

**MAHARASHTRA
NATIONAL TALENT SEARCH EXAMINATION 2019-20
MENTAL ABILITY TEST**

Direction : In the following questions a specific group of numbers is given. From the alternatives. Find out the correct alternative that matches the given group.

1. 160 576 252
 (A) 393 (B) 466
 (C) 80 (D) 182

2. 132 736 350
 (A) 223 (B) 72
 (C) 505 (D) 992

3. 193 454 265
 (A) 572 (B) 823
 (C) 734 (D) 367

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

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

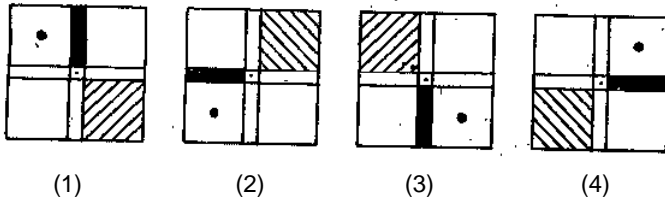
5. (1) AEVZ (2) FJQU
 (3) CQTX (4) JMOS

6. ABCDEFGHIJKLMNOPQRSTUVWXYZ

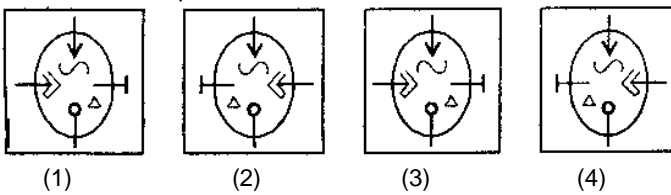
From the above alphabets which word will be formed from the given alternatives if the meaningful word formed by the 5th and 10th letter from the right and 1st and 5th letter from the left is written in the reverse order.

- (1) VEAS (2) SAEV
 (3) AVES (4) EVAS

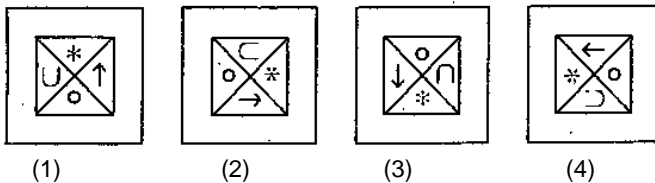
Q.7 to 9 : Direction Find the odd figure.



Q.8



Q.9

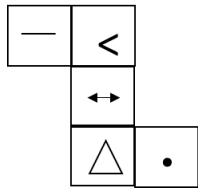


Q.10 In the following question there is a specific relation between first and second term. The same relationship exists between third and the fourth term. Considering the same relationship choose the correct alternative that will replace the question mark.

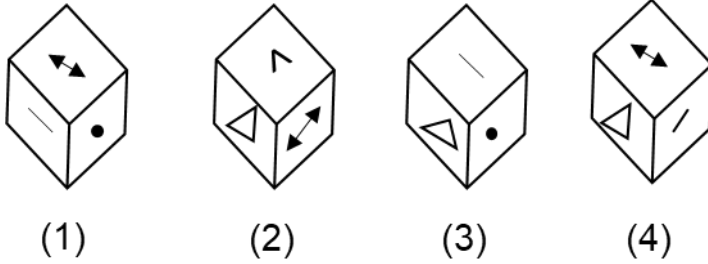
11529 : 72135 :: 152943 : ?

- (A) 213549 (B) 223649
 (C) 224194 (D) 215049

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

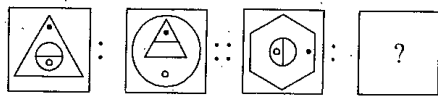


11. Which symbol will not be adjacent to the symbol '•'
 (A) < (B) —
 (C) ↔ (D) Δ
12. Which symbol will be opposite to the symbol Δ ?
 (A) ↔ (B) ⊥
 (C) < (D) —
13. Which of the following figure is the figure obtained by folding the paper to form a cube?

