

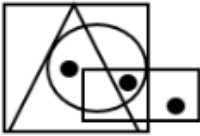
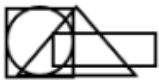
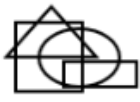

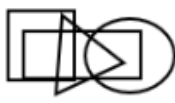
AFCAT Memory Based Paper - 10 Aug 2024 (Shift 1)



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- Q1** When I was going to the office from my house early in the morning, my shadow formed on my right hand side. In which direction I am going to office?
 (A) North (B) East
 (C) West (D) South
- Q2** Identify the figure which satisfies the same condition of placement of dots as in given figure.
- 
- (A) 
- (B) 
- (C) 
- (D) 
- Q3** If BAT is coded as 23 and RABBIT is coded as 52, then how will you code RESEARCH?
 (A) 67 (B) 77
 (C) 57 (D) 75
- Q4** Three of the following letter-number-clusters are alike in some manner and hence form a group. Which letter-number-cluster does not belong to that group?
 (A) NV4 (B) IM2
 (C) DK4 (D) GR9
- Q5** When will the hour and minute hands be opposite to each other in time 7 to 8 ?
 (A) 7 'o' clock 5 minute
 (B) 7 'o' clock $15\frac{5}{11}$
 (C) 7 'o' clock $5\frac{5}{11}$
 (D) 7 'o' clock $5\frac{10}{11}$
- Q6**

Among five girls Anju, Bittu, Charul, Drishti and Sara all have different ages. Anju is younger than only Drishti and Sara. Sara is younger than Drishti and older than Bittu. Charul is the youngest. Who is the fourth eldest among the girls?

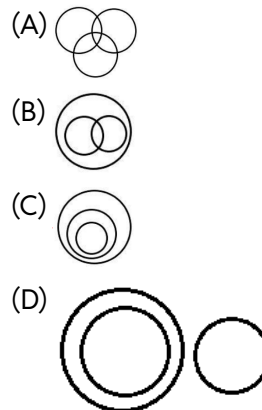
- (A) Bittu (B) Sara
 (C) Charul (D) Drishti

- Q7** If A's rank from the top is 25 and the number of persons sitting behind A is the twice person sits its above A. Find the number of persons sitting between A and B, if B's rank from the bottom is 7.
 (A) 40 (B) 43
 (C) 41 (D) 42

- Q8** Rani is the sister of Piyush and the daughter of Kamal. Kamal is the son of Gaurav and the brother of Aryan. Aryan is the father of Rajneesh. How is Aryan related to Piyush?
 (A) Paternal Grandfather
 (B) Paternal Uncle
 (C) Brother
 (D) Father

- Q9** In the family there are four members Grandmother, Husband, Wife and Child. P is the grandmother of M is mother of N. O is the wife of N. How O related to M.
 (A) Sister (B) Daughter
 (C) Wife (D) Mother

- Q10** Select the Venn diagram that best illustrates the relationship between the following classes. Prime number, Natural number, Whole number



Q11

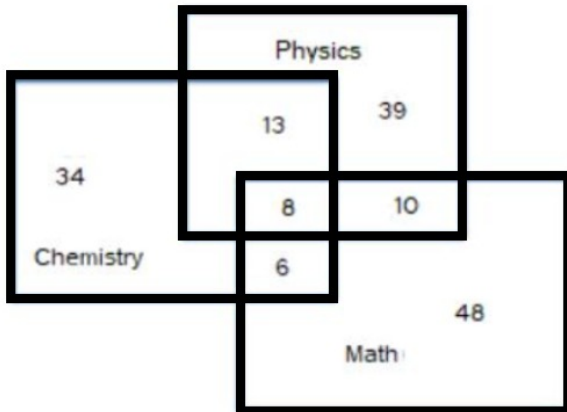


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The diagram given below represents those students who study Physics, Chemistry and Math. Find the number of students who study Physics and Chemistry but not Math.



