

SOLUTIONS
NATIONAL TALENT SEARCH EXAMINATION 2019 STAGE-2
MENTAL ABILITY TEST (MAT) (DATE : 16-06-19)

1. If,

$$\bigcirc + \bigcirc = 10$$

$$\bigcirc + \square + \square = 10$$

$$\bigcirc \times \square - \triangle \times \bigcirc = 5$$

then, the value of \triangle will be

(1) 1.5

(2) 2.5

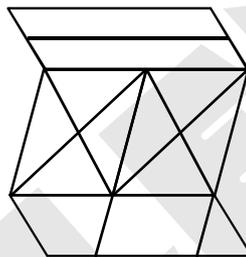
(3) 5

(4) 7.5

Ans. (1)

Sol. $\bigcirc \rightarrow 5$	}	$5 + 5 = 10$
$\square \rightarrow 2.5$		$5 + 2.5 + 2.5 = 10$
$\triangle \rightarrow 1.5$		$5 \times 2.5 - (1.5 \times 5) = 5$

2. How many parallelograms are there in the given figure?



(1) 14

(2) 15

(3) 16

(4) 17

Ans. (1)

Sol. By observation

3. A newspaper has 6 sheets consisting of 24 pages in total. If page number 17 of the newspaper is missing then find the set of missing pages in that newspaper, from the alternatives given below :

(1) 6, 7, 16, 17

(2) 7, 8, 17, 18

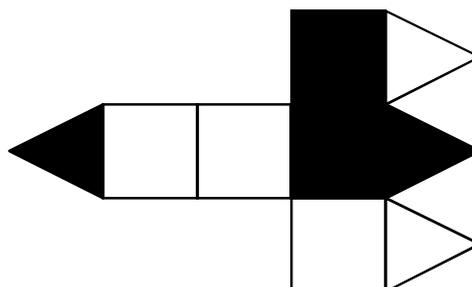
(3) 8, 9, 17, 18

(4) 9, 10, 16, 17

Ans. (2)

Sol. By observation.

4. The given figure in the question has five square and four equilateral triangles. Two square and two triangles are shaded. The figure is folded along the dividing lines, the squares by 90° and triangles by 45° so as to form a closed three dimensional object. The object is then placed with its apex pointing towards your left. Which one among the figures given in the alternatives can be seen?



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Ans. (1)

Sol. By observation.

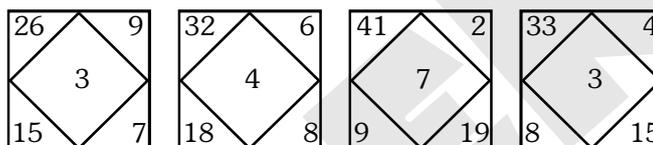
5. Complete the following series : 6, 24, 60, ?, 210

- (1) 96 (2) 120 (3) 140 (4) 160

Ans. (2)

Sol. $2^3 - 2, 3^3 - 3, 4^3 - 4, \boxed{5^3 - 5}, 6^3 - 6$

6. By studying the figure and number relationship, find the missing number '?'



- (1) 5 (2) 6 (3) 9 (4) 12

Ans. (2)

Sol. $(26 + 7) - (9 + 15)$

$\Rightarrow 33 - 24$

$\Rightarrow 9 = \boxed{3^2}$ and So on

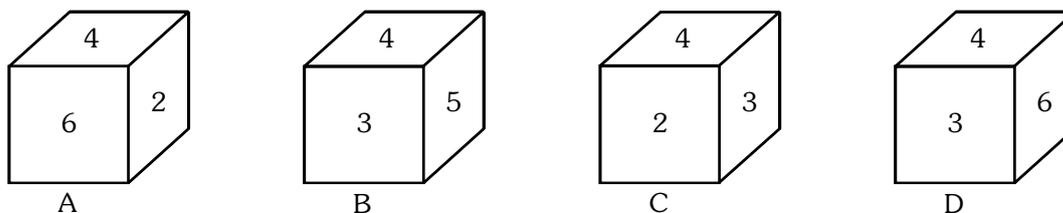
7. The opposite faces of Dice X are :

[(5, 2), (6, 3), (4, 1)]

The opposite faces of Dice Y are :

[(3, 5), (4, 1), (6, 2)]

Which figure can represent both Dice X and Dice Y with faces shown below?



- (1) A (2) B (3) C (4) D

Ans. (3)

Sol. By observation

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8. If

$$\begin{array}{r}
 R \ S \ S \ T \ U \\
 + \ N \ R \ S \ T \\
 + \ \ \ \ R \ T \ S \\
 \hline
 3 \ 7 \ 8 \ 4 \ 9
 \end{array}$$

then, find the code for **TURNS** from the given alternatives provided there is no carrying over in the given addition using letter codes.

(1) 1 3 6 2 5

(2) 6 5 2 3 1

(3) 1 6 3 5 2

(4) 5 3 1 2 6

Ans. (3)

Sol.
$$\left. \begin{array}{l}
 T \ U \ R \ N \ S \\
 1 \ 6 \ 3 \ 5 \ 2
 \end{array} \right\} \begin{array}{l}
 3 \cdot 2 \ 2 \ 1 \ 6 \\
 5 \ 3 \ 2 \ 1 \\
 \hline
 3 \ 1 \ 2 \\
 \hline
 3 \ 7 \ 8 \ 4 \ 9
 \end{array}$$

9. A comparison of ages of A, B, C, D and E are as follows.

I. B's age is half the age of A.

II. B's age is $1\frac{1}{2}$ times the age of C.

III. D's age is 12 years less than C.

IV. D's age is $1\frac{1}{2}$ times the age of E.

V. The age of E is 12 years.

With the given data what will be the difference in the ages of A and C?

(1) 64

(2) 60

(3) 40

(4) 36

Ans. (2)

Sol. $B = \frac{A}{2}$ (1)

$B = C \times 1.5$ (2)

$D = (C - 12)$ (3)

$D = E \times 1.5$ (4)

$E = 12$ (5)

By putting value of E, in (4), $D = 12 \times 1.5 = 18$ years

By putting value of D in (3), $C = 30$ years

then, $B = 30 \times 1.5 = 45$ years

A age = $45 \times 2 = 90$ years.

$\Rightarrow (A - C) = (90 - 30) = 60$ year.

10. If **CLOUD** = 11, **BURST** = 16 and **ACE** = 3, then **MONSOON** = ?

(1) 13

(2) 15

(3) 17

(4) 19

Ans. (2)

Sol.
$$\left. \begin{array}{l}
 C + L + O + U + D \\
 3 + 12 + 15 + 21 + 4 \\
 \Rightarrow \frac{55}{5} = 11
 \end{array} \right\} \begin{array}{l}
 \text{Sum of letters} \\
 \hline
 \text{No. of letters}
 \end{array}$$

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11. Three dice are rolled simultaneously and the numbers shown on all three dice are added, then the total number of possible ways to have a sum of 7 is _____.

- (1) 12 (2) 13 (3) 15 (4) 16

Ans. (3)

Dice 1	Dice 2	Dice 3	Possibility
5	1	1	3
4	2	1	6
3	3	1	3
2	2	3	3
			15

12. A comparison of marks scored by Gauri, Aaban, Seerat and Alvina in an examination is as follows.

- I. Gauri has scored 15 marks less than Aaban.
- II. Gauri has scored 20 marks more than Seerat.
- III. Alvina has scored 10 marks less than Seerat.

To decide who has scored the highest marks, identify the statement from those given in the alternatives in respect of sufficiency of data.

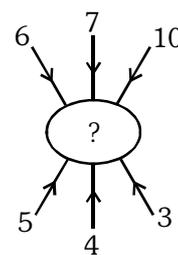
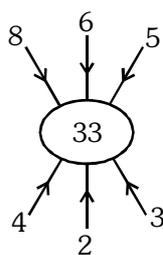
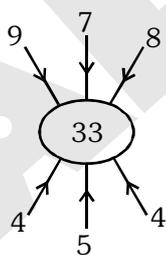
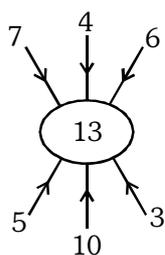
- (1) Data given in I and II are sufficient. (2) Data given in I and III are sufficient.
 (3) Data given in II and III are sufficient. (4) Data given in I, II and III are sufficient.

Ans. (4)

Sol. By all three statements :

$$\text{Aaban} > \text{Gauri} > \text{Seerat} > \text{Alvina}$$

13. The number in the place of '?' should be _____.



- (1) 30 (2) 32 (3) 34 (4) 36

Ans. (2)

Sol. $(7 \times 5) + (6 \times 3) - (4 \times 10)$

$$(35 + 18) - 40 \Rightarrow 53 - 40 \Rightarrow 13$$

$$(9 \times 4) + (8 \times 4) - (7 \times 5)$$

$$(36 + 32) - 35 \Rightarrow 68 - 35 \Rightarrow 33$$

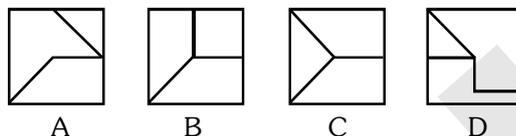
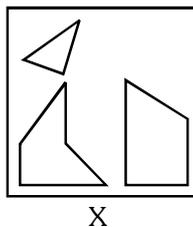
Similarly

$$(6 \times 5) + (10 \times 3) - (7 \times 4)$$

$$\Rightarrow (30 + 30) - 28 \Rightarrow 60 - 28 \Rightarrow 32$$

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14. Find out which of the following figures can be formed from the pieces given in the figure 'X'?



