



# NTSE (STAGE-II) TEST SERIES

## MENTAL ABILITY TEST (MAT)

### TEST #2

#### PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. Duration of Test is **120 Minutes** and Questions Paper Contains **100 Questions**. Total Marks are **100**.
2. Answers are to be given on a separate OMR sheet.
3. There are 100 questions in this test. All are compulsory.
4. Please follow the instructions given on the OMR sheet for marking the answers.
5. Mark your answers for questions 1–100 on the OMR sheet by darkening the circles.
6. Every correct answer will be awarded one mark. **THERE IS NO NEGATIVE MARKING.**
7. If you do not know the answer to any question, do not waste time on it and pass on to the next one. Time permitting, you can come back to the questions, which you have left in the first instance and attempt them.
8. Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.
9. Rough work can be done anywhere in the booklet but not on the OMR sheet/loose paper.
10. Please return the OMR sheet to the invigilator after the test.

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**Directions (Q.1 to Q.5) :** Read the following information carefully and give the answer of following questions:

A vending machine has five switches which when operated give Coca-Cola, 7-up, Mirinda, Limca and Pepsi depending upon the switches that are turned on.

The machine is such that each switch supplies two different drinks and each drink is supplied by two different switches. If two switches are turned on, the common drinks if any, nullify each other and will not come out at all. To get the drinks that one wants, one has to turn on the right combination of switches, put in the money, press the delivery button, and get the drink.

Use the following information and answer the question that follow.

Turning On Switches :

- (i) 1 and 3 gives 7-up and Mirinda.
- (ii) 1 and 2 gives Coca-cola and Pepsi
- (iii) 1 and 4 gives Limca, Coca-cola, Mirinda and Pepsi

Switches 1, 2, 3, 4 and 5 do not supply 7-up, Limca, Coca-cola, Mirinda and Pepsi respectively

1. Which drinks are supplied by turning on switches 2 and 3 ?
  - (1) Mirinda, Limca, 7-up
  - (2) Pepsi, Limca, 7-up
  - (3) Coca-cola and Mirinda
  - (4) Coca-cola, Mirinda, Pepsi and 7-up
2. Which drink is supplied by turning on switches 2 and 4?
  - (1) Coca-cola, Limca and Mirinda
  - (2) Pepsi, Limca and Mirinda.
  - (3) Mirinda and Pepsi
  - (4) None of these
3. Coca-cola is one of the drinks which will be supplied by turning on switches.
  - (1) 1 and 3                      (2) 1 and 5
  - (3) 2 and 4                      (4) 2 and 5

4. Which switches should on to get just Limca & Coca-cola?
  - (1) 2 and 3                      (2) 1, 2, 3 and 5
  - (3) 1, 3 and 4                      (4) 2, 3 and 4
5. Which drinks are supplied by turning on switches 1, 2 and 3?
  - (1) Pepsi, Mirinda, Coca-cola, 7-up
  - (2) Pepsi, Coca-cola, Limca, 7-up
  - (3) Mirinda, 7-up, Limca, Coca-cola
  - (4) Coca-cola and 7-up
6. 'Sports' is related to 'Logo' in the same way as 'Nation' is related to
  - (1) Emblem                      (2) Animal
  - (3) Ruler                      (4) Anthem

**Directions (Q.7 to Q.10) :** In each of the following questions contains a pair of terms on the left side of (: :), which exhibit a certain relation between them. Find the term which exhibits similar relations with the term in the right side of (: :).

7. 6 : 30 :: 10 : ?
  - (1) 110                      (2) 90
  - (3) 80                      (4) 125
8. 12 : 3 :: 30 : ?
  - (1) 5                      (2) 6
  - (3) 7                      (4) 9
9. 2143 : 2251 :: 3531 : ?
  - (1) 3241                      (2) 3441
  - (3) 3134                      (4) 3254
10. 27 : 125 :: 343 : ?
  - (1) 125                      (2) 1331
  - (3) 512                      (4) 1024
11. In a certain language CALCUTTA is coded as GEPGYXXE, which word would be coded as FSQFCE ?
  - (1) BOMBAY                      (2) BOMYAB
  - (3) BOBAYM                      (4) BOMBYA
12. If PAINTER is written in a code language as NCGPRGP, then REASON would be written as:
  - (1) PCYQMN                      (2) PGYQMN
  - (3) PGYUMP                      (4) PGYUPM