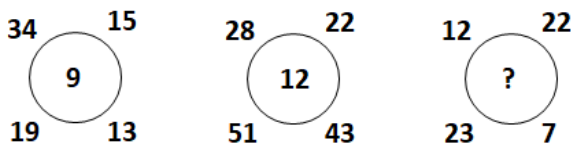
- (A) 8 (B) 13
(C) 6 (D) 10

Q12 Study the given pattern carefully and select the number that can replace the question mark (?) in it.

7	5	4	144
9	2	1	120
6	8	6	?

- (A) 180 (B) 190
(C) 202 (D) 198

Q13 Study the given pattern carefully and select the number from among the given options that can replace the question mark (?).



- (A) 8 (B) 16
(C) 4 (D) 64

Q14 A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.

1, 5, 5, 9, 7, 11, 11, 15, ?, 17

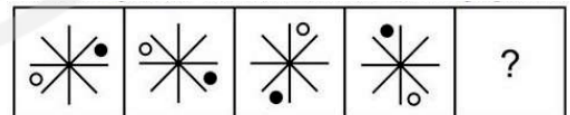
- (A) 10 (B) 16
(C) 13 (D) 11

Q15 Select the option figure that can replace the question mark (?) in the following series.



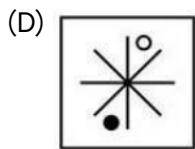
- (A)
- (B)
- (C)
- (D)

Q16 Select the figure that will come next in the following figure series.



- (A)
- (B)
- (C)





Q17 Arrange these letters of each group to make a meaningful word and then find the odd one out.

- (A) VEENS (B) VIDEID
(C) ORFU (D) GHIET

Q18 Arrange these letters of each group to make a meaningful word and then find the odd one out.

- (A) ANCEDC (B) BAHECN
(C) ARAHHGG (D) TIMGO

Q19 In the following question, select the related number from the given alternatives.

20 : 11 :: 102 : ?

- (A) 50 (B) 49
(C) 48 (D) 52

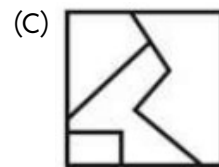
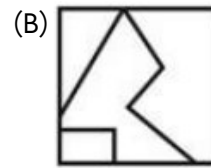
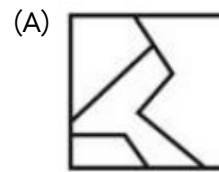
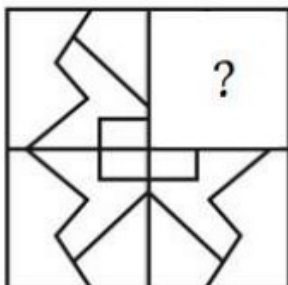
Q20 In a certain code language, 'TALCUM' is written as 'LSZHAVN' and 'GRAINS' is written as 'RLFWMA'. How will 'LOWER' be written in that language?

- (A) QDTKH (B) QCTKG
(C) PCTKG (D) QCTKH

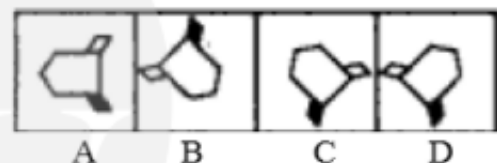
Q21 In a certain code language, 'TRAM' is written as 'UQBL' and 'PAST' is written as 'QZTS'. How will 'DEED' be written in that language?

- (A) FEDC (B) EFCD
(C) CEFD (D) EDFC

Q22 Which answer figure will complete the pattern in the question figure?



Q23 Select the figure that does NOT belong in the following group.



- (A) C (B) D
(C) A (D) B

Q24 Select the option that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.

QPON : RRRR :: IJGK : JLJO :: PKON : ?

- (A) QMRR (B) RQRM
(C) MQRR (D) RRMQ

Q25 Select the number from among the given options that can replace the question mark (?) in the following series.