(1) A

(2) B

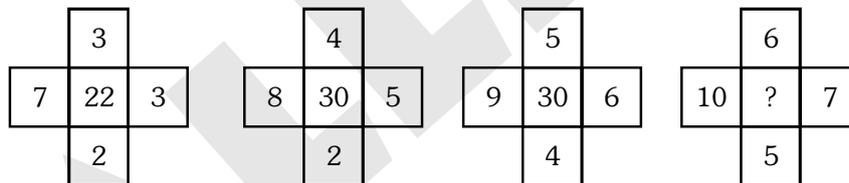
(3) C

(4) D

Ans. (1)

Sol. By observation.

15. Find the missing number '?' in the figure given below :



(1) 30

(2) 32

(3) 33

(4) 35

Ans. (4)

Sol. $(10 \times 6) - (5 \times 7)$

$\Rightarrow 60 - 35$

$\Rightarrow 25 + 10$ (from left) = 35 and So on

16. In **MOBILE** is coded as **DFBICE**, then **CHARGE** is coded as

(1) CHBXQE

(2) CLARTE

(3) CHAIGE

(4) CHIAEF

Ans. (3)

Sol. $\begin{matrix} 13 & 15 & 2 & 9 & 12 & 5 \\ M & O & B & I & L & E \end{matrix} \xrightarrow{\begin{matrix} (1+3) & (1+5) \\ 4 & 6 \end{matrix}} \begin{matrix} 2 & 9 & 3 & 5 \\ D & F & B & I & C & E \end{matrix}$

Similarly.

$\begin{matrix} C & H & A & R & G & E \\ 3 & 8 & 1 & 18 & 7 & 5 \end{matrix} \xrightarrow{(1+8)} \begin{matrix} C & H & A & I & G & E \\ 3 & 8 & 1 & 9 & 7 & 5 \end{matrix}$

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17. Study the following information.

If, 'A\$B' means A is brother of B,

'A@B' means A is wife of B,

'A#B' means A is daughter of B and

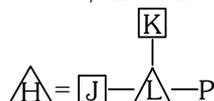
'A£B' means A is father of B.

Based on the above information, which of the following alternative represents the correct group of symbols that indicates the relationship for 'K' is father-in-law of 'H'?

- (1) H@J\$L#P£K (2) H@J\$P£#K (3) H@J\$L#K£P (4) H@P\$J£L#K

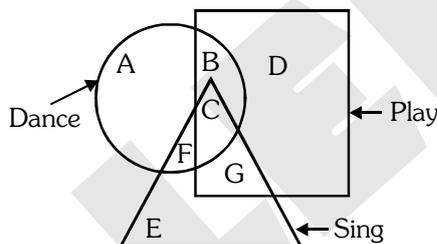
Ans. (3)

Sol. H @ J \$ L # K £ P



∴ K is father-in-law of H.

Directions : (Questions 18 - 20) The following figures represent students who can play, sing and dance.



18. Which part of the figure represents students who can sing and dance?

- (1) F (2) C (3) F and C (4) E and G

Ans. (3)

Sol. Only F and C is the part of 'sing' and dance.

19. The number of students who can play is more by 'a' than the number of students who can dance; and the number of students who can do both playing and singing is more by 'b' than the number of students who can do both singing and dancing. Then what is the difference of the number of students who can only dance and who can only play?

- (1) a + b (2) (2a - b) or (b - 2a) (3) (a - 2b) or (2b - a) (4) (a - b) or (b - a)

Ans. (4)

Sol. $(B + D + C + G) - (A + B + C + F) = a$

$$\Rightarrow D + G - (A + F) = a \quad \dots\dots(1)$$

$$(C + G) - (C + F) = b$$

$$\Rightarrow G - F = b \quad \dots\dots(2)$$

By applying (2) in (1), we get,

$$\Rightarrow D + b - A = a$$

$$\Rightarrow D + b = a - b$$

or

$$A - D = b - a$$

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20. It is given that the total numbers of students in all the three disciplines are same. Also, sum of the number of students who can only dance, and twice of the number of students who can do both singing and dancing, equals the sum of the students who can do both singing and playing, and the students who can do both dancing and playing. Then which among the alternatives is a correct statement about the number of students who can only play and those who can only sing?

- (1) The number of students who can only sing is twice as many as the number of students who can only play.
- (2) The number of students who can only sing is equal to the sum of the number of students who can sing and dance and the number of students who can only play and sing.
- (3) The number of students who can only play and sing equals the number of students who can only dance and play.
- (4) The number of students who can only dance equals to the number of students who can only sing.

Ans. (1)

Sol. $a + b + c + f = b + d + c + g = c + f + g + e$

By 1 & 2 = $a + f = g + d$ (1)

2 & 3 = $b + d = f + e$ (2)

1 & 3 = $a + b = g + e$ (3)

from the statement; $a + 2(c + f) = (c + g) + (b + c)$

$$\Rightarrow a + 2c + 2f = 2c + g + b$$

$$\Rightarrow a + 2f = g + b$$

$$\Rightarrow a = g + b - 2f \text{(4)}$$

from (1), $a = g + d - f$ (5)

By comparing (4) and (5),

$$g + d - f = g + b - 2f$$

$$\Rightarrow \boxed{d = b - f} \quad \text{or} \quad \boxed{b = d + f}$$

By (3) = $a + b = g + e$

Putting value b we get $a + d + f = g + e$

$$a + f = g + d, \quad g + d + d = g + e$$

$$\Rightarrow g + d + d = g + e$$

$$\Rightarrow \boxed{2d = e}$$

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21. Complete the following series

1, - 8, 81, ?, 15625

(1) -1022

(2) -1024

(3) -4094

(4) -4096

Ans. (2)

Sol. 1, - 8, 81, ?, 15625

$+1^1, -(2)^3, + (3)^4, -(4)^4 + (5)^5$

$\therefore -(4)^4 \rightarrow -1024$

22. Yaibiren is standing 4 metres East of Rajib, who is 1 metre North of Achira . If Sahibah is standing 3 metres South of Achira, then in which direction of Yaibiren is Sahibah?

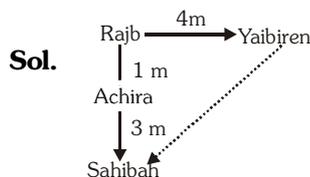
(1) North-East

(2) North-West

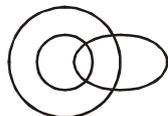
(3) South-East

(4) South-West

Ans. (4)



23. Which of the following diagram indicates the best relationship among men, fathers and teachers?



(A)

(1) A



(B)

(2) B



(C)

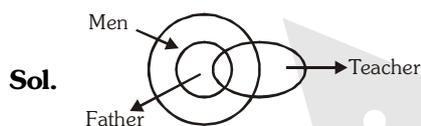
(3) C



(D)

(4) D

Ans. (1)



24. Ishan wishes Irfan ' Good Morning' when the hour hand of a (measured clockwise) clock is positioned between 9 and 10. The angle between the two hands is 145° . The time shown by clock is

(1) 9.08 AM

(2) 9.10 AM

(3) 9.12 AM

(4) 9.15 AM

Ans. (2)

Sol. $(360^\circ - 145^\circ) = 215^\circ$

$$\theta = 30H - \frac{11}{2} \times M$$

$$215 = 270 - \frac{11}{2} \times M$$

$$55 = \frac{11}{2} M$$

$$M = 10 \text{ min}$$

$$\therefore 9 : 10$$

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25. If '15 + 10 means 5'; '6 × 3 means 9'; '8 + 4 means 32'; and '12 - 2 means 6'; then what will be the value of 27 + 81 - 9 × 6?

- (1) 36 (2) 24 (3) 12 (4) 6

Ans. (2)

Sol. + → -

× → +

+ → ×

- → ÷

$$27 - 81 \div 9 + 6$$

$$\Rightarrow 27 - 9 + 6$$

$$\Rightarrow 33 - 9 = 24$$

26. Which number will replaced the '?' in the following sequence?

5, 7, 14, 24, 42, ?, 119

- (1) 71 (2) 67 (3) 65 (4) 63

Ans. (1)

Sol. 5, 7, 14, 24, 42, ?, 119

$$5 + 7 = 12 + (2) = 14$$

$$7 + 14 = 21 + (3) = 24$$

$$14 + 24 = 38 + (4) = 42$$

$$24 + 42 = 66 + (5) = 71$$

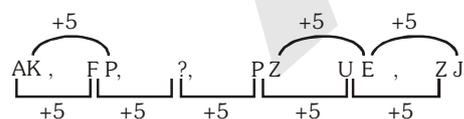
$$42 + 71 = 113 + (6) = 119$$

27. What will be the missing term '?' in the given series?

AK, FP, ?, PZ, UE, ZJ

- (1) KU (2) JT (3) JU (4) KV

Ans. (1)

Sol. 