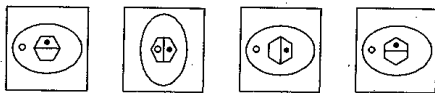


Q.14. to 16: Direction In each of the following questions, there is a specific relationship between the first and the second figure. The same relationship exists between the third and the fourth figure. Find the relation and choose the correct answer to replace the question mark.

14.



Answer Figure

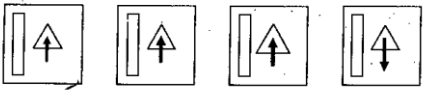


(1) (2) (3) (4)

15.

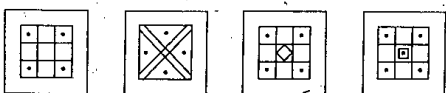
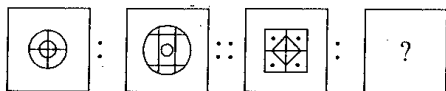


Answer Figure



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

16.



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

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

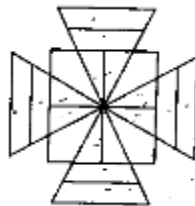
17. 4, 6, 16, 62, 308, ?
 (1) 990 (2) 1721
 (3) 698 (4) 1846
18. 6, 9, 18, 21, 42, 45, ?, ?
 (1) 90, 91 (2) 90, 92
 (3) 90, 93 (4) 90, 94
19. 7, 13, 25, 43, 67 ?
 (1) 97 (2) 98
 (3) 99 (4) 100
20. 3624, 4363, 3644, 4563, 3664, ?
 (1) 4263 (2) 4363
 (3) 4536 (4) 4763

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
22. Who plays all the games?
 (1) Atul (2) Tushar
 (3) Nishant (4) Amar
23. Which game is played by only two players?
 (1) Cricket (2) Kabaddi
 (3) Football (4) Kho-Kho

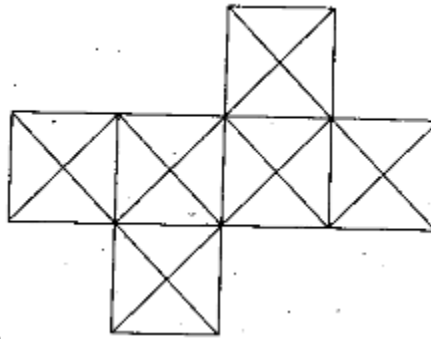
Q.24 and 25 : Direction A rhythmic arrangement of letters is given. The missing letters appear in the same order in one of the alternative answer. Choose the correct alternative.

24. ab – bc – c – ba – c
 (1) baac (2) aabb
 (3) caab (4) aaab
25. abb – baa – bb – b – ab
 (1) bbaba (2) abaaa
 (3) abbba (4) ababa
26. Find the number of triangles in the adjacent figure:



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

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



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

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 |

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) $J_{1512}O$ |

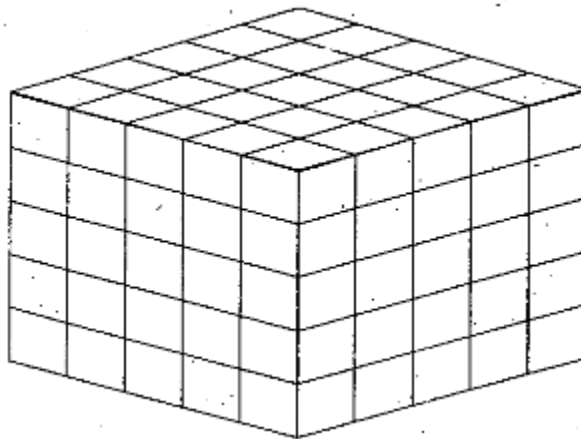
30. 29AYC, EUG33, IQ37K, ?