74, 74, 72, 24, ?, 4

- (A) 21 (B) 20
(C) 15 (D) 9



Answer Key

Q1 (D)
Q2 (B)
Q3 (B)
Q4 (C)
Q5 (C)
Q6 (A)
Q7 (C)
Q8 (B)
Q9 (D)
Q10 (C)
Q11 (B)
Q12 (B)
Q13 (A)

Q14 (C)
Q15 (D)
Q16 (A)
Q17 (B)
Q18 (A)
Q19 (D)
Q20 (B)
Q21 (D)
Q22 (C)
Q23 (B)
Q24 (A)
Q25 (B)



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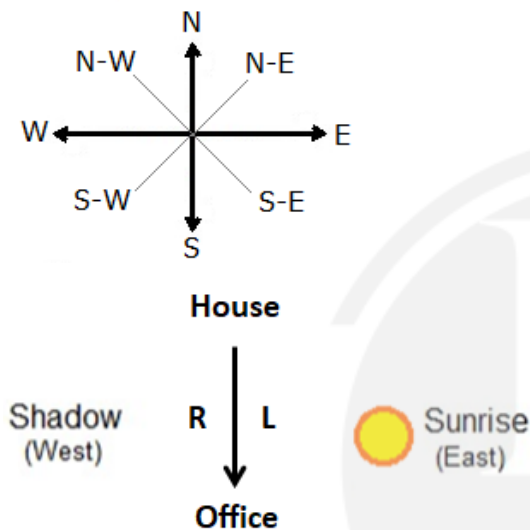
Hints & Solutions

Q1 Text Solution:

Here, in this question we have to find the direction according to the direction figure.

- As we know that during the sunrise, the shadow of an object will always be towards the west.

According to instruction in the given question below is the explanation:



Hence, "South" is the correct answer.

Q2 Text Solution:

Explanation: Here, in the given figure first dot lies in the region common to circle, triangle and square, second dot lies in the region circle, square and rectangle, and the third dot lies in rectangle region only. So, the option which consists of these regions is the answer.



Hence the answer is

Q3 Text Solution:

Logic : The sum of the positional value of the alphabets in a word.

The positional value of the English alphabet is given below.

Positional Number	1	2	3	4	5	6	7	8	9	10	11	12	13
Letter	A	B	C	D	E	F	G	H	I	J	K	L	M
Letter	Z	Y	X	W	V	U	T	S	R	Q	P	O	N
Positional Number	26	25	24	23	22	21	20	19	18	17	16	15	14

In the given word :

- BAT :: 23**

$$\text{Bat} = 2 + 1 + 20 = 23$$

And,

- RABBIT :: 52**

$$\text{Rabbit} = 18 + 1 + 2 + 2 + 9 + 20 = 52$$

Similarly,

- RESEARCH :: ?**

$$\text{Research} = 18 + 5 + 19 + 5 + 1 + 18 + 3 + 8 = 77$$

Hence, 77 is the correct answer.

Q4 Text Solution:

Logic: Sum of place value of letters and number is equal to Even

- NV4 = 14 + 22 + 4 = 40 = even
- IM2 = 9 + 13 + 2 = 24 = even
- DK4 = 4 + 11 + 4 = 19 ≠ even
- GR9 = 7 + 18 + 9 = 34 = even

So, DK4 is the odd one out.

Hence, DK4 is the correct answer.

Q5 Text Solution:

By formulae,

As we know hour and minute hands will be opposite then angle will be 180 degree.

$$\text{If } \emptyset \geq 180$$

$$M = \frac{2}{11} (30 \times H - \emptyset)$$

Here, $\emptyset = 180$, $H = 7$, $M = ?$

$$M = \frac{2}{11} (30 \times 7 - 180)$$

$$\frac{11M}{2} = 210 - 180$$

$$11M = 60$$

$$M = \frac{60}{11}$$



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$$M = 5 \frac{5}{11}$$

At 7 'o' clock $5 \frac{5}{11}$ minutes will the hour and minute hands be opposite to each other.

Hence, 7 'o' clock $5 \frac{5}{11}$ minutes is the correct answer.

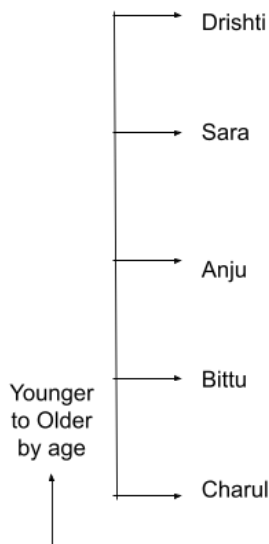
Q6 Text Solution:

In this question we have to find who is the fourth eldest girl among five girls Anju, Bittu, Charul, Drishti and Sara.