KU

Both 1st and 2nd alphabet follows + 5 pattern.

28. In a family of four members there is father, mother, son and daughter. When sorted according to decreasing order of their ages, the order is father, mother, son and daughter. The difference between the age of father and mother is 5 years. The difference between total age of male members and female members is 15 years. Also, the total age of children is 20 years, then the age of the son is _____.

- (1) 10 years (2) 15 years (3) 20 years (4) 25 years

Ans. (2)

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Sol. Father (F), Mother (m), Daughter (D), Son (s)

Given $F > M > S > D$

$$F - M = 5 \quad \dots(1)$$

$$(F + S) - (M + D) = 15 \quad \dots(2)$$

$$S + D = 20 \quad \dots (3)$$

On solving (1) and (2)

$$\underline{F - M} + S - D = 15$$

$$5 + S - D = 15$$

$$S - D = 10 \quad \dots(4)$$

On adding (3) and (4)

$$S + D = 20$$

$$S - D = 10$$

$$2S = 30$$

$$S = 15$$

Age of son is 15

29. If the ninth day of a month is four day earlier than Thursday then what day will it be on the twenty third day of the month?

(1) Monday

(2) Wednesday

(3) Friday

(4) Sunday

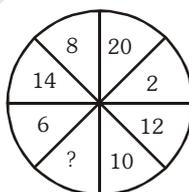
Ans. (4)

Sol. Four days earlier Thursday is Sunday

9th of month falls on Sunday

so, 23rd of same month falls on Sunday.

30. Which number replaces that question mark '?' in the given figure?



(1) 4

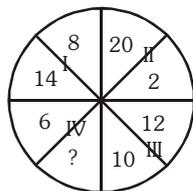
(2) 16

(3) 18

(4) 22

Ans. (2)

Sol. In given figure.



$$\text{Quadrant I} = 14 + 8 = 22$$

$$\text{Quadrant II} = 20 + 2 = 22$$

$$\text{Quadrant III} = 12 + 10 = 22$$

$$\text{Quadrant IV} = 6 + (?) = 22$$

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31. Find the missing value '?' in the following series.

13, 34, 74, ?, 290

(1) 168

(2) 170

(3) 172

(4) 174

Ans. (2)

Sol. 13, 34, 74, ?, 290

Using Prime number

$$2^2 + 3^2 = 13$$

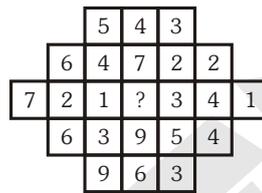
$$3^2 + 5^2 = 34$$

$$5^2 + 7^2 = 74$$

$$7^2 + 11^2 = 170$$

$$11^2 + 13^2 = 290$$

32. What number comes in place of '?' in the given figure?



(1) 9

(2) 8

(3) 7

(4) 6

Ans. (1)

Sol. In given figure middle term is obtained by $\frac{\text{Left term} + \text{Right term}}{2}$

$$\frac{5+3}{2} = 4$$

$$\frac{(6+4)+(2+2)}{2} = 7$$

$$\frac{(7+2+1)+(3+4+1)}{2} = 9$$

$$\frac{(6+3)+(5+4)}{2} = 9$$

$$\frac{9+3}{2} = 6$$

33. The following figures represent information given against them.



Total number of students who applied for Board Examination.



Total number of student who actually appeared at Board Examination.



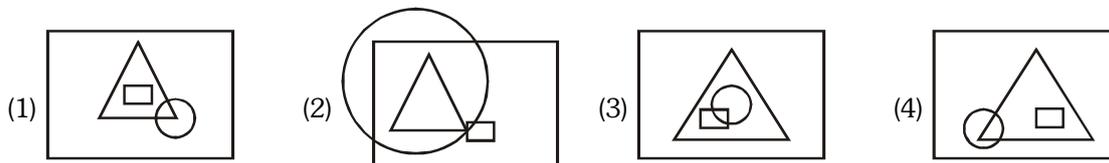
Total number of urban students who appeared at Board Examination.



Total number of students who qualified at Board Examination.

Based on the above information which of the following figure represent the above facts?

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Ans. (3)

Sol. (1) All \triangle [Total number of student who actually appeared at Board examination are \square]
 [Total number of students whose applied for Board Examination.]

(2) All \square are \triangle

(3) All \bigcirc are \triangle

(4) Some \bigcirc are \square

Option 3 follows.

34. Five friends, P, Q, R, S and T read a newspaper. The one who reads first gives it to R. The one who reads last had taken it from P. T was neither the first nor the last one to read. There were two readers between Q and P. Whose reads the newspaper last?

- (1) P (2) Q (3) R (4) S

Ans. (4)

Sol. Reader

- 1 Q
 2 R
 3 T
 4 P
 5 (S)

S reads the paper last

35. A clock shows 0.5 : 45. A plane mirror is kept on the right of the clock, with its plane perpendicular to the face of the clock. What time will be shown by the mirror image?

- (1) 06 : 45 (2) 05 : 15 (3) 06 : 15 (4) 07 : 15

Ans. (3)

Sol. Mirror image of 5 : 45

$$\begin{array}{r} 11 : 60 \\ - 5 : 45 \\ \hline 6 : 15 \end{array}$$

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36. In a certain code language "Kolkata is cultural hub of India" is coded as "α2463β" and "Mumbai is financial hub of India" is coded as "Υ3472β". Then in the same language "India is hub of democracy" may be coded as
(1) α 2 4 3 9 (2) 2 4 3 Υ 7 (3) β 3 2 4 9 (4) 3 2 β 4 7

Ans. (3)

Sol. Comparing first and second line code of "is of hub India" comes as 243β.

So, in "India is hub of democracy" code is 243β and new code for democracy will be added.

Acc. to option β 3249 follows.

37. Which letter is midway between 13th letter from the left and the 4th letter from the right in the sequence given below?

USB EY F H K O P R A W C G J M Q D I V L N T X Z

- (1) O (2) Q (3) P (4) M

Ans. (2)

Sol. USB EY F H K O P R A W C G J M Q D I V L N T X Z

13th letter from left is W

4th letter from right is N.

middle term of W and N is Q

38. Which of the following figure(s) can not be drawn without either lifting the pen or re-tracing any line?



(A)



(B)



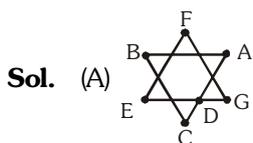
(C)



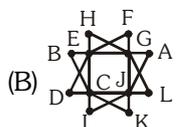
(D)

- (1) Only A (2) Both A and B (3) Only C (4) Both C and D

Ans. (3)



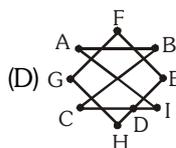
A → B, B → C, C → D, D → E, E → F, F → G, G → D, D → A



A → B → C → D → E → F → G → H

H → I → J → K → C → L → G

G → J → A



A → B → C → D → E → F → G → H → D

D → I → A

A, B and D figures are possible except (C)

SOLUTIONS
NATIONAL TALENT SEARCH EXAMINATION 2019 STAGE-2
MENTAL ABILITY TEST (MAT) (DATE : 16-06-19)

39. Find the missing values in place of the questions marks in the given pattern.

1	X	5	?	34
	1	3	8	21
Y	2	U	?	H

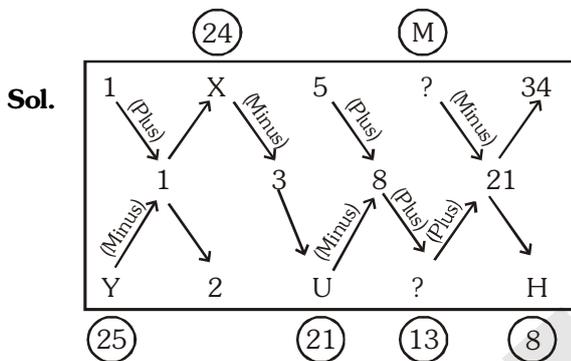
(1) $\frac{I}{13}$

(2) $\frac{N}{10}$

(3) $\frac{M}{13}$

(4) $\frac{Z}{18}$

Ans. (3)



From bottom to top
 (Y) $25 - 1 = 24$ (X)
 (U) $21 - 8 = 13$ (M)

From top to bottom
 $1 + 1 = 2$
 $24 - 3 = 21$ (U)
 $5 + 8 = 13$
 $21 - 13 = 8$ (H)

40. What will be the missing number in the given series

1332, 732, 348, ?, 36, 12

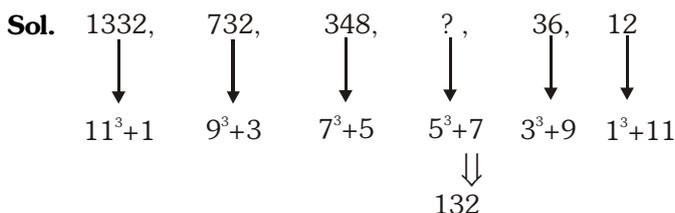
(1) 32

(2) 132

(3) 148

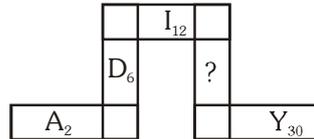
(4) 216

Ans. (2)



SOLUTIONS
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41. Find the missing term '?' in the given figure.