13. In a certain code, if **TREE** is coded as **7100**, **FROG** as **2159**, how is **FREE** coded in that code ?

- (1) 2100 (2) 3100 (3) 1003 (4) 1002

14. If **REASON** is coded as 5 and **BELIEVED** as 7, what is the code number for **GOVERNMENT** ?

- (1) 6 (2) 8 (3) 9 (4) 10

15. If **finger** is called **toe**, **toe** is called **foot**, **foot** is called **thumb**, **thumb** is called **ankle**, **ankle** is called **palm** and **palm** is called **knee**, which one **finger** has a different name ?

- (1) Thumb (2) Ankle  
(3) Knee (4) Palm

**Directions (Q.16 to Q.20) :** Choose the odd one out.

16. (1) Calculator (2) Computer

- (3) Piano (4) Typist

17. (1) RAT (2) CAT

- (3) BAT (4) CAR

18. (1) 224 (2) 339 (3) 448 (4) 111

19. (1) 751 (2) 734 (3) 981 (4) 853

20. (1) 2T0 (2) 2U2 (3) 1M3 (4) 0I9

**Directions (Q.21 to Q.25) :** Choose which number in sequence replaces the question mark (?).

21. 90, 180, 12, 50, 100, 200, ?, 3, 50, 4, 25, 2, 6, 30, 3

- (1) 150 (2) 175 (3) 225 (4) 250

22. 9, 7, 14, 11, 33, 28, ?, 133, 931

- (1) 64 (2) 46 (3) 140 (4) 123

23. 6, 12, 23, 44, 85, ?

- (1) 166 (2) 174 (3) 165 (4) 168

24. 92, 23, 27, 9, 12, 6, ?

- (1) 20 (2) 16 (3) 8 (4) 10

25. 495, 270, 126, 45, 9, ?

- (1) 8 (2) 6 (3) 5 (4) 0

**Directions (Q.26 to Q.30) :** Choose which term in sequence replaces the question mark (?).

26. PMT, OOS, NQR, MSQ, ?

- (1) LUP (2) LVP  
(3) LVR (4) LWP

27. BYDW, FUHS, JQLO, NMPK, ?

- (1) RITG (2) RJGH  
(3) IRGT (4) HPIN

28. BYCXA, EVFUD, HSIRG, KPLOJ, ?

- (1) MNLLOL (2) NMOLM  
(3) QJRIP (4) PKQJO

29. UTRQU, QPNMT, MLJIS, IHFER, ?

- (1) EDCAQ (2) EDBAQ  
(3) IHFGP (4) KJHGP

30. CFIJ, RUXY, EHKL, PSVW, ?

- (1) HILM (2) UXZA  
(3) SVYZ (4) MOSV

31. If **CAMERA** is coded as **CMRCMR** in a certain code language, how would you code **CHAPRA** in that code language ?

- (1) CARCAR (2) CARHPA  
(3) HPACAR (4) RACRIC

32. If **RED** is written as **24** and **GREEN** is written as **44** then **WHITE** will be written as:

- (1) 59 (2) 45 (3) 60 (4) 65

33. T is the son of P. S is the son of Q. T is married to R. R is Q's daughter. How is S related to T ?

- (1) Brother (2) Uncle  
(3) Father-in-law (4) Brother-in-law

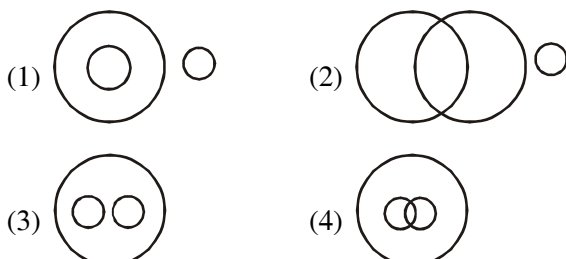
34. Pointing to a man in a photograph, Anita said "His brother's father is the only son of my grandfather". How is the Anita related to the man in the photograph ?

- (1) Mother (2) Aunt  
(3) Sister (4) Daughter

35. In a class of eighth standard, among students passed in Maths, Rakhee stands serially 21<sup>st</sup> and 34<sup>th</sup> from bottom. 4 students were absent. 9 students failed. If there are 37 boys in the class, find the number of girls in the class.

