Direction (For Question No. 1 and 2) : In each of the following questions write which term in sequence replaces the question mark?

1. BJ, DL, HP, PX, ?
   (1) FN (2) FX
   (3) TB (4) VD

2. AYCD, EUGH, IQKL, ?
   (1) AYCD (2) BXDE
   (3) MNAB (4) MZBC

Direction (For Question No. 3 to 5) : Directions Find the odd term

3. (1) 141 (2) 101
   (3) 107 (4) 131

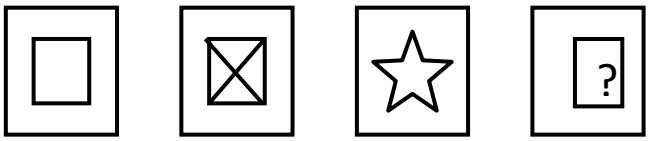
4. (1) 6131 (2) 2191
   (3) 3312 (4) 3164

5. (1) DHLP (2) FNUB
   (3) BDFH (4) KVGR

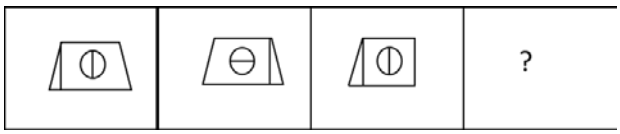
6. In the following question a specific group of numbers is given. From the given alternatives, find out the right number which matches the given group.
   341, 571, 781
   (1) 634 (2) 891
   (3) 909 (4) 990

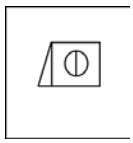
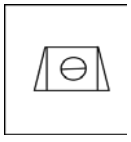
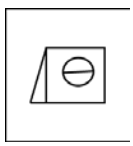
7. In a mathematical language if + means +, - means x, + mean + and x means – are used then,
   $(200+5)\div 25-(20-5)\times 10=?$
   (1) 125 (2) 100
   (3) 155 (4) 40

Direction (For Question No. 8 and 9) In each of the following question is there is a specific relationship between the first and second figure. The same relationship exists between the third and the fourth figure which will replace the question mark. Select the correct term from the given alternative.

8. 

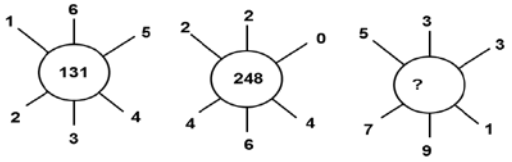
   (1) 
   (2) 
   (3) 
   (4) 

9. 

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

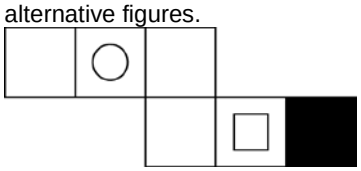
10. Six teachers of a workshop have sat down for a photo session as shown below. A is sitting in between K and S. M is at a corner. There is no one sitting in between N and S. Then where is the person 'J' sitting?
(1) At the central position between K and M
(2) At the central position between N and A
(3) At the central position between S and K
(4) At the central position between M and A

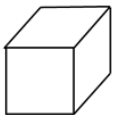
11. Find out the correct number from the given alternative in replace the question mark.

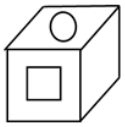


(1) 132 (2) 262
(3) 274 (4) 320

12. If the figure given along side is folded to construct a cube, find out the correct cubical figure from the given alternative figures.



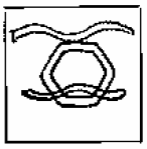
(1)  (2) 

(3)  (4) 

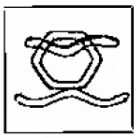
13. In a certain code language ZEAL = 11, written then in that language BEAT = ?
(1) 7 (2) 13
(3) 14 (4) 19

14. On a playground J, K, L, M, N, O, P, Q, R are sitting in one row to watch a cricket match. L is at the right side of M and is occupying third place from N at the right side. K is sitting either at first or last position. Q is in between O and P. O sitting at the third position at the left side of K. O is sitting next to 'J' at the right side. Who is sitting at the centre among them?
(1) L (2) O
(3) J (4) Q

15. The following figure is rotated in anticlockwise direction and its mirror image is obtained. Select the correct mirror image from four alternatives given.