(1) N_{10}

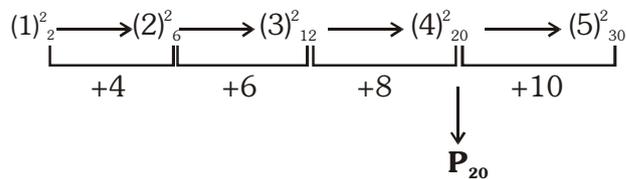
(2) P_{20}

(3) O_{24}

(4) Q_{16}

Ans. (2)

Sol. $A_2 \longrightarrow D_6 \longrightarrow I_{12} \longrightarrow ? \longrightarrow Y_{30}$



42. If, $a > b$, $a > 0$, and $b \neq 0$, then which of the following statements is always true?

(1) $a \times b > 0$

(2) $a \times b < 0$

(3) $a \times b$ is undefined

(4) $a \times b^2 > 0$

Ans. (4)

Sol. Given $a > b$, $a > 0$, and $b \neq 0$,

b can be +ve or -ve.

So, $a \times b^2 > 0$

43. In certain code language

'way to win' written as AAaa aaaa AAAa,

'Go to Walk' is written as Aaaa aaaa AAAA,

'Get up early' is written as AaAa AaaA aaAA.

Then, how can 'Always go to morning walk early' be written in that code language?

(1) aaAA Aaaa aaaa aaaA AAaa aaAA

(2) aaAA Aaaa aaaa aaaA AAAA aaAA

(3) aaAA AaAa aaaa aaaA aaAA AAaa

(4) aaaA AaAa aaaa aaAA AAAA aaAA

Ans. (2)

Sol. By direct coding we get : \rightarrow

Always	go	to	morning	walk	early
↓	↓	↓	↓	↓	↓
.....	Aaaa	aaaa	AAAA	aaAA

Now, only option (2) matches the same sequence.

SOLUTIONS

**NATIONAL TALENT SEARCH EXAMINATION 2019 STAGE-2
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44. If + means \times ; \div means $-$; $-$ means $+$; and \times means \div , then $2 + 12 \times 4 - 6 \div 6$ is equal to _____.
 (1) 0 (2) 6 (3) 12 (4) 49

Ans. (2)

Sol. $2 + 12 \times 4 - 6 \div 6$
 $2 \times 12 \div 4 + 6 - 6$
 $2 \times 3 + 6 - 6$
 $6 + 6 - 6 = 6$

45. In the given equation, which two numbers in the expression on the left hand side will be interchanged to form a correct equation ?

$5 + 4 \times 8 \div 12 - 3 = 3$

- (1) (3, 5) (2) (4, 12) (3) (3, 4) (4) (8, 5)

Ans. (3)

Sol. $5 + 4 \times 8 \div 12 - 3 = 3$

After interchanging 3 & 4. we get,

$5 + 3 \times 8 \div 12 - 4 = 3$

$5 + 3 \times \frac{8}{12} - 4 = 3$

$5 + 2 - 4 = 3$

$7 - 4 = 3$

$3 = 3$

46. If a, b, c, d and e are positive numbers, and it is given that,

$a + b = c + d$, $b + d = 2a$, $d + e > a + b$ and $c + d > a + e$ then, which of the following statement is true?

- (1) $d > a > b > e > c$ (2) $d > b > e > a > c$ (3) $a > b > c > d > e$ (4) $a > d > b > e > c$

Ans. (1)

Sol. $a + b = c + d$ (1)

$b + d = 2a$ (2)

$d + e > a + b$ (3)

$c + d > a + e$ (4)

By (1) and (3). $d + e > c + d \Rightarrow e > c$ (5)

By (1) and (4) $a + b > a + e \Rightarrow b > e$ (6)

By (3) and (4) $d + e > a + b = c + d > a + e$
 $\Rightarrow d + e > a + e \Rightarrow d > a$(7)

By (2) $b + d = a + a$.

If $d > a$ then $b < a$

By option (1) follows.

SOLUTIONS
NATIONAL TALENT SEARCH EXAMINATION 2019 STAGE-2
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47. Kashvi facing towards rising sun turned to her left and walks for 60m. She then turned to west and walked for 15m. Then she turned towards left at an angle of 45° and reached 95m from her original position. How much total distance did she travel?

- (1) 95m (2) 115m (3) 155m (4) 175m

Ans. (4)

Sol. Solving by Pythagoras theorem

$$H^2 = P^2 + B^2$$

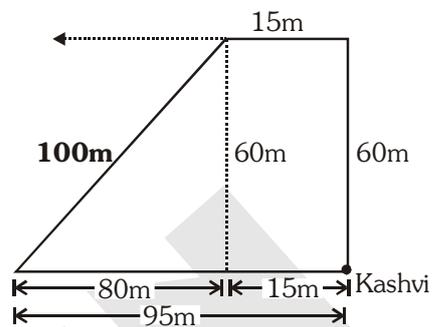
$$H^2 = (60)^2 + (80)^2$$

$$H = \sqrt{3600 + 6400}$$

$$H = 100\text{m}$$

Now, total distance she travelled

$$(60 + 15 + 100) \text{ m} = 175\text{m}$$



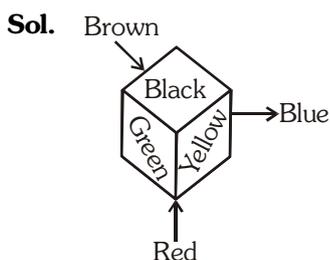
48. A cube is coloured on all the six faces with six different colours - black, brown, green, red, yellow and blue.

- Red face is opposite to the black face.
- Green face is between red and black faces.
- Blue face is adjacent to yellow face.
- Brown face is adjacent to blue face.
- Red face is in the bottom.

Which of the following are adjacent to green?

- (1) Black, yellow, brown, red (2) Blue, black, red, yellow
(3) Red, black, blue, yellow (4) Yellow, blue black, red

Ans. (1)



By observing above cube, adjacent to Green are Black, Yellow, Brown, Red.

SOLUTIONS

**NATIONAL TALENT SEARCH EXAMINATION 2019 STAGE-2
MENTAL ABILITY TEST (MAT) (DATE : 16-06-19)**

49. A watch gains 10 seconds in 3 minutes. It was set right at 9 A.M. In the evening of the same day, when the watch indicates half past 6 'o clock, the true time is

- (1) 5:30:00 P.M. (2) 5:48:10 P.M. (3) 5:58:20 P.M. (4) 6:08:20 P.M.

Ans. (NA)

Sol. Incorrect Clock

3 min 10 sec of incorrect clock

$$3\frac{1}{6} \text{ min}$$

Therefore,

$$\frac{19}{6} \text{ min of incorrect clock}$$

Therefore,

$$1 \text{ min}$$

Now, hours from 9:00 AM to 6:30 PM is 9 hrs 30 min.

Therefore,

$$9 \times 60 \text{ min} + 30 \text{ min} = 570 \text{ min} \longrightarrow$$

Correct Clock

3 min of correct clock

3 min of correct clock

$$\frac{18}{19} \text{ min of correct clock}$$

$$\begin{aligned} \frac{18}{19} \times 570 \\ = 18 \times 30 = 540 \text{ min} \\ = 9 \text{ hrs} \end{aligned}$$

Now 9 hrs from 9:00 AM is 6:00 PM.

Therefore clock shows correct time at 6:00 p.m.

50. Given is real and that

- (A) $x^2 = 49$, (B) $x^3 = 343$

Examine the given alternatives in respect of arriving at the Conclusion : $x = 7$ and find which is valid.

- I. Only A is sufficient to answer the question.
II. Only B is sufficient to answer the question.
III. Either A or B alone is sufficient to answer the question.
IV. Both A and B together are sufficient to answer the question.

- (1) I (2) II (3) III (4) IV

Ans. (2)

Sol. Given (x is real can be +ve or - ve)

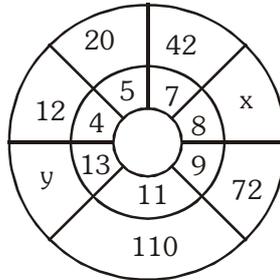
$$x^2 = 49$$

Similarly $x^3 = 343$

Therefore statement (2) Only B is sufficient to answer the question.