- (1) 30 (2) 55 (3) 67 (4) 68

36. There are five friends A, B, C, D and E. A is shorter than B but taller than E, C is tallest, D is little shorter than B and little taller than A. If they are standing in the order of their heights who will be in the middle ?  
 (1) D (2) C (3) A (4) B
37. A postman was returning to the post office which was in front of him to the North. When the post office was 100 metres away from him, he turned to the left and moved 50 metres to deliver the last letter at shantivilla. He then moved in the same direction for 40 metres, turned to his right and moved 100 metres. How many metres was he away from the post office ?  
 (1) 0 (2) 90 (3) 150 (4) 100
38. A man is facing South. He turns  $135^\circ$  in the anticlockwise direction and then  $180^\circ$  in the clockwise direction. Which direction is he facing now ?  
 (1) North-East (2) North-West  
 (3) South-East (4) South-West
39. Shashikant walks northwards. After a while, he turns to his right and cover a distance of 2 kms. Then turns to his left and cover a distance of one kms, then he turns to his left again. In which direction is he moving now ?  
 (1) North (2) South  
 (3) East (4) West
40. One evening before sunset two friends Amit and Sunil were talking to each other face to face. If Sunil's shadow was exactly to his left side, which direction was Amit facing ?  
 (1) North (2) South  
 (3) West (4) Data inadequate
41. Which of the following represents the relationship between animals, elephants and lions ?



**Directions (Q.42 to Q.44) :** Information was gathered based on observations of readers of three newspapers A, B and C. 26% people read newspaper A, 25% people read newspaper B, 14% people read newspaper C, 11% people read both newspapers A and B, 10% people read both newspapers B and C, 9% people read both newspapers A and C and 0% people read only newspaper C. Based on this information answer the following questions.

42. What is the average of readers of all three newspapers ?  
 (1) 1 (2) 4 (3) 5 (4) 6
43. What is the average of people who read both A and B newspaper but do not read C newspaper ?  
 (1) 2 (2) 4 (3) 5 (4) 6
44. What is the average number of readers who read at least one newspaper ?  
 (1) 40 (2) 50 (3) 60 (4) 65
45. Which letter is in midway between H and R in the English alphabets ?  
 (1) K (2) L (3) M (4) N
46. Which of the following alternatives will make the equation  $6 \times 4 + 2 = 16$  correct after interchanging two operations and two digits ?  
 (1) + and  $\times$ , 2 and 4 (2) + and  $\times$ , 2 and 6  
 (3) + and  $\times$ , 4 and 6 (4) + and  $\times$ , 6 and 2
47. Arrange the words given below in a meaningful sequence.  
 a. Presentation b. Recommendation  
 c. Arrival d. Discussion  
 e. Introduction  
 (1) c, e, a, d, b (2) c, e, d, b, a  
 (3) e, c, a, b, d (4) e, c, d, a, b
48. Arrange the following in a logical order :  
 a. Akbar b. Shah Jahan  
 c. Humayun d. Jahangir  
 (1) a, b, c, d (2) c, b, a, d  
 (3) c, a, d, b (4) c, a, b, d

49. Arrange the words given below in a meaningful sequence.

1. Country                      2. Furniture  
3. Forest                        4. Wood  
5. Trees

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

50. Arrange the words given below in a meaningful sequence.

1. District    2. Village    3. State    4. Town  
5. City

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

51. A wrist watch which is running 12 minutes late on a Sunday noon is 16 minutes ahead of the correct time at 12 noon on the next Sunday. When is the clock 8 minutes ahead of time ?

- (1) Thursday 10 am                      (2) Friday noon  
(3) Friday 8 pm                          (4) Tuesday noon

52. Rajan starts sleeping between 2 pm and 3 pm and he wakes up when his watch shows such a time that the two hands (i.e., hour-hand and minute-hand) interchange the respective places. He wakes up between 3 pm and 4 pm on the same day. How long does he sleep ?

- (1)  $55\frac{5}{13}$  min                      (2)  $110\frac{10}{13}$  min  
(3)  $54\frac{6}{13}$  min                      (4) None of these

**Direction (Q.53 & Q.54) :** A 12 dial clock has its minute hand defective. Whenever it touches dial 12, it immediately falls down to 6 instead of running smoothly(the hour hand remains unaffected during that fall). It was set right at 12 'O' clock in the noon.

