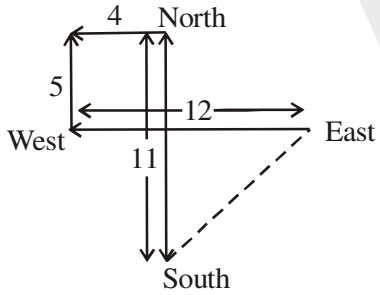
Ans. (3)

61. At what distance is Pradyumna now from the original place?

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

Ans. (4)

Sol. Q.60 and 61



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

Q.62 to 64 : Direction Observe the following pyramid of letters and decide which alternative will replace the question mark.

b
z a
w x y
s t u v
n o p q r
h i j k l m
a b c d e f g

62. hab : mgf :: jicd : ?

(1) kled (2) kdel (3) ldek (4) delk

Ans. **(1)**

Sol. By observation it becomes symmetrical figure.

63. bza : bwy :: bsv : ?

(1) bnr (2) bvs (3) bhm (4) bag

Ans. **(1)**

Sol. By observation it becomes symmetrical figure.

64. wsop : yvqp :: ptsw : ?

(1) pqr (2) puy (3) pos (4) pxb

Ans. **(2)**

Sol. By observation it becomes symmetrical figure.

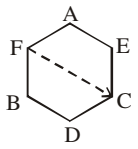
Q. 65 to 67 : Direction A, B, C, D, E and F are sitting at each corner of a hexagonal table A and D are facing opposite direction. B is sitting to the left of D. D is sitting next to C and E is sitting to the other side of C.

65. Who is sitting opposite to F ?

(1) C (2) E (3) D (4) B

Ans. **(1)**

Sol. Opposite to F is 'C'

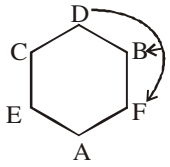


66. If the persons sitting in opposite direction interchange their places, then who will be sitting in between D and F.

(1) E (2) A (3) B (4) C

Ans. **(3)**

Sol. Betwen D and F is 'B'

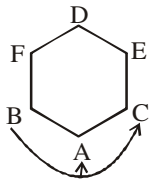


67. If only A and D interchange their places who will be in between B and C?

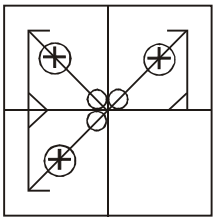
(1) A (2) F (3) E (4) D

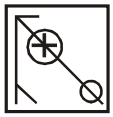
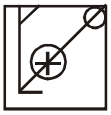
Ans. (1)

Sol. Between B and C is 'A'



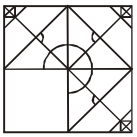
Q. 68 and 69 : Direction the following question figure is incomplete.Select the correct alternative that will complete the figure.

68. 

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

Ans. (2)

Sol. by observation

69. 

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

Ans. (1)

Sol. by observation

Q. 70 and 71 : Direction Ten years ago the ratio of ages of Sunil and Anil was 1: 7. Ten years hence the ratio of their ages will be 1: 2. Then.

70. Find Sunil's present age.

(1) 14 years (2) 40 years (3) 70 ýyears (4) 28 years.

Ans. (1)

71. What was Anil's age ten years before ?

(1) 4 years (2) 28years (3) 24 years (4) 32 years.

Ans. (2)

Sol. Q.70 to Q.71

Let Sunil's present age = S years

Anil's present age = A years

as given :- for ten years ago

$$\frac{S-10}{A-10}=\frac{1}{7}$$

$$7\times S-70=A-10$$

$$7\times S-A=60 \qquad ..(i)$$

and for after 10 years :-

$$\frac{S+10}{A+1}=\frac{1}{2}$$

$$2\times S+20=A+10$$

$$2\times S-A=-10 \qquad ...(ii)$$

subtracting equation (ii) from (i), we get

$5 \times S = 70 \therefore S = 14$ years

Sunil's present age = 14 years

then from equation (ii) A = 38 years.

$\therefore$ Anil's age ten years ago = 38 – 10 = 28 years.

Q.72 and 73 : Direction In a queue, Amruta is at the 11th place from front. Suneeta is at 26th place from behind. Sapna is at the central place between Amruta and Suneeta. If there are 60 persons in the queue, then.

72. At which place Sapna is standing from the front ?

(1) 12 (2) 24 (3) 23 (4) 26

Ans. (3)

73. At which place Sapna is standing from behind?

(1) 37 (2) 38 (3) 23 (4) 39

Ans. (2)

Sol. Q.72 and Q.73

Front $\Rightarrow$ 10 persons Amruta 11 persons Sapna 11 persons Suneeta 25 persons $\Leftarrow$ **Behind**

Q.74 and 75 : Direction In each of the following questions the question figures are given in Specific order. Select the correct alternative from the answer figures that will replace the question mark.

74. 

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

Ans. (2)

Sol. by observation

75. 