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MENTAL ABILITY TEST (MAT) (DATE : 16-06-19)

51. Find the values of 'x' and 'y' from the figure given below.



- (1) 65, 150 (2) 46, 125 (3) 56, 156 (4) 56, 165

Ans. (3)

Sol. 4×3 (Previous number) = 12

5×4 (Previous number) = 20

Similarly

$8 \times 7 = 56$

$x = 56$

and $13 \times 12 = 156$

$y = 156$

52. In a certain code 'COUNTRY' is written as 'ZSUOVPD'. How is 'TEACHER' written in the same code?

- (1) SUTIFED (2) REHCAET (3) QDGBDS (4) SFIDBFU

Ans. (4)

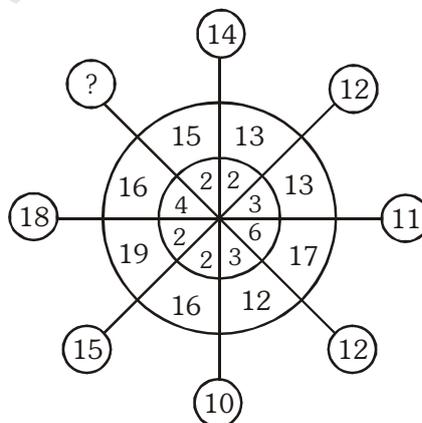
Sol.



Similarly,



53. What number should replace the question mark?



- (1) 15 (2) 14 (3) 13 (4) 10

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Ans. (3)

Sol. $13 - 2 + 1 = 12$

$13 - 3 + 1 = 11$

$17 - 6 + 1 = 12$

$16 - 4 + 1 = 13$

Directions (Q.54-58) : A B C, D, E, F and G are seven teachers. Each one teaches only one and different language from among Konkani, Hindi, Malayalam, English, Manipuri, Tamil and Kannada on different days of a week. C teaches Malayalam on Friday. B teaches Konkani on the next day of the day on which the concerned teacher teaches English. F teaches on Thursday but neither teaches Hindi nor English. D teaches Tamil on the previous day on which day F teaches. A teaches Kannada on Tuesday. G teaches on the next day of the day on which the concerned teacher teaches Malayalam. E does not teach English.

Sol. (Q.54-58) :

A	→	Kannada	→	Tuesday
B	→	Konkanis	→	Sunday
C	→	Malyalams	→	Friday
D	→	Tamil	→	Wednesday
E	→	Hindi	→	Monday
F	→	Manipuris	→	Thursday
G	→	English	→	Saturday

54. Which subject does E teach?

- (1) Tamil (2) Hindi (3) Manipuri (4) Malayalam

Ans. (2)

Sol. From the above table

55. On which day B teaches?

- (1) Monday (2) Friday (3) Wednesday (4) Sunday

Ans. (4)

Sol. From the above table

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56. Which language does F teach?

- (1) Manipuri (2) Kannada (3) Tamil (4) English

Ans. (1)

Sol. From the above table

57. Which language does G teach?

- (1) Hindi (2) English (3) Kannada (4) Konkani

Ans. (2)

Sol. From the above table

58. On which day D teaches?

- (1) Saturday (2) Tuesday (3) Wednesday (4) Thursday

Ans. (3)

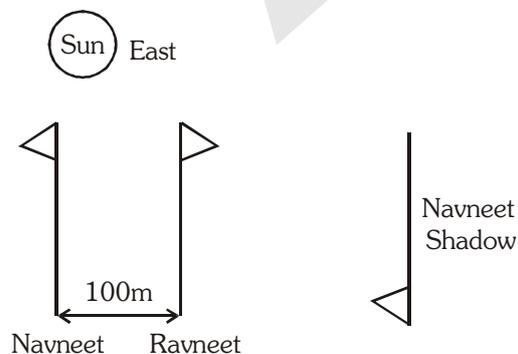
Sol. From the above table

59. One morning at 8 A.M. Navneet and Ravneet were standing on a lawn with their back towards each other at the distance of 100 m. Navneet's shadow fell exactly towards his left hand side. After 15 minutes, Ravneet turns 135° anticlockwise. Which direction Ravneet is facing now?

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

Ans. (1)

Sol.



When Ravneet moves 135° anticlockwise his direction become North-East

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60. Find the missing number.

2, 3, 7, _____, 2112

- (1) 36 (2) 45 (3) 46 (4) 49

Ans. (3)

Sol. $2^2 - 1$

$3^2 - 2$

$7^2 - 3 = 46$

$46^2 - 4 = 2112$

61. In a code BH = 16, DO = 60 and TA = 20, then the code for BAT = ?

- (1) 20 (2) 30 (3) 40 (4) 60

Ans. (3)

Sol. B H = 16

$2 \times 8 = 16$

D O = 60

$4 \times 15 = 60$

T A = 20

20×1

Similarly,

B A T

$2 \times 1 \times 20 = 40$

62. The figure given below is prepared by some sticks and provides an equation that is incorrect. How many minimum numbers of sticks must be removed from the left hand side to make it a correct equation?

$$\begin{array}{|c|c|} \hline 8 & 6 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 3 & 6 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 9 & 0 \\ \hline \end{array} = \begin{array}{|c|c|} \hline 1 & 0 & 0 \\ \hline \end{array}$$

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

Ans. (3)

Sol. $\begin{array}{|c|c|} \hline 2 & 6 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 3 & 6 \\ \hline \end{array} + \begin{array}{|c|c|} \hline 3 & 8 \\ \hline \end{array} = \begin{array}{|c|c|} \hline 1 & 0 & 0 \\ \hline \end{array}$

$26 + 36 + 38 = 100$

We have remove 3 stick to Satisfy condition.

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MENTAL ABILITY TEST (MAT) (DATE : 16-06-19)

63. If 63578 is to 1415,
 56732 is to 185,
 and 34124 is to 86,
 then, 72648 is to ?

- (1) 1215 (2) 1415 (3) 1512 (4) 1514

Ans. (3)

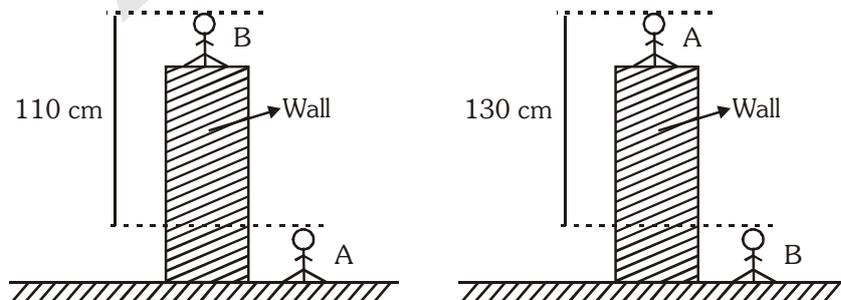
Sol. 63578 is to 1415
 $6 + 3 + 5 = 14$
 $7 + 8 = 15$

56732 is to 185
 $5 + 6 + 7 = 18$
 $3 + 2 = 5$

34124 is to 86
 $3 + 4 + 1 = 8$
 $2 + 4 = 6$

So 72648 is to 1512
 $7 + 2 + 6 = 15$
 $4 + 8 = 12$

64. Two friends Mr. A and Mr. B stand according to figure 1. The two friends then interchange their positions as given in figure 2.



The height of the wall from the ground is _____.

- (1) 115 cm (2) 120 cm (3) 127.5 cm (4) 130 cm

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Ans. (2)

Sol. Let's the height wall is = x

Light of B = y

Light of A = Z

So according to Fig. I

$$x - z + y = 110 \quad \dots (1)$$

From fig. II

$$x - y + z = 130 \quad \dots (2)$$

From eq (1) & (2) we get

$$2x = 240$$

$$x = 120$$

65. In a certain coding scheme, consonants and vowels are coded differently as illustrated below :

C is coded as 6.

Z is coded as 52.

E is coded as 9.

O is coded as 29.

Then find the sum of numerals in the coded version of FAITH

(1) 84 (2) 85 (3) 86 (4) 87

Ans. (3)

Sol. F A I T H

$$F = 6 \times 2 = 12$$

$$A = 1 \times 2 - 1 = 1 \quad (\because A \text{ is vowel})$$

$$I = 9 \times 2 - 1 = 17 \quad (\because I \text{ is vowel})$$

$$T = 20 \times 2 = 40$$

$$H = 8 \times 2 = 16$$

$$\text{So } 12 + 1 + 17 + 40 + 16 \\ = 86$$

66. In a class 20% of students are below 14 years of age. Out of the remaining students 10% are of the age 14-15 years and ratio of students who are between 15-16 years of age to student above 16 years of age is 3 : 2. If the number of students who are above 16 years is 72, what is the total number of students in the class?

(1) 200 (2) 250 (3) 300 (4) 400

Ans. (2)

Sol. Let total no. of students in class = 'x'

Age	No. of students
below 14	20% of x = $\frac{x}{5}$
14 - 15	10% of $\frac{4x}{5} = \frac{2x}{25}$
15 - 16	3k = 108
16 & above	72 = 2k \Rightarrow k = 36

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A.T.Q.

$$\frac{x}{5} + \frac{2x}{25} + 108 + 72 = x$$

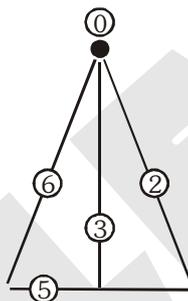
$$180 = x - \frac{x}{5} - \frac{2x}{25}$$

$$180 = \frac{25x - 5x - 2x}{25}$$

$$180 = \frac{18x}{25}$$

$$x = 250$$

67. Study the figure given below representing a particular number in a coded manner,



for example, the number 6825 coded by the following symbols-



Based on the above information find the number coded for the following symbols.