(1)  (2) 

(3)  (4) 

Directions for Question No. 16 to 17 : In a certain code language the word EXPAND has been written in four different code languages. Understanding the code, find out the correct code language for the work given in each of the following questions.

EXPAND

(1) FYQBOE
(2) EYRDRI
(3) EPNXAD
(4) DWOZMC

16. (1) SOLVE SPNYI

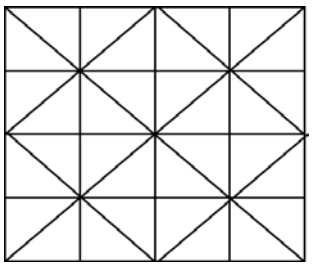
17. (2) LARGE KZQFD

Direction for Question No. 18 and 19 : Find the odd figure

18. (1) 
(2) 
(3) 
(

19. (1) 
(2) 
(3) 
(4) 

20. Observe the adjoining figure and answer the following question. Choosing the correct alternative.
How many isosceles trapezium are in the figure?



(1) 16
(2) 10
(3) 8
(4) 14

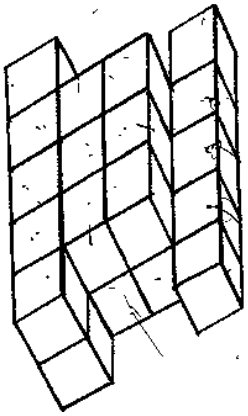
Direction For Question No. 21 and 22 : Directions Observe the following pyramid of numerals and decide which alternative will be in place of question mark in each of the following

8
9 36 35
10 37 56 55 34
11 38 57 68 67 54 33
12 39 58 69 70 71 66 56 32
13 40 59 60 61 62 63 64 65 52 31
14 41 42 43 44 45 46 47 48 49 50 51 30
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

21. 95761 : 105844 : : ? : 346648
(1) 377149 (2) 353331
(2) 356763 (4) 363840

22. 95670 : 70579 : : 356766 : ?
(1) 663465 (2) 677063
(3) 634623 (4) 587061

Direction for Question number 23 and 24 : In the following figure the arrangement of small blocks is given observe it and answer the following question.



23. What is the total number of small blocks?
(1) 17 (2) 24
(3) 27 (4) 30

24. Find the total number of blocks whose two surfaces are seen
(1) 11 (2) 13
(3) 15 (4) 17

Direction Question Number 25 and 26 : In the following square numbers are written with a specific rule. Find the rule and decide which alternative will be in place of question mark.

25.

13	61	2
?	5	29
10	122	26

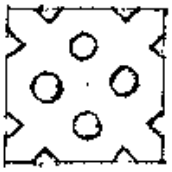
(1) 49 (2) 58
(3) 71 (4) 102

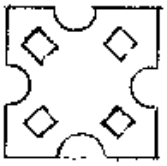
26.

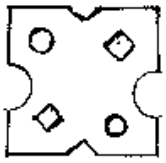
-7	1	28
-4	17	8
?	56	73

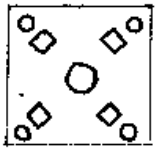
(1) -1 (2) 12
(3) 41 (4) 63

27. 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 shown in area of the alternatives. Select the correct alternative.

(1) 

(2) 

(3) 

(4) 

Direction Question No. 28 and 29 : In each of the following questions, write which term in sequence replaces the question mark.