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

Ans. (3)

Sol. by observation

Q.76 and 77 : Direction In the following question in every row the numbers outside the bracket and inside the bracket are related to each other in a specific manner From the given alternative choose the correct alternative that will replace the question mark.

76. 17 (68) 28
11 (22) 14
49 (?) 9

(1) 56 (2) 105 (3) 147 (4) 63

Ans. (4)

Sol. $\frac{17\times28}{7}=68$; $\frac{11\times14}{7}=22$; $\frac{49\times9}{7}=63$

77. 24 (7) 67
53 (6) 25
82 (?) 35

(1) 11 (2) 10 (3) 9 (4) 8

Ans. (3)

Sol. $\frac{24+67}{13}=\frac{91}{13}=7$; $\frac{53+25}{13}=\frac{78}{13}=6$; $\frac{82+35}{13}=\frac{117}{13}=6$

Q.78 and 80 : Direction In each of the following questions find out the group of letters that maches the given group.

78. AUEFG EOVWX IAPQR

(1) OQRST (2) UEJKL (3) OKEFG (4) UGHIJ

Ans. (2)

Sol. A U E F G
E O V W X
I A P Q R

Here first two letters in each group of letters are vowels followed by three consecutive letters. That matches with option (2) UEJKL

79. ZXAVT WUESQ TRUPN

(1) VTRPN (2) JHFDB (3) LJOHF (4) QOMKI

Ans. (3)

Sol. Z X A V T

Q U E S Q

T R U P N

Here first two and last two letters are having difference of –2 and middle alphbet is a vowel same matches with option (3)

80. BYMN DWJZ GTKP

(1) AZEV (2) CXHS (3) HSOX (4) EVJP

Ans. (2)

Sol. In each term first and second letter are pair and third and fourth letter are pair, pair means their sum is 27.

Q. 81 to 83 Direction : The word ACTIVE is written in four different code languages. Understanding the code find out the correct code language for the word given in each of the following questions:

ACTIVE = (1) CEVKXG

(2) EFVKYI

(3) XZQFSB

(4) CFXNBL

81. GOLDEN = KRNFHR

Ans. (2)

82. ORANGE = LOXKDB

Ans. (3)

83. PURPLE = RWTRNG

Ans. (1)

Sol. Q.81 to Q.83

(1) CEVKXG +2, +2, +2, +2, +2, +2

(2) EFVKYI +4, +3, +2, +2, +3, +4

(3) XZQFSB –3, –3, –3, –3, –3, –3

(4) CFXNBL +2, +3, +4, +5, +6, +7

81. G O L D E N

+4 +3 +2 +2 +3 +4

K R N F H R

82. O R A N G E

-3 -3 -3 -3 -3 -3

L O X K D B

83. P U R P L E

+2 +2 +2 +2 +2 +2

R W T R N G

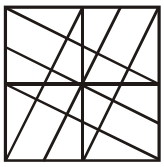
Q.84 nd 85: Direction In the given question a complex figure is given. Find out which of the figure given in the alternatives is hidden in the complex figure.

84. 

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

Ans. (1)

Sol. By observation

85. 

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

Ans. (4)

Sol. By observation

Q. 86 and 87 : Direction In the following questions numbers are given in Column I and are coded in column II. But they are not arranged according to the order of digits in the number. Identify the code language and choose the correct alternative to answer the questions:

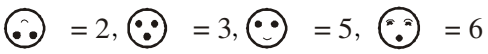
Column I	Column II
972	
463	
876	
931	
582	

86. Which of the following numbers will be coded as  ?

(1) 2165 (2) 2856 (3) 2356 (4) 2534

Ans. (3)

Sol. By observation

 = 2, = 3, = 5, = 6

Answer = 2356

87. Which of the following code will be used to indicate the number 9135 ?

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

Ans. (4)

Sol. By observation

9135 = 

Q.88 Direction : Observe the following code and answer the questions that follow :

Letters →	**T**	**M**	**G**	**O**	**D**	**N**	**R**	**S**
Digits →	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

88. Choose the correct code from the following alternatives fof the 'DONAR'.

(1) 48391 (2) 54872 (3) 45396 (4) 53971

Ans. (3)

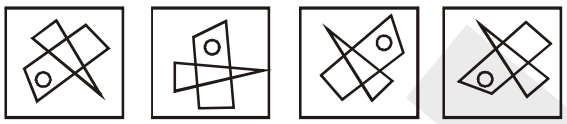
Sol. Codes for

D	O	N	A	R
↓	↓	↓	↓	↓
4	5	3	9	2

Q. 89 to 90 Direction : Choose the correct mirror image from the alternatives given for the question figure.

89. Question figure

Answer figure

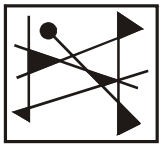


(1) (2) (3) (4)

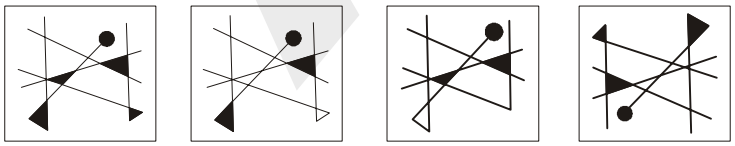
Ans. (3)