(1) 63205

(2) 11309

(3) 11523

(4) 65230

Ans. (2)

Sol. By observation

11309

68. Five friends decided to play a game of badminton. Each of the five plays against every other friend. The winner gets two points for each game he or she wins and the loser gets zero. Then which of the following cannot represent the scores of five friends?

(1) 4, 4, 4, 4, 4

(2) 6, 4, 4, 4, 2

(3) 8, 8, 2, 2, 0

(4) 6, 6, 4, 2, 2

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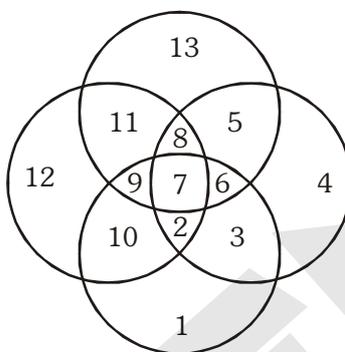
Ans. (3)

Sol. Player 1	Player 2	Player 3	Player 4	Player 5
8	8	2	2	0
(2,2,2,2)	(2,2,2,2)			

All the option follow according to given condition except option (3)

In this Player 1 & Player 2 can play only 1 time but in option (3) they play 2 times.

69. Study the given figure and answer the following question



Let x denote sum of numbers present in at least 2 circles and y denote sum of numbers present in exactly 3 circles. Then $x - y =$ _____.

- (1) 11 (2) 25 (3) 36 (4) 61

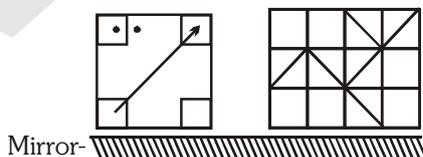
Ans. (3)

Sol. x (sum of number present in at least 2 circles) = $(11 + 5 + 3 + 10 + 8 + 9 + 6 + 2 + 7) = 61$

y (sum of numbers present in exactly 3 circles) = $(9 + 8 + 6 + 2) = 25$

$\Rightarrow x - y = 61 - 25 = 36$

70. Choose the correct mirror image of the following figure, if the mirror is placed as shown.

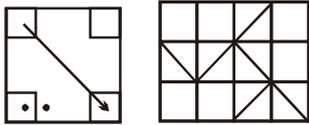


- (1)
- (2)
- (3)
- (4)

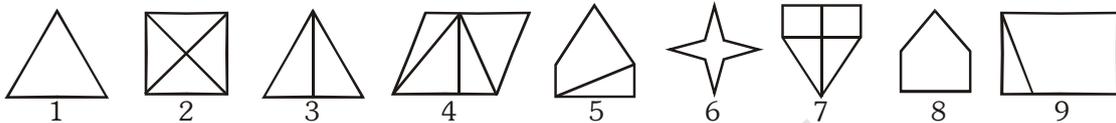
SOLUTIONS
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Ans. (1)

Sol. By observation,



71. Observe the figures given below :



Based on the above figures identify the correct group of categorization?

- (1) 1,3,6; 2,4,9; 5,7,8 (2) 1,2,3; 4,5,8; 6,7,9 (3) 1,6,8; 3,5,9; 2,4,7 (4) 1,3,6; 2,5,7; 4,8,9

Ans. (3)

Sol. 1,6,8 are figures that have pattern having no diagonal
 3,5,9 are figures that have pattern having one diagonal
 2,4,7 are figures that have pattern having four partitions.

72. Raju invited friend George for a dinner at his house. When George asked for the direction of Raju's house, Raju gave him the following instruction:

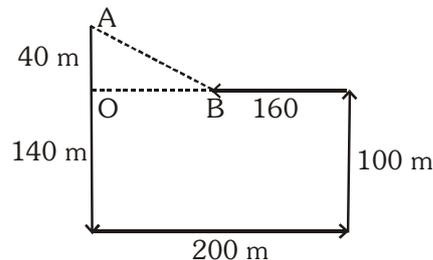
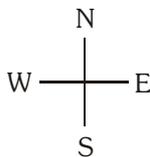
Proceed 140 metres south from your house then walk 200 metres to east. Then turn to north and walk 100 meters. After than, walk 160 metres to west.

What is the shortest distance between the two houses and the direction to Raju's house from George's house?

- (1) $40\sqrt{2}$ metres and north-west (2) $40\sqrt{2}$ metres and south-east
 (3) 80 metres and south-east (4) 80 metres and north-west

Ans. (2)

Sol.



$$\begin{aligned} \text{In } \triangle OAB \Rightarrow AB &= \sqrt{OA^2 + OB^2} \\ &= \sqrt{40^2 + 160^2} \\ &= 40\sqrt{2} \text{ meters and south-east} \end{aligned}$$

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- 73.** In a code language if 'APPEAL' is coded as '256572' and 'PLAY' is coded as '7259' then in the same language 'PEARL' will be coded as (each number code stands for unique alphabet)_____.
- (1) 25768 (2) 25387 (3) 67522 (4) 25679

Ans. (1)

Sol. APPEAL → 256572

PLAY → 7259

PEARL → ?

here P → 5 or 2
 A → 2 or 5
 L → 7
 E → 6

So, P E A R L
 5/2 6 2/5 _ 7

According to options only option (1) is correct.

Directions : (74-76)

Five students Ujith, Mahi, Rizan, Sahir and Amelia appeared for an examination in English and Mathematics.

- I. Sahir scored more marks than Amelia in Mathematics but scored less in English than Ujith and Mahi.
- II. In Mathematics Rizan scored more marks than Amelia but less than what Mahi has scored.
- III. Amelia scored more than Rizan in English and Rizan in English and Rizan scored more than Mahi in English.
- IV. Ujith scored more than Mahi in Mathematics but less than Rizan in English.
- V. Sahir scored less than Mahi in Mathematics.

Sol. (74-76)

According to given Information :-

Mathematics :-

Amelia < Sahir < Mahi < Ujith < Rizam

English :-

Sahir < Ujith < Mahi < Rizam < Amelia

- 74.** The least scorer in Mathematics and top scorer in English are respectively
- (1) Sahir and Ujith (2) Amelia and Amelia (3) Ujith and Sahir (4) Ujith and Ujith

Ans. (2)

Sol. Amelia and Amelia

75. Which of the following cannot be determined?

- (1) Amelia scored more than Mahi in English.
- (2) Mahi scored more than Amelia in Mathematics
- (3) Sahir scored less than Mahi both in Mathematics and English.
- (4) Ujith scored less than Mahi in English

Ans. (4)

Sol. Ujith scored less than Mahi in English

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76. Which of the following is necessarily correct?

- (1) Rizan scored more than Sahir in Mathematics.
- (2) Ujith scored more than Sahir both in Mathematics and English
- (3) Sahir scored more than Ujith in Mathematics.
- (4) Rizan scored more than Ujith both in English and Mathematics

Ans. (2)

Sol. Ujith scored more than sahir both in Mathematics and English.

77. The third day before 1st January 2019 was Saturday. Which day will the fourth day of March 2020 be?

- (1) Friday
- (2) Saturday
- (3) Wednesday
- (4) Thursday

Ans. (3)

Sol. Third day before 1st Jan 2019 = Saturday

∴ 1st Jan 2019 = Tuesday

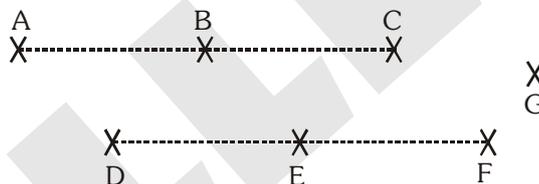
∴ 1st Jan 2020 = Wednesday

No. of days from 1st Jan 2020 - 4th March 2020 = 30 + 29 + 4 = 63

No of odd days = 0

Sol 4th march 2020 = Wednesday

78. Observe the given figure below



Based on the figure how many maximum numbers of triangles can be formed with the seven points A, B, C, D, E, F and G?

- (1) 21
- (2) 24
- (3) 33
- (4) 36

Ans. (3)

Sol. AB → ABD, ABE, ABF, ABG

BC → BCD, BCE, BCF, BCG

CG → CGD, CGE, CGF

GF → GFB, GFA

EF → EFG, EFC, EFB, EFA

DE → DEA, DEB, DEC, DEG

AD → ADC, ADG

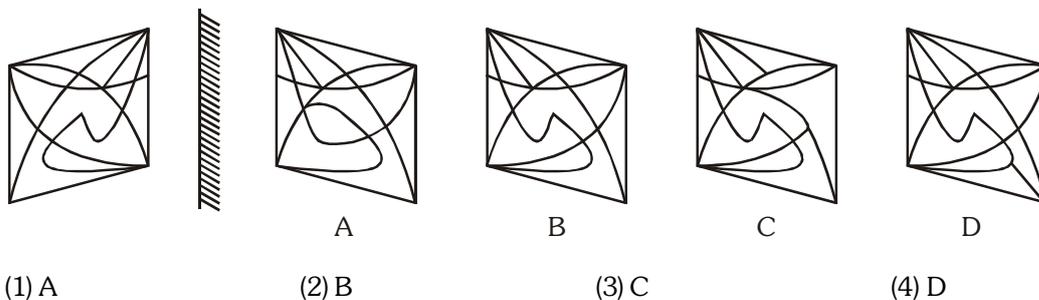
AC → ACE, ACF, ACG

DF → DAF, DFB, DFC, DFG

DBG, CEG

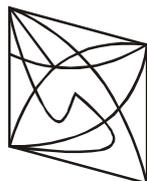
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79. Find the correct mirror mage for the following problem figure from the alternatives.

