

- Q.1** At the end of a business conference the ten people present all shake hands with each other once. How many handshakes will there be altogether?
- A. 20
 - B. 45
 - C. 55
 - D. 90

Answer: B

Sol: Given:
There are 10 people at the business conference.

Each person shakes hands with every other person once.

Concept Used:

The problem is a combination problem where we need to calculate how many ways two people can be chosen out of 10 to shake hands. This can be solved using the combination formula:

$$C(n, 2) = \frac{n(n - 1)}{2}$$

where n is the total number of people.

Solution:

Number of handshakes = $C(10, 2) = \frac{10(10 - 1)}{2} = \frac{10 \times 9}{2} = 45$

Therefore, there will be 45 handshakes altogether.

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- Q.2** If 2 October 2012 was Tuesday, then what was the day of the week on 1 October 2016?
- A. Sunday
 - B. Friday
 - C. Saturday
 - D. Thursday

Answer: C

Sol: Number of years = 4 (2012 to 2016)
Leap years = 1 (2016) → odd days = 2
Ordinary years = 3 → odd days = 3 × 1 = 3
Total odd days = 2 + 3 = 5
Day on 2 Oct 2012 = Tuesday
Day on 2 Oct 2016 = Tuesday + 5 days = Sunday
Since 1 Oct 2016 is 1 day before 2 Oct 2016:
Day on 1 Oct 2016 = Sunday - 1 day = **Saturday**
Thus, correct option is (c).

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- Q.3** Sabita decides to donate 8% of her monthly income to a charitable trust. On the day of donation, she changes her decision and donates ₹2,880, which is 20% less than the amount she had originally decided to donate. What is her monthly income (in ₹)?
- A. Rs. 36,000
 - B. Rs. 48,000
 - C. Rs. 45,000
 - D. Rs. 40,000

Answer: C

Sol: Given:

Decided donation = 8% of income
Actual donation = ₹2880
Actual donation is 20% less than decided donation.

Solution:

$Actual = 0.8 \times Decided$

Now,

$0.8 \times Decided = 2880$

$Decided = \frac{2880}{0.8} = 3600$

$Decided\ donation = 0.08 \times Income$

Now,

$0.08 \times Income = 3600$

$Income = \frac{3600}{0.08} = 45,000$

- Q.4** Seven friends namely – Rahul, Sachin, Pradeep, Jatin, Yash, Anmol and Chirag are living in a building of seven floors, lowermost floor is numbered 1, floor above it is numbered 2 and so on till the top-most floor which is numbered 7. Each person lives on a single floor. Rahul lives on a floor numbered four. No one lives below Chirag. Number of persons live between Anmol and Rahul are same as the number of persons live between Rahul and Yash. Sachin lives five floor above Jatin. Anmol live above Yash. Who lives on the middle floor?

A. Jatin

B. Chirag

C. Rahul

D. Sachin

Answer: C

Sol: Given:

Seven friends namely – Rahul, Sachin, Pradeep, Jatin, Yash, Anmol and Chirag are living in a building of seven floors, lowermost floor is numbered 1, floor above it is numbered 2 and so on till the top-most floor which is numbered 7. Each person lives on a single floor.
Rahul lives on a floor numbered four.
No one lives below Chirag.
Number of persons live between Anmol and Rahul are same as the number of persons live between Rahul and Yash.
Sachin lives five floor above Jatin.
Anmol live above Yash.
From the given information arrangement will be:

Floor	Person
7	Sachin
6	Pradeep
5	Anmol
4	Rahul
3	Yash

Floor	Person
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2 Jattin

1 Chirag

So, **Rahul** lives on the middle floor.
Thus, the correct option is: (c)

Q.5 If '+' means '-', '-' means '×', '×' means '÷', '÷' means '+', then what will come in place of the question mark (?) in the following equation?
 $112 \div 48 \times 2 + 15 - 6 = ?$

- A. 32
- B. 52
- C. 38
- D. 46

Answer: D

Sol: Given: $112 \div 48 \times 2 + 15 - 6 = ?$

Given Sign + - × ÷

New Sign - × ÷ +

Using **BODMAS** rule.

Operation preference wise	Symbol
Brackets	$[], , ()$
Orders, of	$(power), \sqrt{(root)}, of$
Division	$\div$
Multiplication	$\times$
Addition	$+$
Subtraction	$-$

New equation: $112 + 48 \div 2 - 15 \times 6 = ?$

$112 + 24 - 15 \times 6 = ?$

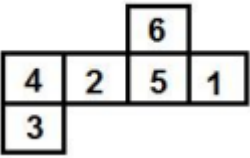
$112 + 24 - 90 = ?$

$136 - 90 = ?$

$? = \mathbf{46}$

Thus, correct option is (d).