28. 2, 6, 21, 88, ?
(1) 440 (2) 356
(3) 445 (4) 352

29. 6, 30, 18, 128, ?
(1) 36 (2) 38
(3) 98 (4) 90

Direction Question No. 30 and 31 : Containing two groups of letters. In chart one the rows and columns are labelled with 0 to 4 number. In chart two rows and columns are labelled with the numbers 5 to 9. The letter in the chart is identified firstly by its row number and then by its column number. For example 5 is denoted by 22, 41 number.

CHART I

	0	1	2	3	4
0	F	O	M	S	R
1	S	R	F	O	M
2	O	M	S	R	F
3	R	F	O	M	S
4	M	S	R	F	O

CHART II

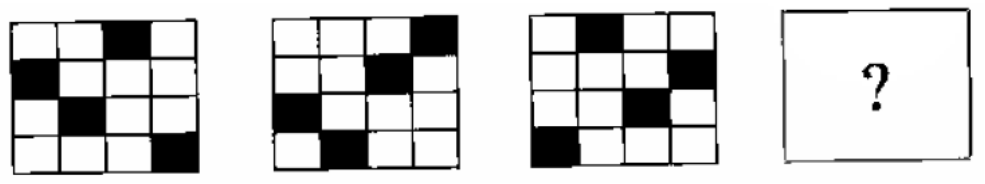
	5	6	7	8	9
5	A	T	D	I	P
6	I	P	A	T	D
7	T	D	I	P	A
8	P	A	T	D	I
9	D	I	P	A	T

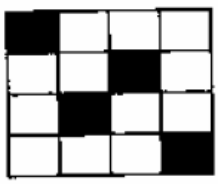
30. Which group of words represent the word MOST?
(1) 40, 44, 22, 89 (2) 33, 20, 11, 79
(3) 21, 00, 03, 88 (4) 02, 13, 34, 56

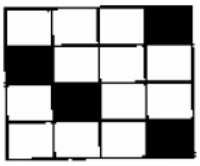
31. Which group of words represent the word ROAD?
(1) 42, 32, 79, 58 (2) 23, 32, 98, 99
(3) 11, 13, 67, 69 (4) 04, 20, 55, 78

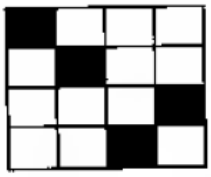
32. A school boy was having Deepavali vacation from 11 October and 28 October 2012. It was Monday on the 10th Day before the start of the vacation. After the vacation, the school excursion was arranged on the 7th day from the reopening of the school. On which Day was the school excursion arranged.
(1) Sunday (2) Friday
(3) Thursday (4) Tuesday

Direction For Question No. 33 and 34 : In each of the following, the question figures change in a particular order. Decide which figure from the given alternatives will replace the question mark.

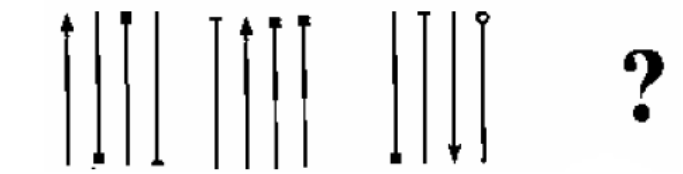
33. 

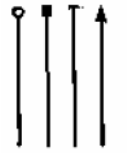
(1) 

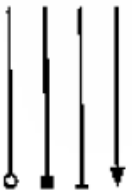
(2) 

(3) 

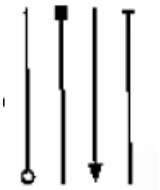
(4) 

34. 

(1) 

(2) 

(3) 

(4) 

Direction Question No. 35 and 36 : In each of the following questions there is a specific relationship between the first and second term. The same relationship exists between third and fourth term. Understanding this relationship, find out the correct alternative to replace the question mark.