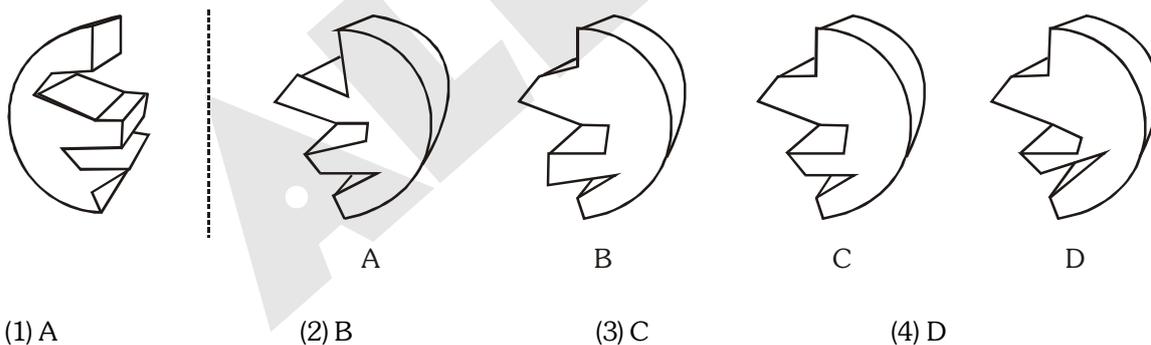


Ans. (2)

Sol. By observation,

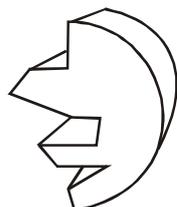


80. A circular disc is cut into two parts, One of the parts is given as the question figure. Which is the other part? Select from the options.



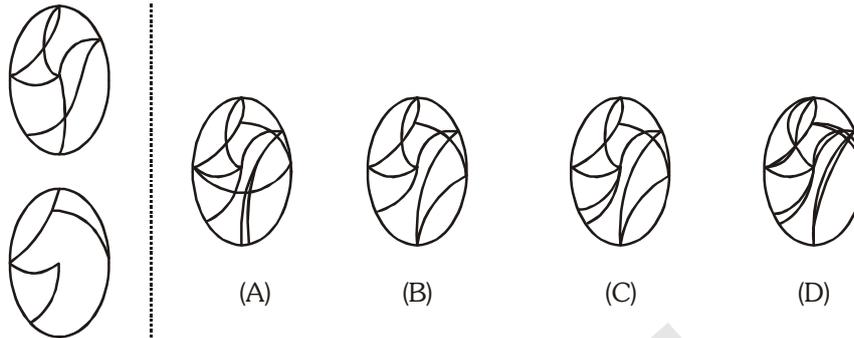
Ans. (3)

Sol. By observation,



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81. Two figures on transparent sheets are given on the left side. When the upper figure is exactly placed on the lower figure, find from the option figures how the resultant looks like.



(1) A

(2) B

(3) C

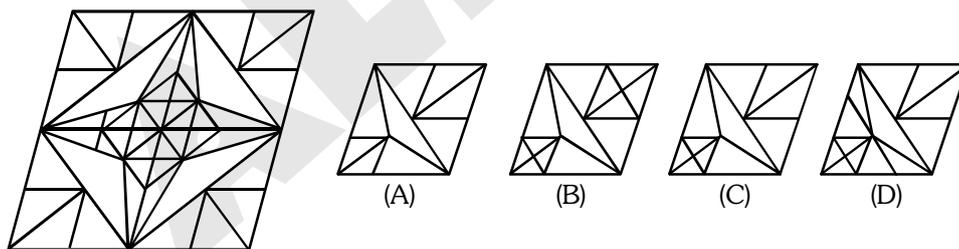
(4) D

Ans. (4)

Sol. By observation



82. Find the missing part of the given figure from the alternatives which completes the pattern.



(1) A

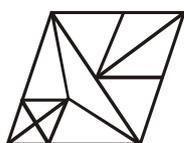
(2) B

(3) C

(4) D

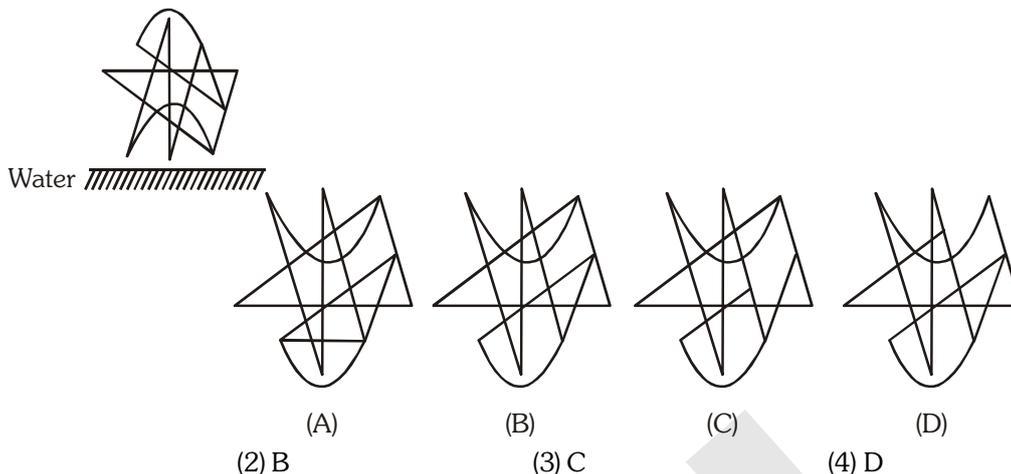
Ans. (3)

Sol. By observation



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83. Find the correct water image for the following problem figure choosing from the alternatives.



(1) A

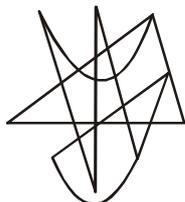
(2) B

(3) C

(4) D

Ans. (2)

Sol. By observation



Directions: (Questions 84-88)

In the following question, there are statements followed by conclusions. Choose the conclusion(s) which must logically follow from the given statements.

84. Statements:

- A. Some grandmothers are mothers.
- B. Some mothers are daughters.
- C. All the daughters are married women.

Conclusions:

- I. Some married women are mothers.
- II. Some daughters are grandmothers.
- III. No daughter is grandmother.
- IV. Some mothers are grandmothers.

(1) Only I and II

(2) Only II and III

(3) Only II and IV

(4) Only I and IV

Ans. (4)

Sol. By observation



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85. Statements:

- A. Some students are smart-working.
- B. All Intelligent are smart-working.
- C. All the teachers are students.

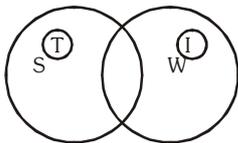
Conclusions:

- I. Some students are Intelligent.
- II. No teacher is smart-working.
- III. Some intelligent are students.

- (1) Either I or II (2) Only I and II (3) None of I, II and III (4) Only I and III

Ans. (3)

Sol. By observation



86. Statements:

- A. Some students are orators.
- B. All orators are goalkeepers.
- C. Some goalkeepers are honest.

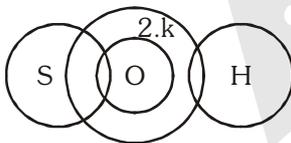
Conclusions:

- I. Some students are honest.
- II. Some goalkeepers are students.

- (1) Only conclusion I (2) Only conclusion II
(3) Both conclusion I and II (4) Neither conclusion I nor II

Ans. (2)

Sol. By observation



87. Statements:

- A. Some men are women.
- B. All women are teachers.
- C. Some teachers are doctors.

Conclusion:

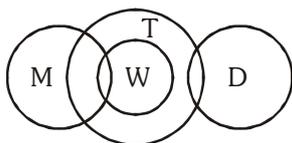
- I. Some doctors are women.
- II. Some teachers are women.
- III. Some teachers are men.
- IV. Some doctors are men.

- (1) Only I and II (2) Only I and IV (3) Only II and III (4) Only III and IV

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Ans. (3)

Sol. By observation



88. Statements:

- A. Some candidates are students.
- B. All children are citizens.
- C. All citizens are candidates.

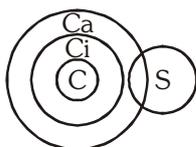
Conclusions:

- I. Some citizens are students.
- II. Some candidates are children.
- III. All children are candidates.
- IV. No child is student.