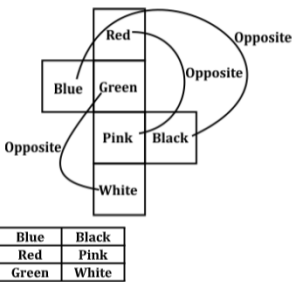
Q.6 A cube is made by folding the given sheet. In the cube so formed, which number will be on the face opposite to the face having the number '5'?



- A. 6
- B. 1
- C. 4
- D. 3

Answer: C

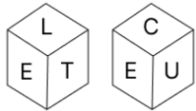
Sol:



Blue	Black
Red	Pink
Green	White

So, the opposite of **5** is **4**.
Thus, correct option is (c).

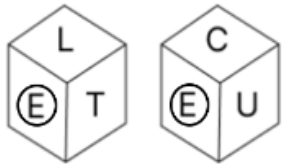
Q.7 A dice has its faces marked by letters C, L, A, U, T and E. Two positions of the same dice are shown in the given figures. Which face is opposite to face A?



- A. T
- B. E
- C. C
- D. U

Answer: B

Sol: Given:



Logic: All the letters are rotating clock wise.
E is common in both sides.

The opposites will be:

E	L	T
E	C	U

So, opposite of the **A** will be **E**.
Thus, the correct option is **(b) E**.

Q.8 All the four directions are placed in a clock in such a way that East direction is at numeral 3, North at 12, West at 9 and South at 6. If North direction is shifted to 5, then to what numeral West direction will shift?

- A. 2
- B. 1
- C. 12
- D. 8

Answer: A

Sol: The original directions (East, North, West, South) are arranged on a clock with:
East at numeral 3
North at numeral 12
West at numeral 9
South at numeral 6.
North moves from **12 to 5**, which is a clockwise shift.
The number of place moved:
= (5–12+12) = 5 place clockwise.
Now find the new position of West:
West starts at **9**.
Apply the same **5 place clockwise shift** to West:
New position of West = (9+5) = 14 – 12 = 2 place

So, After the shift, **West** moves to **numeral 2**.
Thus, correct option is (a).

Q.9 Using all the letters K, N, A, G and A, 5 letter words are made (with or without meaning). If these words are arranged as in a dictionary, the word NAAKG will appear at what place?

- A. 49
- B. 50
- C. 46
- D. 47

Answer: B

Sol: Given:

The word to find the dictionary rank for is NAAKG

The available letters are A, A, G, K, N (5 letters, with A repeated twice)

Solution:

The letters used, arranged alphabetically, are: A, A, G, K, N. (A is repeated twice).

One 'A' is fixed in the first position. The remaining 4 letters are A, G, K, N. Since all remaining letters are distinct,

Number of words = $4! = 24$

'G' is fixed first. The remaining 4 letters are A, A, K, N. A is repeated once $2!$

Number of words = $\frac{4!}{2!} = \frac{24}{2} = 12$

'K' is fixed first. The remaining 4 letters are A, A, G, N. A is repeated once $2!$

Number of words = $\frac{4!}{2!} = \frac{24}{2} = 12$

Total words before starting with N:

Total = $24 + 12 + 12 = 48$

Now, consider words starting with N. The remaining letters, arranged alphabetically, are A, A, G, K. The target word is NAAKG.

The second letter in the target word is A (the lowest available), so we proceed to the third letter. The remaining 3 letters are A, G, K.

The third letter is also A (the lowest available). The remaining 2 letters, arranged alphabetically, are G, K. We arrange these two letters in the last two positions.

Words starting with N A A G:

The only word possible here is when G is followed by the only remaining letter, K: NAAGK.

Number of words = $1! = 1$

Words starting with N A A K:

The next alphabetical arrangement begins with K. The only remaining letter is G: NAAKG (the target word).

Now,

Rank = $24 + 12 + 12 + 1 + 1 = 50$

Thus, the rank of the word NAAKG in the dictionary is 50

Q.10 What was the day of the week on 22 October 1979?

- A. Tuesday
- B. Wednesday
- C. Monday
- D. Sunday

Answer: C

Sol: To find the day of the week for 22 October 1979:
Odd days in 1900 (1600 + 300) years = 1 odd days
From 1900 to 1978 = $78 + 19 = 97$ odd days
From 1 Jan to 22 Oct 1979: $3 + 0 + 3 + 2 + 3 + 2 + 3 + 3 + 2 + 22 = 43$
Total odd days: $1 + 97 + 43 = 141 \rightarrow 141 \div 7 = 1$ odd days.
22 October 1979: **Monday**.