According to the question:-

- Anju is younger than only Drishti and Sara.
- Sara is younger than Drishti and older than Bittu.
- Charul is the youngest.

The final arrangement is :-



Hence, "Bittu" is the correct answer.

Q7 Text Solution:

Given

Position of A from top = 25th

Number of person behind A is = $24 \times 2 = 48$

Total number of person in row is = $25 + 48 = 73$

Position of B from bottom = 7th

Apply formula of two persons:-

Total = Top + Bottom + Between

$73 = 25 + 7 + \text{Between}$

$73 = 32 + \text{Between}$

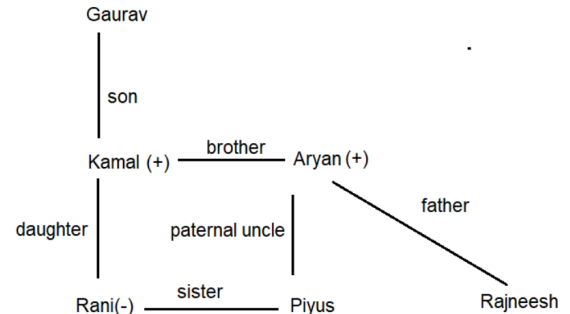
Between = $73 - 32 = 41$

Hence, 41 is the correct answer.

Q8 Text Solution:

We have been given some relation between the persons in the given question, according to the given question, we have to make a family tree and find the answer of the given question.

Following family tree can be drawn:



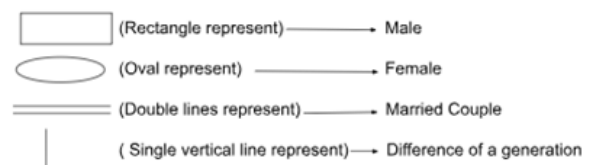
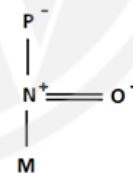
From the above figure, it's clear that Aryan is Paternal Uncle of Piyush.

Hence, **"Paternal Uncle"** is the correct answer.

Q9 Text Solution:

We have been given some relation between the persons in the given question, according to the given question, we have to make a family tree and find the answer of the given question.

- The family tree is as follow



Here, we see "O" is the "Mother" of "M".

Hence, Mother is the correct answer..

Q10 Text Solution:

Here, in this question we have to find the best illustration of the relation between the following classes.

- **Given:-**



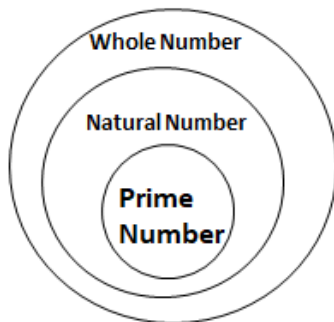
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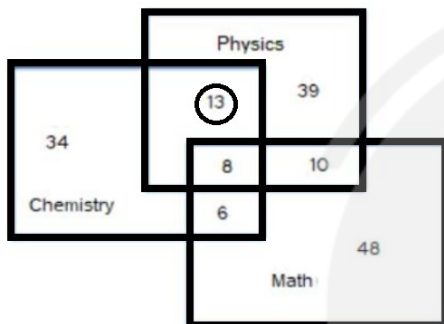
Prime number, Natural number, Whole number

- All Prime numbers are Natural numbers.
- All Natural numbers are Whole numbers.



Hence, Option C is the correct answer .

Q11 Text Solution:



Circle part which is 13 represent number of students who study Physics and Chemistry but not Math.

Hence, **13** is the correct answer.

Q12 Text Solution:

In this question we have to find out which number given in the option will replace the question mark.