35. AMK : SPJ : : KNM : ?
(1) CQN (2) BQL
(3) CQL (4) BLQ

36. N 9 M : P 11 Q : : V 14 T : ?
(1) X 17 Z (2) X 16 W
(3) X 15 Y (4) X 16 X

37. Seema went 9 km to west. She turned to right and went 7 km. She turned to left and went 8 km. From there she turned back and went 11 km. Then she turned to right are went 7 km.
How much distance is she from origin?
(Seema turns every time in 90^0 angle)
(1) 9 km (2) 6 km
(3) 3 km (4) 7 km

38. A rhythmic arrangement of numbers given. The missing numbers appear in the same order in one of the alternative answer. Find the correct alternative.

0 _ 0100 _ 10 _ 1111 _ __

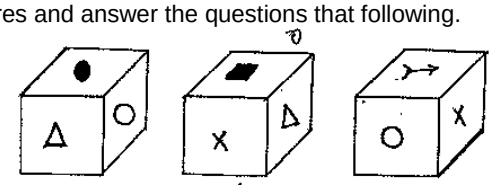
(1) 01011 (2) 01101
(3) 01111 (4) 01110

Direction Question No. 39 and 40 : Madhav and Govind play Hockey and Volleyball, Hemant and Madhav play Hockey and Baseball. Ramesh and Govind play Cricket and Volleyball. Hemant, Ramesh and Anant play Football and Baseball. Then, answer the following questions.

39. Who plays Hockey, Cricket and Volleyball?
(1) Madhav (2) Govind
(3) Hemant (4) Anant

40. Who does not play Baseball? Choose the correct alternative?
(1) Govind (2) Hemant
(3) Madhav (4) Ramesh

Direction Question No. 41 and 42 : In the following figures, three different position of a cube has been shown. Observe the figures and answer the questions that following.



41. Which sign will be on the surface opposite to surface having X sign?

(1)  (2) 

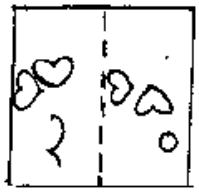
(3)  (4) 

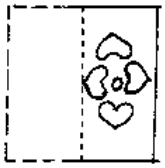
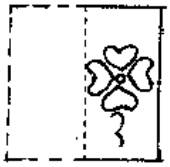
42. Which sign will be on the surface opposite to surface having sign

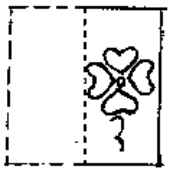
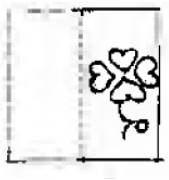
(1)  (2) 

(3)  (4) X

43. In the figure given below, a transparent square shaped paper is folded along the dotted lines. What figure will be obtained? Find the figure from the alternative figures given.



(1)  (2) 

(3)  (4) 

Direction Question No. 44 and 45 : In each of the following questions there is a specific relationship between the first and second number. The same relationship exists between the third and fourth number which will replace the question mark. Select the correct term from the alternatives given.

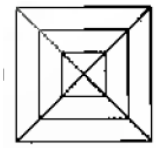
44. 583 : ? : : 488 : 378
(1) 291 (2) 293
(3) 487 (4) 581

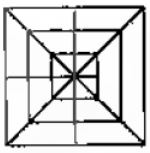
45. 13 : 19 : 31 : ?
(1) 41 (2) 37
(3) 33 (4) 47

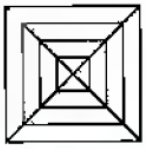
46. In the following question in every row the numbers outside the bracket are related to number inside the bracket in a specific manner. From the given alternatives find the right number which matches and will replace the question mark.
64 (87) 343 49 (76) 216 36 (?) 512
(1) 68 (2) 59
(3) 52 (4) 48

47. After folding a square piece of paper, it appears as shown in the left side question figure. The paper when unfolded will look like as shown in one of the alternatives. Select the correct alternative.