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

31. ZAB, WDE, SHI, NMA, ?

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

Q . 32 to 34 : Direction The balloon 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 1unit . 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 |

33. How many cubes have only red surface?

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

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

- | | |
|--------|--------|
| (1) 25 | (2) 50 |
| (3) 08 | (4) 20 |

35. If in a Mathematical code language $\Delta + \nabla = 9$, $\triangleleft + \triangleright = 13$, $\triangleright + \Delta = 11$ and $\nabla + \square = 12$ then find the value of \square from the following alternatives
- (1) 5 (2) 7
(3) 6 (4) 8

36. In a certain code language if $\$ \times rs = 35$, $E \times \$ = 30$, $rs \times U = 63$ and $U \times \neq = 36$ then find the value of \neq
- (1) 6 (2) 4
(3) 5 (4) 9

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

Digit	9	0	8	1	7	2	6	3	5	4
Symbol	*	↻	⌘	⊙	⌒	⌒	⌒	⌘	⊕	⊗

37. $\text{⌘} \text{⌒} \text{⌒} + \text{⌒} \text{⌘} \text{⊗} = ?$
- (1) $\text{⊕} \text{↻} \text{⌒}$ (2) $\text{⊙} \text{⊕} \text{⌒} \text{↻}$
(3) $\text{⊙} \text{⊕} \text{↻} \text{⌒}$ (4) $\text{⊕} \text{⌒} \text{↻}$
38. $\text{⌒} \text{⌒} \text{⌘} - \text{⊙} * \text{⌒} = ?$
- (1) $\text{↻} \text{⌘} \text{⌒}$ (2) $\text{⌘} \text{⌒}$
(3) $\text{↻} \text{⌘} *$ (4) $\text{⌘} \text{↻}$

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

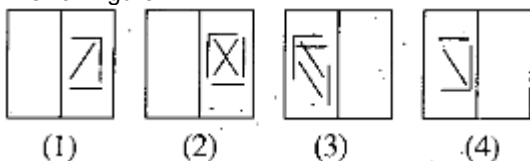
39. $\triangle \circ \square \ominus, \triangle \circ \square \ominus \triangle, \triangle \circ \ominus \square \nabla, \triangle \ominus \circ \square \nabla ?$
- (1) $\ominus \triangle \square \circ \nabla$ (2) $\ominus \triangle \circ \square \nabla$
(3) $\ominus \triangle \square \nabla \circ$ (4) $\ominus \triangle \circ \square \nabla$
40. $\alpha\beta\theta\rho\delta, \beta\alpha\theta\rho\delta, \beta\theta\alpha\rho\delta, \beta\theta\rho\delta\alpha, ?$
- (1) $\beta\theta\rho\alpha\delta$ (2) $\beta\theta\delta\alpha\rho$
(3) $\beta\theta\delta\rho\alpha$ (4) $\beta\theta\rho\delta\alpha$

Q no 51 and 52 : Direction In the 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.

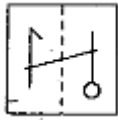
51. Question Figure:-



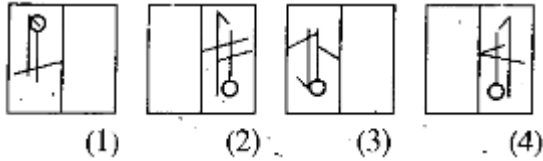
Answer Figure



52. Question Figure



Answer Figure



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 : LLII :: RMS : ?

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

54. ADE : FGJ :: KNO : ?

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

55. ? : ALKLO :: WOULD : TLRIA

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

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

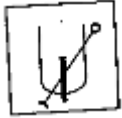
57. Choose the correct alternative to replace the question mark.

A	M	Q
C	U	E
G	E	?

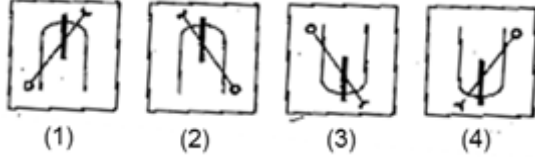
- (1) F (2) T
(3) U (4) S

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

58. Question Figure



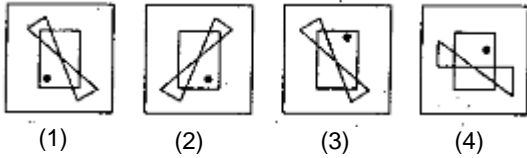
Answer Figure



59. Question Figure



Answer Figure



Q.60 and 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

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

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

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. had : mgf :: jicd : ?