Code of the day	Day
0	Sunday
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday

Odd Days (365 mod 7 = 1)
Year Type

Normal Year 1 odd day

Leap Year 2 odd days

100 Years 5 odd days

200 Years 3 odd days

300 Years 1 odd day

400 Years 0 odd days

- Q.11** Seven phones A, B, C, D, E, F, and G were sold on seven different days of the same week from Monday to Sunday (not necessarily in the same order). No two phones are sold on the same day. D was sold immediately before B. There are two phones sold between E and G. E was sold before G. There are two phones sold between C and F. One phone was sold between A and F. C was sold on Thursday. G is not sold on Friday. Which one of the following statements is correct?

I. G was sold on Saturday.

II. F was sold on the last day.

A. Only I

B. Both I and II

C. Neither I nor II

D. Only II

Answer: B

Sol: Given:

Seven phones A, B, C, D, E, F, and G were sold on seven different days of the same week from Monday to Sunday (not necessarily in the same order).
No two phones are sold on the same day.
D was sold immediately before B.
There are two phones sold between E and G.
E was sold before G.
There are two phones sold between C and F.
One phone was sold between A and F.
C was sold on Thursday.
G is not sold on Friday.
From the given information arrangement will be:

Day	Phone
Monday	D
Tuesday	B
Wednesday	E
Thursday	C
Friday	A
Saturday	G
Sunday	F

I. G was sold on Saturday. → **Correct.**
II. F was sold on the last day. → **Correct**
So, Both I and II correct.
Thus, the correct option is: (b)

- Q.12** Five employees- L, M, N, O, and P work in an office on different floors. The lowest floor is numbered 1, the floor just above it is numbered 2 and so on till the topmost floor is numbered 5. L, M and N do not work on the lowest floor. P works on the topmost floor. M works on the fourth floor. N works below L. O does not work on the second floor. N works on which floor?

A. First

B. second

C. Fourth

D. Third

Answer: B

Sol: Given:

Five employees- L, M, N, O, and P work in an office on different floors.
The lowest floor is numbered 1, the floor just above it is numbered 2 and so on till the topmost floor is numbered 5.
L, M and N do not work on the lowest floor.
P works on the topmost floor.
M works on the fourth floor.
N works below L.
O does not work on the second floor.

From the given information arrangement will be.

FloorsEmployees

5	P
4	M
3	L
2	N
1	O

N works on **second** floor.
Thus, correct option is (b).

- Q.13** If 80% of 50% of A is equal to three times 25% of B, then A is what percentage more or less than B?
- A. 46.7% more
 - B. 87.5% less
 - C. 87.5% more
 - D. 46.7% less

Answer: C

Sol: Given :

80% of 50% of A = $3 \times 25\%$ of B

Formula Used :

Percentage form:

A more/less than B = $\frac{A - B}{B} \times 100$

Solution :

$80\% \times 50\% \times A = 3 \times 25\% \times B$

Convert to fractions:

$\frac{80}{100} \times \frac{50}{100} A = 3 \times \frac{25}{100} B$

$\frac{40}{100} A = \frac{75}{100} B$

$0.4A = 0.75B$

$A = \frac{0.75}{0.4} B = 1.875B$

$A = 1.875B$

Percentage more:

$$\frac{A - B}{B} \times 100 = \frac{1.875B - B}{B} \times 100$$

$$=0.875 \times 100= 87.5\%$$

A is 87.5% more than B.

Q.14 At half past 5 in the evening, the smaller angle between the hour & minute hands of a clock is:

- A. 10°
- B. 12°
- C. 15°
- D. 18°

Answer: C

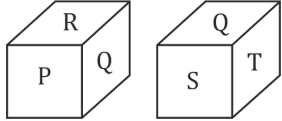
Sol: Given: At half past 5 in the evening.

Formula Used:

$$\begin{aligned} \text{Angle Between} &= \frac{11}{2} \times M - 30 \times H \\ &= \frac{11}{2} \times 30 - 30 \times 5 \\ &= 11 \times 15 - 150 \\ &= 165 - 150 \\ &= 15^0 \end{aligned}$$

Thus, correct option is (c).

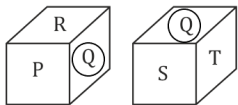
Q.15 Two different positions of the same dice are shown. Select the letter that will be on the face opposite to the face having the letter T?



- A. U
- B. P
- C. Q
- D. R

Answer: B

Sol: Logic: In these types of dice problems, we should write all three numbers/letters in clockwise or anticlockwise from a fix common number/letter.



Common face to clock wise rotate:

Q P R
| | |
Q T S

So, the opposite face **T** is **P**.

Thus, the correct option is: **(b)**