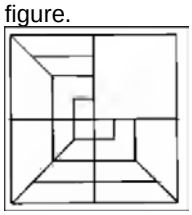
(1) 

(2) 

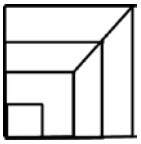
(3) 

(4) 

48. The following question figure given at left side is incomplete. Select the correct alternative which can complete the figure.



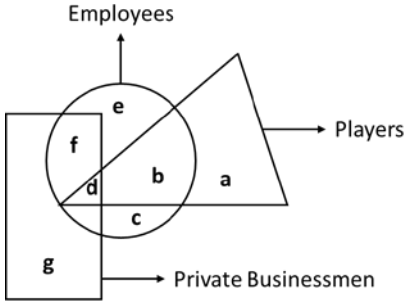
(1) 

(2) 

(3) 

(4) 

Direction Question No. 49 and 50 : In the following diagram, three geometrical figures have been drawn intersecting each other. The labels have been given to different parts. Each figure represent a specific group of people. Observe the figure closely and answer the question that follow.



49. How many employee players do private business?
(1) b (2) a
(3) c (4) d

50. How many players are unemployed?
(1) b (3) d
(3) a (4) c

NATIONAL TALENT SEARCH EXAMINATION, 2017-18

MENTAL ABILITY ANSWER KEY

QUE.	1	2	3	4	5	6	7	8	9	10
ANS.	1	4	1	4	2	4	3	1	4	1

QUE.	11	12	13	14	15	16	17	18	19	20
ANS.	2	2	1	3	2	2	4	3	4	3

QUE.	21	22	23	24	25	26	27	28	29	30
ANS.	3	1	3	2	2	3	1	3	2	4

QUE.	31	32	33	34	35	36	37	38	39	40
ANS.	3	1	3	2	3	4	2	3	1	1

QUE.	41	42	43	44	45	46	47	48	49	50
ANS.	2	1	4	2,4	2	1	1	3	4	3

MENTAL ABILITY SOLUTIONS

1. (1) FN

Logic	B J	D L	H P	P X	F N
	2 10	4 12	8 16	16 24	32 40

32 = 26 + 6 = F
40 = 26 + 14 = N

2. (4)

+4	+4	+4	+4
AYCD	EUGH	IQKL	MZBC

MZBC
(3rd placed – 1) will give 2nd place and opposite like B – 1 = A opposite Z.

3. (1)
Only 141 is not a prime no.

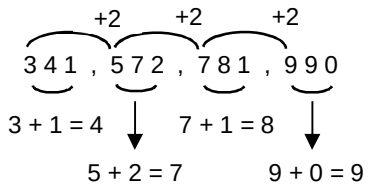
4. (4)
Sum of all number
6 + 1 + 3 + 1 = 11
2 + 1 + 9 + 1 → 13
3 + 3 + 1 + 2 → 9
3 + 1 + 6 + 4 → 14 (14 is even)

5. (2)

4	8	12	16
D	H	L	P
6	14	21	28
F	N	U	B
11	22	33	44
K	V	G	R

G 33 $\rightarrow$ 26 + 7
R 26 + 18 $\rightarrow$ R

6. (4)



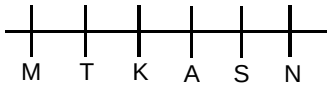
7. (3)
155 by BODMAS

$$\frac{200}{5} + 25 + 20 \times 5 - 10$$

8. (1)
4 side divided into 4
10 side divided into 10

9. (4)
Mirror image + Centre rotating

10. (1)



11. (2)

$$\left(\begin{array}{c} 1\left(6\ \ 5\right) \\ \frac{1}{2}\left(\frac{3}{3}\ \ \frac{1}{4}\right) \end{array}\right)$$ difference

$$5\ \ 3\ \ 3$$

Similarly $\frac{2}{7}\ \frac{6}{9}\ \frac{2}{1}$

12. (2)
Logical

13. (1)

$$\overset{B\ E\ A\ T}{2\ 5\ 1\ 20} = 2 + 5 + 1 + 20 = \frac{28}{4} = 7$$

Logic $\rightarrow$ Sum of all place then divide by 4.