Logic: In row $\rightarrow \{\text{Square of (First number + Second number)}\} - \text{Third number} = \text{Fourth number}$

The pattern is as follows:

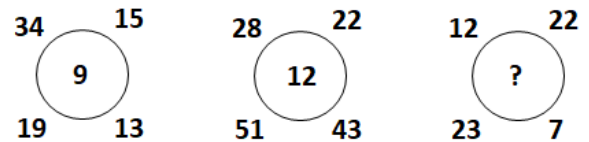
- Row I \Rightarrow square of $(7 + 5) - 4$
 $144 - 4 = 140$
- Row II \Rightarrow square of $(9 + 2) - 1$
 $121 - 1 = 120$

Similarly,

- Row III \Rightarrow square of $(6 + 8) - 6$
 $196 - 6 = 190$
-

Hence, "**190**" is the correct answer.

Q13 Text Solution:



Here the logic is as follows

We add all four to the outer number we get the centre number.

From figure A-

$$34 + 15 + 19 + 13 = 81$$

81 is square root of 9

From the figure B:-

$$28 + 22 + 51 + 43 = 144$$

144 is square root of 12

Similarly,

From the figure C:-

$$12 + 22 + 23 + 7 = 64$$

64 is square root of 8

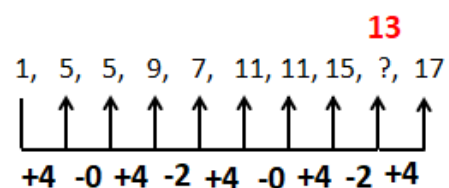
Hence, 8 is the correct answer.

Q14 Text Solution:

Here, according to the given question we have to find the missing number in this series.

Given series:- 1, 5, 5, 9, 7, 11, 11, 15, ?, 17

The difference used is:- +4, -0, +4, -2 (this difference is repeat)



So, the missing number will be 13 which follows the same pattern.

Hence, **13** is the correct answer.

Q15 Text Solution:

Logic:

$$6:10 + 1:05 = 7:15$$

$$7:15 + 2:10 = 9:25$$

$$9:25 + 3:15 = 12:40$$



so, next

$$12:40 + 4:20 = 5:00$$

Hence, "5:00" is the correct answer.

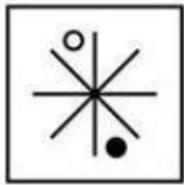
Q16 Text Solution:

In this type of question, we have been given a series. In this series we have to find the missing figure of this series by finding the relation.

Logic:-

- The empty circle shifted in clockwise direction in +1, +2, +3, +4 places in next step.
- The shaded circle shifted in clockwise direction in +1, +2, +3, +4 places in next step.

So the next figure is :-



Hence, "option A" is the correct answer.

Q17 Text Solution:

Given Words → Meaningful Words

VEENS ⇒ SEVEN

VIDEID ⇒ DIVIDE

ORFU ⇒ FOUR

GHIET ⇒ EIGHT

Except DIVIDE, all others are numbers.

So, "VIDEID" is the odd one out.

Hence, the correct answer is "VIDEID".

Q18 Text Solution:

Given Words → Meaningful Words

ANCEDC → DECCAN

BAHECN → CHENAB

ARAAHHGG → GHAGHARA

TIMGO → GOMTI

Except DECCAN, all others are rivers of India.

Hence, 'ANCEDC' is the odd one out.

Q19 Text Solution:

Here, in this question we have to find the second pair of number.

Given: 20 : 11 :: 102 : ?

$$20 : 144$$

$$= (20 \div 2) + 1 = 10 + 1 = 11$$

Similarly,

$$102 : 52$$

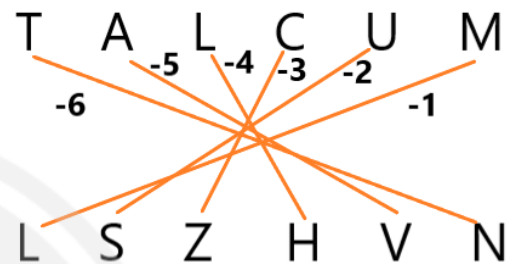
$$= (102 \div 2) + 1 = 51 + 1 = 52$$

Hence, the correct answer is 52.