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

63. bza : bwy :: bsv : ?

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

64. wsop : yvqp :: ptw : ?

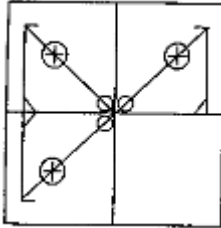
- (1) pqr
- (2) puy
- (3) pos
- (4) pxb

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 each other side of C.

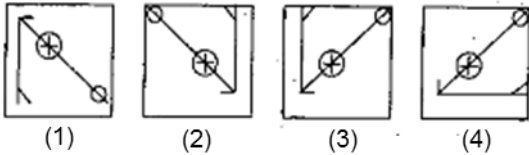
65. Who is sitting opposite to F ?
 (1) C (2) E
 (3) D (4) B
66. If the persons sitting in opposite direction interchange their places, then who will be sitting in between D and F
 (1) E (2) A
 (3) B (4) C
67. If only A and D interchange their place who will be in between B and C?
 (1) A (2) F
 (3) E (4) D

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

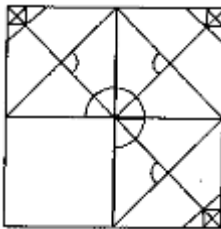
68. Question Figure



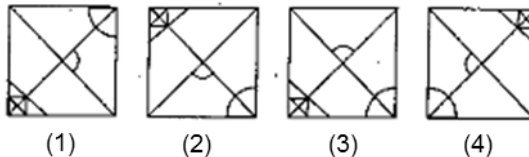
Answer Figure



69. Question Figure



Answer Figure



Q . 70 and 71 : Direction Ten years age 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 years (4) 28 years
71. What was Anil's age ten years before?
 (1) 4 years (2) 28 years
 (3) 24 years (4) 32 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

73. At which place Sapna is standing from behind?
 (1) 37 (2) 38
 (3) 23 (4) 39

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

74. Question Figure

Answer Figure

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

75. Question Figure

Answer Figure

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

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

77. 24 (7) 67
 53 (6) 25
 82 (?) 35
 (1) 11 (2) 10
 (3) 9 (4) 8

Q 78 to 80 : Direction in each of the following questions find out the group of letters that matches the given group.

78. AUEFG EOVWX IAPQR
 (1) OQRST (2) UEJKL
 (3) OKEFG (4) UGIIJ
79. ZXAVT WUESQ TRUPN
 (1) VTRPN (2) JHFDB
 (3) LJOHF (4) QOMKL
80. BYMN DWJZ GTKP
 (1) AZFV (2) CXHS
 (3) HSOX (4) EVJP