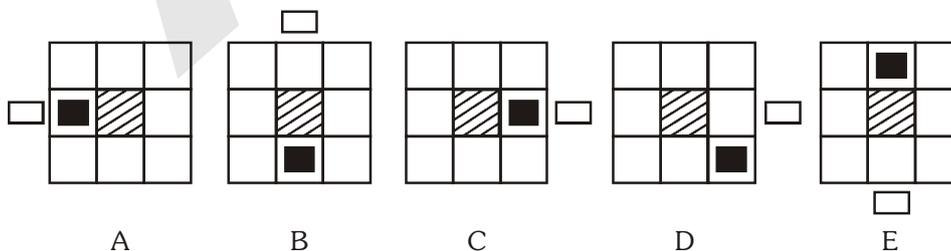
- (1) Only I and II (2) Only II and III (3) Only III and IV (4) Only I, II and III

Ans. (2)

Sol. By observation



89. Study the figure given below:



Find which figure is to be removed, starting from A, so that all fit into a pattern.

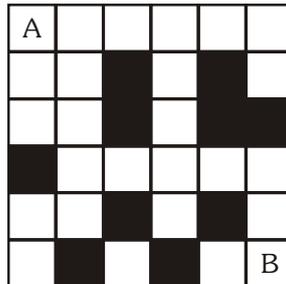
- (1) B (2) C (3) D (4) E

Ans. (3)

Sol. By observation, option (3) not fit in the series.

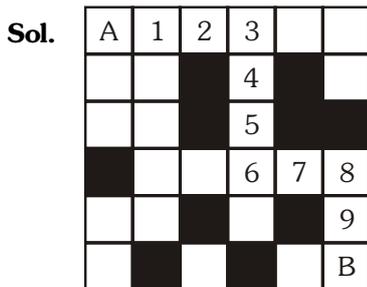
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90. What is the minimum number of un-shaded boxes to be crossed for covering the shortest path from 'A' to 'B' (both exclusive) without retracing the path and without diagonal movements?



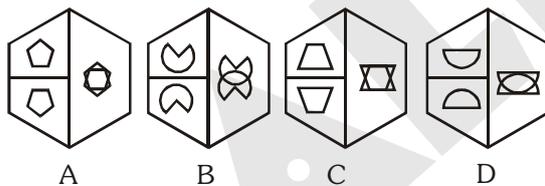
- (1) 8 (2) 9 (3) 10 (4) 11

Ans. (2)



Unshaded boxes to be cover 9.

91. Observe the figures given below:



The odd one out from the given figure is

- (1) A (2) B (3) C (4) D

Ans. (2)

Sol. By observation option (2)



92. A river flows along the East-West direction. On a particular day in the morning Kisku was seen at a place 'A' located on the northern side of the river and on the same evening he was seen at a place 'B' located on the southern side of the river.

Following are the comments made by four friends - Paulomi, Mimeo, Sabeena and Grayson.

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- I. Paulomi said, Kisku must have crossed the river only once.
- II. Sabeena said, Kisku might have crossed the river four times.
- III. Mimee said, he might have crossed it five times.
- IV. Grayson said, he might have crossed it any number of times.

Choose the correct alternative from the following:

- (1) Only I is correct (2) Only II is correct (3) I or III is correct (4) I and II are correct

Ans. (3)

Sol. Option (3), I or III is correct. If kisku cross the river odd number of times than kishu is at B place from A.

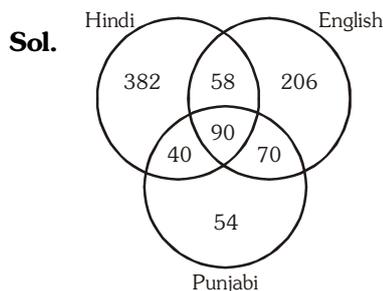
Directions: (Questions 93-94)

In a town of 1000 people, 570 read Hindi newspaper, 424 read English newspaper and 254 read Punjabi newspaper. 40 read only Hindi and Punjabi newspaper, 58 read only Hindi and English newspaper, and 70 read only Punjabi and English newspaper. 100 read no newspaper.

93. How many people read only newspaper?

- (1) 570 (2) 642 (3) 914 (4) 968

Ans. (2)

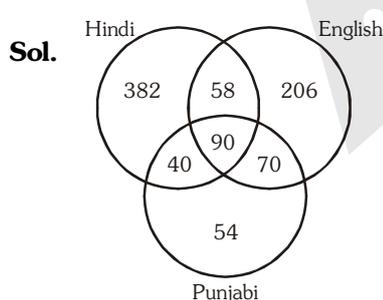


Clearly, 642 people read only one newspaper.

94. How many people read all the three newspapers?

- (1) 40 (2) 58 (3) 70 (4) 90

Ans. (4)



Clearly, 90 people read all the three newspaper.

95. Complete the given letter analogy.

LTFQIW : YGSJVD :: DOIYKV : ?

- (1) QBVIXL (2) WLRBCI (3) QLVBXE (4) QBVLXJ

Ans. (3)

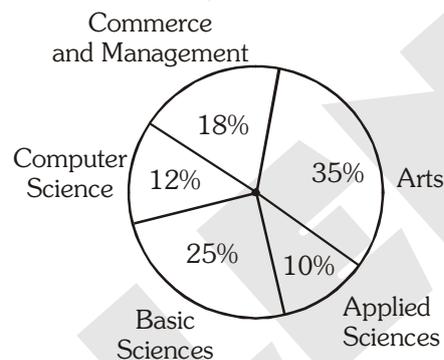
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Sol.

12	20	6	17	9	23
L	T	F	Q	I	W
+13		+13		+13	
Y	G	S	I	V	D
25	7	19	10	22	4

4					
D	O	I	Y	K	V
+13	↓	+13	↓	+13	↓
Q	L	V	B	X	E
17					

96. The given pie-diagram shows the streams opted by students at senior-secondary level.



If sum of the angles for the students who opted different streams is 144° then the streams are _____

- (1) Arts, Applied Sciences.
- (2) Basic Sciences, Computer Science.
- (3) Basic Sciences, Commerce and Management.
- (4) Applied Sciences, Computer Science, Commerce and Management.

Ans. (4)

Sol. $100\% = 360$

$$1\% = 3.6$$

$$\text{So, } 144^\circ = 40\%$$

From pie chart

$$40\% = \text{Applied Science, Computer Science, Commerce and Management.}$$

97. Four relations have been given as alternatives (p), (q), (r), (s), out of which only one becomes acceptable if the signs, + and \div and the numbers, 4 and 5 are mutually interchanged. Identify that relation.

(1) $24 + 8 \times 4 = 20 \div 5$

(2) $20 \div 4 \times 16 + 5 = 75$

(3) $3 \times 24 + 5 = 16 \div 4$

(4) $20 \div 5 - 6 = 3 \times 30 + 4$

Ans. (4)

Sol. From option (4)

$$20 + 4 - 6 = 3 \times 30 \div 5$$

$$24 - 6 = 3 \times 6$$

$$18 = 18$$

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98. There are 20 steps to go to the first floor of a building from the ground floor. A child starts climbing up from the first step of the ground level. Mother starts coming, down from the fourth step from the floor level of the first floor. If both have started at the same time with same speed, at which step would they meet counting from the first step from the floor level of the first floor?

- (1) 9 (2) 10 (3) 11 (4) 12

Ans. (4)

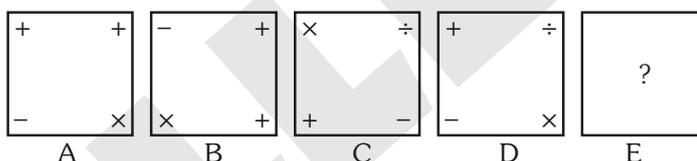
Sol.

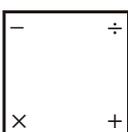
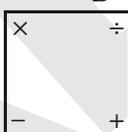
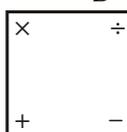
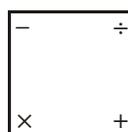
Mother	Son
17	1
16	2
15	3
14	4
13	5
12	6
11	7
10	8

9 9

then from 1st floor they meet 12th step.

99. The following question consists of four problem figures marked as A, B, C and D. Select a figure in place of '?' for E which will continue the series established by the four problem figures, A, B, C, D.

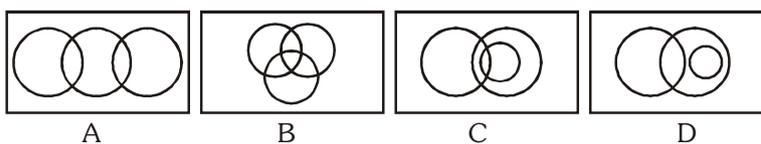


- (1)  (2)  (3)  (4) 

Ans. (1)

Sol. Option (1), by observation.

100. Which one of the following venn diagrams represents the relation among men, doctors and patients in a hospital?



- (1) A (2) B (3) C (4) D

Ans. (1)