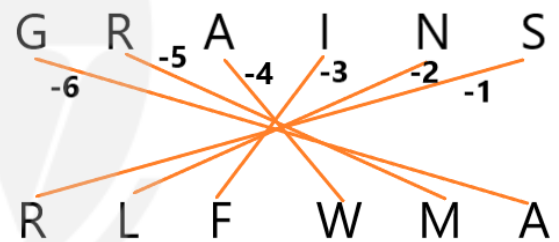
Q20 Text Solution:

The pattern is as follows:

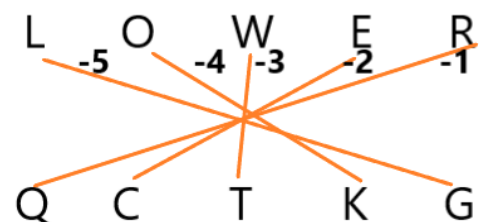
- TALCUM is coded as LSZHVN



- GRANN is coded as RLFWMA



- LOWER is coded as = ?



Hence, QCTKG is the correct answer.

Q21 Text Solution:

The simplest way to solve this question is to find the alternative which follows the same relation as the coded form of the given word.

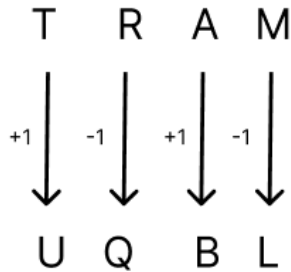
The logic is as follows:-



- Here to get the code word +1 in the first letter of the related word, -1 in the second letter and this is being done alternately.

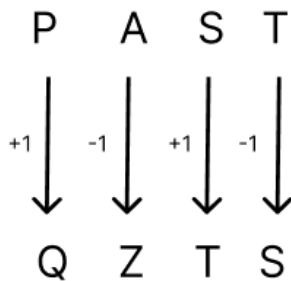
As,

TRAM → UQBL



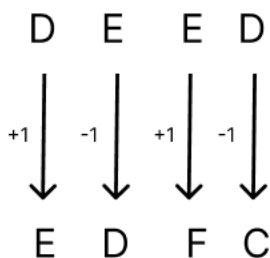
And,

PAST → QZTS



Similarly,

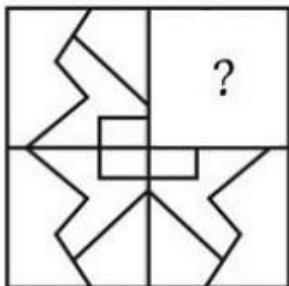
DEED →



Hence, EDFC is the correct answer.

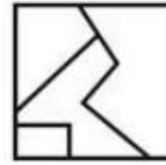
Q22 Text Solution:

According to the Question,
The given figure is,



Here, we have to find out which answer figure will complete the pattern in the question figure.

- On close observation, option (C) figure is complete the pattern in the question figure.



Hence, the correct answer figure is option (C).

Q23 Text Solution:

Here the pattern followed is:



→ Left part is shaded.



→ Left part is shaded.



→ Left part is shaded.



→ Right part is shaded.

- We can see, in figure(D) right part is shaded, whereas the left part is shaded in rest of the figures.

Therefore, **Figure D** does not belong in the group.

Hence, **Option(B)** is the correct answer.

Q24 Text Solution:

Here, in the given question, we have to find out letter-cluster that is related to the fifth letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster and the fourth letter-cluster is related to the third letter-cluster.



Given series:- QPON : RRRR :: IJGK : JLJO ::

PKON : ?

The logic used is:-

1st letter +1 = 1st coded letter; 2nd letter +2 =

2nd coded letter; 3rd letter +3 = 3rd coded

letter and 4th letter + 4 = 4th coded letter.

- QPON: RRRR

Q	P	O	N
R	R	R	R
+1	+2	+3	+4

- IJGK : JLJO

I	J	G	K
J	L	J	O
+1	+2	+3	+4

Similarly,

- PKON: ?

P	K	O	N
Q	M	R	R
+1	+2	+3	+4

So, QMRR is the related letter-cluster of PKON.

Hence, QMRR is the correct answer.

Q25 Text Solution:

The pattern is as follow:

$$4 \times 5 = 20$$

$$20 + 4 = 24$$

$$24 \times 3 = 72$$

$$72 + 2 = 74$$

$$74 \times 1 = 74$$

So, the missing term is 20.

Hence, option B is the correct answer.



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