ACTIVE

- (1) CEVKXG
- (3) XZQFSB

- (2) EFVKYI
- (4) CFXNBL

81. GOLDEN = KRNFRH

- (1) CEVKXG
- (3) XZQFSB

- (2) EFVKYI
- (4) CFXNBL

82. ORANGE = LOXKDB

- (1) CEVKXG
- (3) XZQFSB

- (2) EFVKYI
- (4) CFXNBL

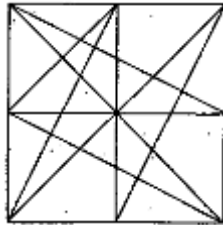
83. PURPLE = RWTRNG

- (1) CEVKXG
- (3) XZQFSB

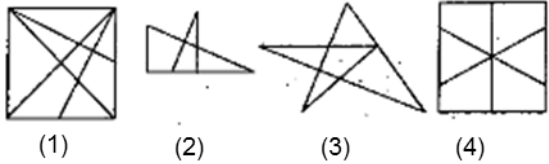
- (2) EFVKYI
- (4) CFXNBL

Q. 84 and 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.

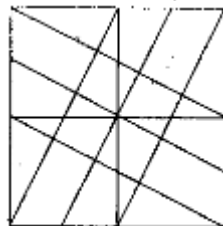
84. Question Figure



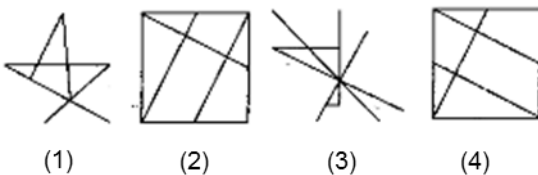
Answer Figure



85. Question Figure



Answer Figure



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
(3) 2356

- (2) 2856
(4) 2534

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

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

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

Letters	A	T	M	G	O	D	N	R	S
Digits	9	8	7	6	5	4	3	2	1

88. Choose the correct code from the following alternatives for the word 'DONAR'

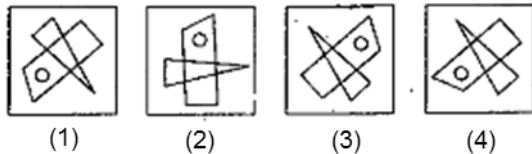
- (1) 48391
(3) 45392
- (2) 54872
(4) 53971

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

89. Question Figure



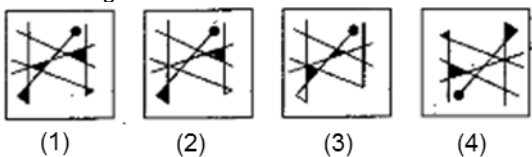
Answer Figure



90. Question Figure



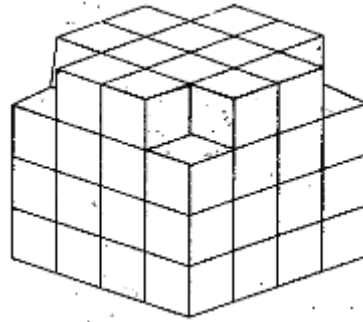
Answer Figure



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

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

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



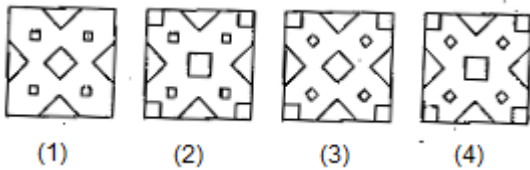
93. Maximum how many faces of a cube are painted?
 (1) 5 (2) 3
 (3) 4 (4) 2
94. How many cubes have at least two faces coloured?
 (1) 12 (2) 20
 (3) 28 (4) 48
95. How many cubes have only one face painted?
 (1) 4 (2) 16
 (3) 24 (4) 64

Q . 96 and 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



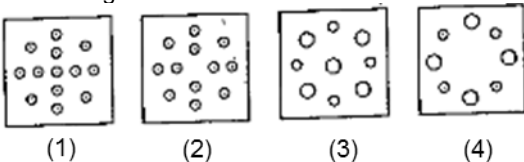
Answer Figure



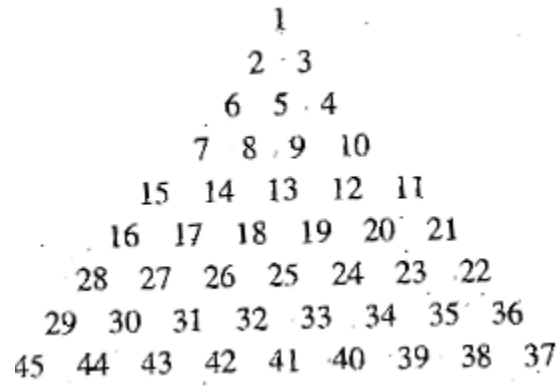
97. Question Figure



Answer Figure



Q . 98 to 100 ; Direction Observe the following pyramid and choose the correct alternative to answer the questions



- 98.** 1352 : 13192518 :: 59138 : ?
(1) 25334132 (2) 25324133
(3) 25413332 (4) 33253241
- 99.** 163044 : 213538 :: 173143 : ?
(1) 393420 (2) 203439
(3) 183241 (4) 203440
- 100.** 281627 : 222123 :: 292830 : ?
(1) 352236 (2) 353622
(3) 362235 (4) 363522