53. What was the actual time when the minute hand of the clock touched dial 9 for the 5<sup>th</sup> time?

- (1) 2 : 15                              (2) 3 : 00  
(3) 5 : 15                              (4) 6 : 45

54. If the actual time is 10 : 10, what is the position of the hour hand in that defective clock?

- (1) Between 2 and 3                      (2) Between 4 and 5  
(3) Between 10 and 11                      (4) Between 3 and 4

55. In the following question, what digit will come in place of shaded part ?

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

(1) 

	4	2	
6	5	1	0
7	8	6	5
	6	2	

(2) 

	3	5	
6	0	1	5
5	2	7	8
	9	1	

(3) 

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

(4) 

	2	4	
6	0	5	1
5	0	7	8
	9	2	

56. In the following figure digits follow a certain pattern. What will replace question mark (?) sign ?

4	1	11	11	3
3	3	1	6	5
9	2	9	4	2
6	4	8	9	3
5	1	?	1	4

- (1) 6                      (2) 7                      (3) 8                      (4) 9

57. If a boy is asked to put in a basket one mango when ordered one, one orange when ordered two, one apple when ordered three and is asked to take out from the basket one mango and one orange both when ordered four. How many total fruits will be in the basket if sequence of order is as under

1 2 3 3 2 1 4 2 3 1 4 2 2 3 3 1 4 1 1 3 2 3 4

(1) 10 (2) 11 (3) 12 (4) 13

58. If in a certain code 'facing problems with health' is coded as 'mlp hlt ngi snk', 'rise with every challenge' is coded as 'snk rtv lne riy', 'facing challenge each day' is coded as 'ngi riy nop hus', 'health problems on rise' is coded as 'hlt sa rtv mlp' then whose code can be 'riy snk mlp'

- (1) problems every day
- (2) with health day
- (3) facing every challenge
- (4) challenge with health

59. (a)  $P \times Q$  means Q is mother of P ;  
 (b)  $P + Q$  means P is father of Q ;  
 (c)  $P - Q$  means P is brother of Q ;  
 (d)  $P \div Q$  means Q is sister of P.

Which of the following means 'M is niece of T' ?

- (1)  $M \div D + T \times R$       (2)  $T - D + R \div M$
- (3)  $T \times D + R \div M$       (4)  $D \div M + R - T$

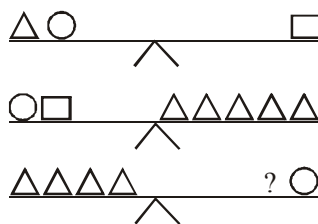
60. Consider a 99 digit number created by writing side by side the first fifty four natural numbers as follows :

1 2 3 4 5 6 7 8 9 10 11 12 13 ----- 53 54

The above number when divided by 8 will leave a remainder of

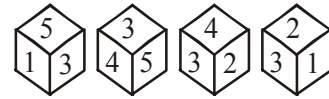
(1) 6 (2) 4 (3) 2 (4) 0

61. Figure below represent a balance which symbol replaces (?)



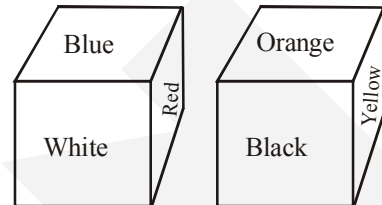
(1) □ (2) ○ (3) △ (4) △ ○

62. Four positions of a dice are shown opposite to which face number 6 will appear.



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

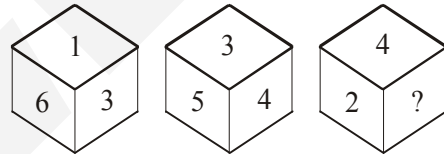
63. Six sides of a cube are coloured in the following manner.



If Blue and Orange are opposite and Red is on the top, which colour will be at the bottom ?

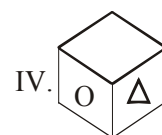
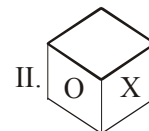
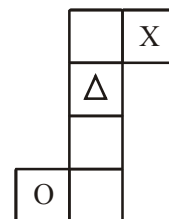
- (1) Black (2) White
- (3) Orange (4) Yellow

64. Three positions of the same dice are given below. Observe the figures carefully and tell which number will come in place of '?'.