14. (3)
Logic Pattern N K M L J O Q P K

15. (2)
Logical

16. (2)

S	O	L	V	E	
+0	+1	+2	+3	+4	logic
S	P	N	Y	I	

17. (4)

L	A	R	G	E
–1	–1	–1	–1	–1
K	Z	Q	F	D

18. (3)
Logical

19. (4)
Logical

20. (3)
8

21. (3)

9	10	34	35
57	58	66	67
61	44	48	63

22. (1)
See the logic of the numbers from pattern.

23. (3)
$27 \rightarrow 2 \times 5 + 2 \times 2 \times 3 + 1 \times 5$

24. (2)
13

25. (2)

26. (3)
$N^2 - 8$

27. (1)
Logic pattern

28. (3)
$2 \times 2 + 2 \rightarrow 6$
$6 \times 3 + 3 \rightarrow 21$
$21 \times 4 + 4 \rightarrow 88$
$88 \times 5 + 5 \rightarrow 445$

29. (2)
$2^2 + 2 \rightarrow 6$
$3^3 + 3 \rightarrow 30$
$4^2 + 2 \rightarrow 18$
$5^3 + 3 \rightarrow 128$
$6^2 + 2 \rightarrow 38$

30. (4)
02, 13, 34, 56
Check row and column.

31. (3)
11, 13, 67, 69
Check row and column.

32. (1)
1 October was Monday So, 4 November will be Sunday

33. (3)
All boxes shifting one down the column.

34. (2)
Logical

35. (3)

$$\left.\begin{matrix} A & M & K \\ & & \\ S & P & J \end{matrix}\right\} +18\,,\,+3\,,\,-1$$

Similarly,

$$\left.\begin{matrix} K & N & M \\ & & \\ C & Q & L \end{matrix}\right\} +18\,,\,+3\,,\,-1$$

36. (4)

$$\left.\begin{matrix} N & 9 & M \\ P & 11 & Q \end{matrix}\right\} +2, +2, +4$$

Similarly, $\left.\begin{matrix} K & N & M \\ C & Q & L \end{matrix}\right\} +2, 12, +4$

37. (2)
6 km (Direction sense test question)

38. (3)

Logic	0001	0011	0111	1111

39. (1)

PLAYERS	**Foot Ball**	**Base Ball**	**Cricket**	**Volley Ball**	**Hockey**
Hemant	√	√	×	√	√
Madhav	×	√	×	√	√
Govind	×	×	√	√	√
Ramesh	√	√	√	√	×
Anant	√	√	×	×	×

40. (1)

PLAYERS	**Foot Ball**	**Base Ball**	**Cricket**	**Volley Ball**	**Hockey**
Hemant	√	√	×	√	√
Madhav	×	√	×	√	√
Govind	×	×	√	√	√
Ramesh	√	√	√	√	×
Anant	√	√	×	×	×

41. (2)
Logical

42. (1)
Logical

43. (4)
Folding logic

44. (2) & (4) both option are correct

45. (2)

$\left.\begin{matrix} 13 \to 1+3=4 \\ 19 \to 1+9=10 \end{matrix}\right\}$ So, $10-4=6$

Similarly, $\left.\begin{matrix} 31 \to 3+1=4 \\ 37 \to 3+7=10 \end{matrix}\right\}$ So, $10-4=6$

46. (1)

$8^2 \to 64$

$7^3 \to 343$

$7^2 \to 49$

$6^3 \to 216$

Similarly, $\begin{matrix} 6^2 \to 36 \\ 8^3 \to 512 \end{matrix}$

47. (1)
Logic unfolding

48. (3)
Logical

49. (4)
Logical Venn Diagram

50. (3)
Logical Venn Diagram