Sol. Refering to the concept of mirror image where left side looks like right side and vice a versa, it is easily found by going through all options (By eliminating other options)

90. Question figure



Answer figure



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

Ans. (Bonus)

91. In a mathematical code language
$88 - 7 = 39,\ 77 - 6 = 41,\ 99 - 5 = 74$, then $55 - 4 = ?$
(1) 31 (2) 39 (3) 49 (4) 34

Ans. **(2)**

Sol. $88 - 7^2 = 39,\ \ 77 - 6^2 = 41,\ 99 - 5^2 = 75,\ \ 55 - 4^2 = 39$

92. In a mathematical code language
$8 + 6 = 42,\ 7 + 5 = 30,\ 9 + 3 = 24$, then $6 + 4 = ?$
(1) 27 (2) 20 (3) 22 (4) 24

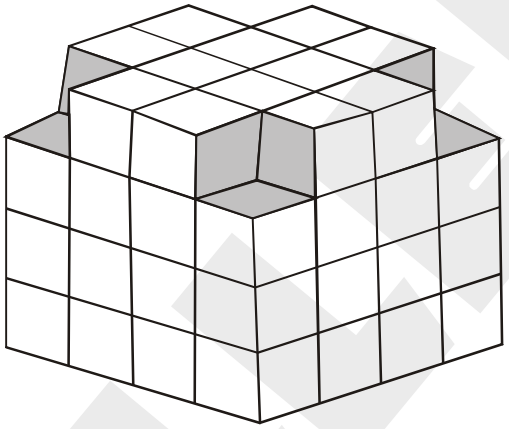
Ans. **(2)**

Sol. $8 + 6 = 12$ could be referred as (7×6)

$(8 - 1) \times 6 = 42$

Similarly we get the answer 20

Q.93 to 95: Direction The following figure is made by arranging some cubes having each side 1 unit. The figure is painted from all the outside surfaces. Observe the figure and choose the correct alternative to answer the questions.



93. Maximum how many faces of a cube are painted ?
(1) 5 (2) 3 (3) 4 (4) 2

Ans. **(2)**

Sol. By observing the figure properly we get following outcomes for coloured surfaces

No face coloured : 8 cubes
1 face coloured : 24 cubes
2 faces coloured : 12 cubes
3 faces coloured : 16 cubes

94. How many cubes have at least two faces coloured ?
(1) 12 (2) 20 (3) 28 (4) 48

Ans. **(3)**

Sol. Refer information in solution Q.93.

95. How many cubes have only one face painted ?

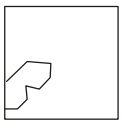
(1) 4 (2) 16 (3) 24 (4) 64

Ans. (3)

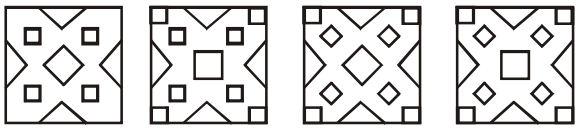
Sol. Refer information in solution Q.93.

Q.96 to 97 : Direction A square piece of paper is folded and cut at specific spots as shown in the figure. The paper when unfolded will look like as one of the alternative given. Choose the correct alternative.

96. Question figure



Answer figure

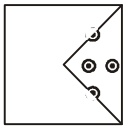


(1) (2) (3) (4)

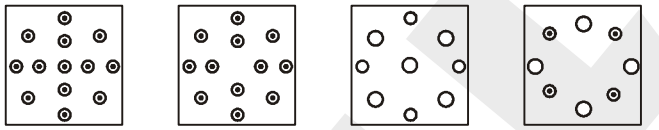
Ans. (2)

Sol. By eliminating mismatching option you could easily arrive at the answer (By good observation)

97. Question figure



Answer figure



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

Ans. (2)

Sol. By eliminating mismatching option you could easily arrive at the answer (By good observation)

Q.98 to loo : Direction Observe the following pyramid and choose the correct alternative to answer the questions.

1

2 3

6 5 4

7 8 9 10

15 14 13 12 11

16 17 18 19 20 21

28 27 26 25 24 23 22

29 30 30 31 32 33 34 36

45 44 43 42 41 40 39 38 37

98. 1352 : 13192518 :: 59138 : ?

(1) 25334132 (2) 25324133 (3) 25413332 (4) 33253241

Ans. **(1)**

Sol. By observation and by making symmetrical drawing getting answer is very easy

99. 163044 :. 213538 173143 : ?

(1) 393420 (2) 203439 (3) 183241 (4) 203440

Ans. **(2)**

Sol. By observation and by making symmetrical drawing getting answer is very easy

100. 281627 : 222123 :: 292830 : ?

(1) 352236 (2) 353622 (3) 362235 (4) 363522

Ans. **(3)**

Sol. By observation and by making symmetrical drawing getting answer is very easy