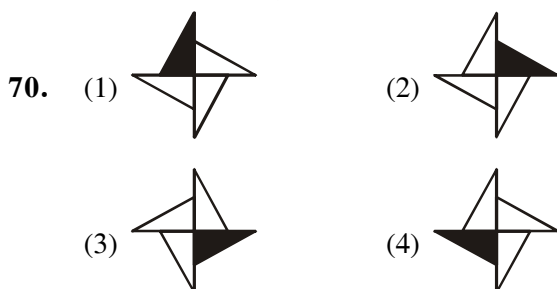
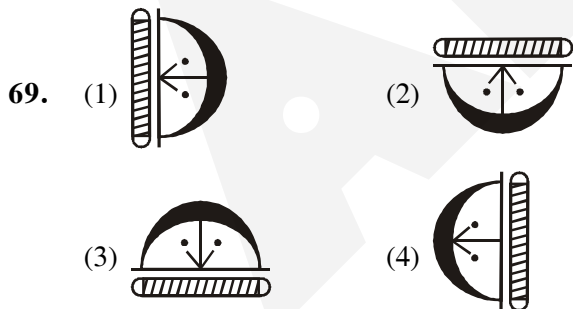
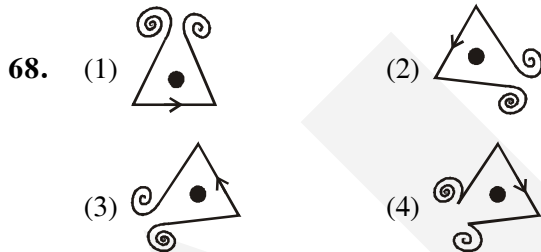
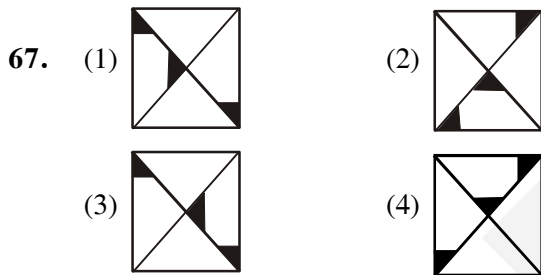
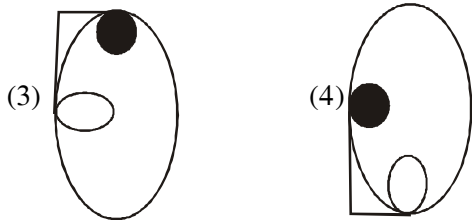
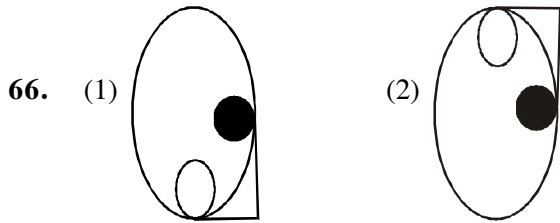
(1) 1 (2) 6 (3) 3 (4) 5

65. In the following question, the figure is folded to form a box. Choose from among the alternatives the box or boxes that can be formed by folding the figure.

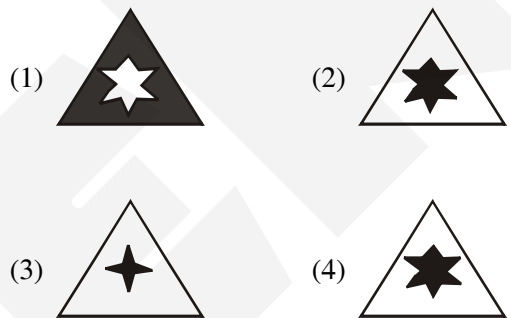


- (1) Both II and IV
- (2) Both I and II
- (3) IV only
- (4) II only

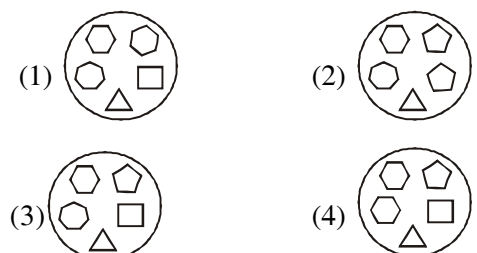
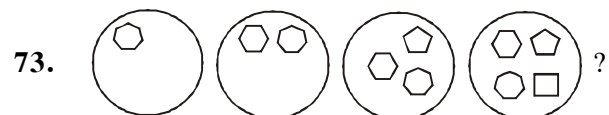
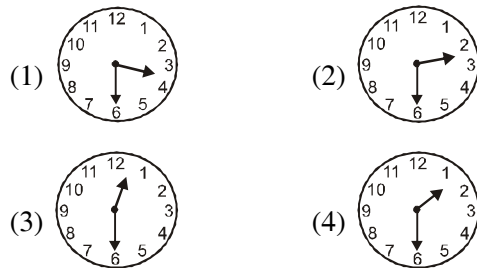
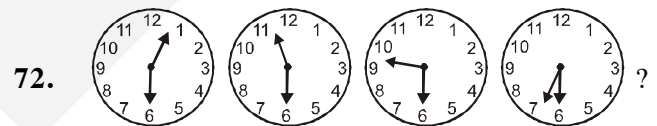
**Directions (Q.66 to Q.70) :** In the following questions, three figures are alike, while one is different. Identify the one which is different.



71. Two sets of figures are given in the question. Figures A, B, C and D are problem-figures and figures 1, 2, 3 and 4 are answer figures. There is a definite relationship between figures A and B. Establish a similar relationship between C and D by choosing a figure D from the answer-figures.



**Directions (Q.72 & Q.73) :** Complete the figural series, choosing the correct figure from the given alternatives.



**Directions (Q.74 to Q.76) :** The letters in the words given below are coded using symbols. The symbols are in the same order as the letters. Identify the symbols for each letter and find correct answer in the following questions.

NEAT - qbdp

GAP - ydm

BUMP - shlm

TIRE - pxfb

**74.** PAINT can be coded as

(1) pdxqm (2) mqxdp

(3) mdxqp (4) qdxpm

**75.** GAME can be coded as

(1) ydlb (2) dybl

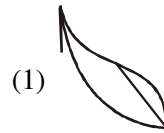
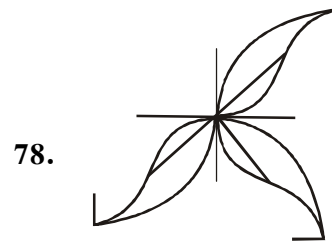
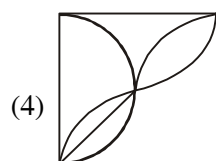
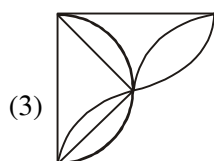
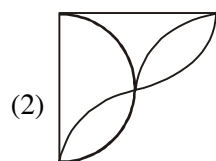
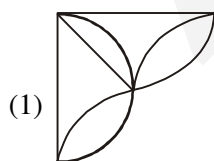
(3) bydl (4) ldby

**76.** The code x l s f h b represent the word

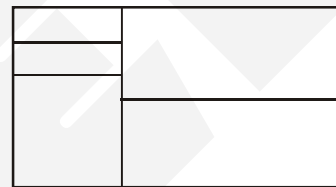
(1) BUMPER (2) IMBRUE

(3) GARNET (4) NATURE

**Directions (Q.77 & Q.78) :** Find the missing part of the given figure from the alternatives.

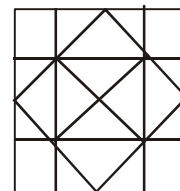


**79.** How many rectangles are there in the given figure ?



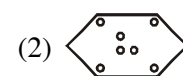
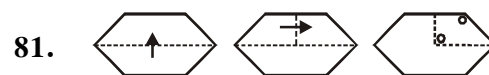
(1) 10 (2) 9 (3) 6 (4) 5

**80.** How many squares are there in the given figure ?

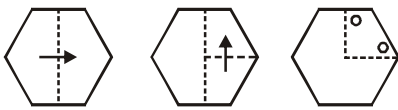
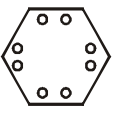
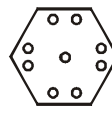
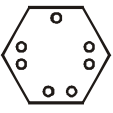
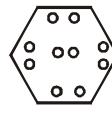
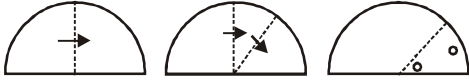
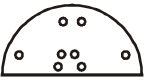
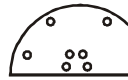




(1) 12 (2) 11 (3) 10 (4) 8

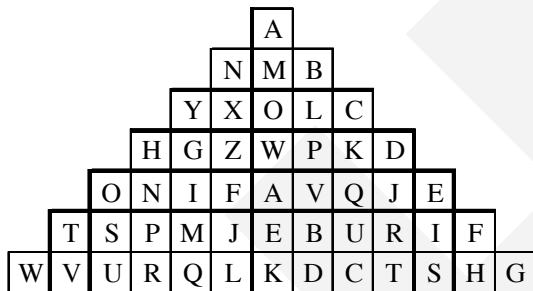
**Directions (Q.81 to Q.83) :** In the questions given, how a sheet a paper is folded and punched is shown by figures. If the paper is unfolded how does it appear ? Choose the correct answer from among the alternatives given.





82. 
- (1)  (2) 
- (3)  (4) 
83. 
- (1)  (2) 
- (3)  (4) 

**Directions (Q.84 to Q.87) :** A pyramid of letters is given below. Study the pyramid and select the correct alternative to fill in the missing term.



84. HNPRQ, GIMQL, ZFJLK, ?, PVBDC  
 (1) QLKDC (2) WAEKD  
 (3) WPVBD (4) IFAVQ
85. FHSIE, ISTRJ, RTCUQ, UCDBV, ?  
 (1) JLKDC (2) LPVBD  
 (3) BDKEA (4) BDCTS
86. YGIM, LOXY, ZFJL, ?  
 (1) GUQK (2) JQVA  
 (3) PWZG (4) KPWZ
87. AMONB, YGIHZ, ?  
 (1) LPVBD (2) FAVQJ  
 (3) OSUTP (4) LPVQJ

88. Pankaj met his friend three days ago. He told his friend that he had his last exam five days later. He met his friend again, three days after the exam. 6 days after he met his friend after the exam they left for a vacation. The day on which they left for a vacation is Saturday. What is today ?  
 (1) Tuesday  
 (2) Monday  
 (3) Saturday  
 (4) Wednesday
89. How many Mondays are there in a particular month of a particular year. If the month ends on Wednesday ?  
 (1) 4 (2) 5  
 (3) 6 (4) Can't Say
90. Karan was born on 29<sup>th</sup> February 1972. How many birthdays he celebrate upto 2008 ?  
 (1) 8 (2) 9 (3) 10 (4) 11

**Directions (Q.91 to Q.95) :** A cube of 5 cm has been painted on its surfaces in such a way that two opposite surfaces have been painted blue and two adjacent surfaces have been painted red. Two remaining surfaces have been left unpainted. Now the cube is cut into smaller cubes of side 1 cm each.

91. How many cubes will have no side painted ?  
 (1) 48 (2) 27 (3) 45 (4) 36
92. How many cubes will have at least red colour on its surfaces ?  
 (1) 50 (2) 48 (3) 45 (4) 46
93. How many cubes will have at least blue colour on its surfaces ?  
 (1) 48 (2) 45 (3) 32 (4) 50
94. How many cubes will have only two surfaces painted with red and blue colour respectively ?  
 (1) 12 (2) 16 (3) 20 (4) 18
95. How many cubes will have three surfaces coloured ?  
 (1) 3 (2) 4 (3) 2 (4) 8

**Directions (Q.96 to Q.100) :** Study the following information to answer the given questions :

In a certain code 'for profit order now' is written as 'ho ja ye ga', 'right now for him' is written as 'ga ve ja se', 'place order for profit' is written as 'ga bi ho ye' and 'only in right order' is written as 've du ye zo'.

**96.** What is the code for 'him'?

- (1) ga      (2) ve      (3) ja      (4) se

**97.** What does 'bi' stand for ?

- (1) profit                      (2) order  
(3) place                      (4) for

**98.** 'fo ve ye' could be a code for which of the following ?

- (1) order right spirits      (2) only in profit  
(3) order only him      (4) place in right

**99.** What is the code for 'profit' ?

- (1) ye                              (2) ga  
(3) bi                              (4) ho

**100.** Which of the following may represent 'only for now' ?

- (1) ja bi zo                      (2) du zo ga  
(3) zo ga ja                      (4) zo ga ye