

100 Questions

Que. 1 Which of the following Articles includes provision for Election commission?

1. Article 324
2. Article 143
3. Article 243
4. Article 233

Solution Correct Option - 1

The correct answer is **option 1 i.e., Article 324.**

- ♦ **Article 324** includes provision for **Election commission.**
- ♦ **Articles 324(1)** states that the superintendence, direction, and control of the preparation of the electoral rolls for, and the conduct of, all elections to Parliament and to the Legislature of every State and of elections to the offices of President and Vice-President held under this Constitution shall be vested in a Commission.
- ♦ **Article 324(2)** states that The Election Commission shall consist of the Chief Election Commissioner and a such number of other Election Commissioners.
- ♦ **Article 143** includes provision for the Power of President to consult Supreme Court.

Que. 2 If $\cos\theta = 3/5$, then find the value of $\tan\theta$.

1. $4/5$
2. $4/3$
3. $3/4$
4. $5/4$

Solution Given: Correct Option - 2

$$\cos\theta = 3/5$$

Concept used:

In a right-angled triangle

$$\cos\theta = \text{base/hypotenuse}$$

$$\tan\theta = \text{perpendicular/base}$$

Pythagorus theorem

$$(\text{Hypotenuse})^2 = (\text{Perpendicular})^2 + (\text{Base})^2$$

Calculation:

$$\text{Base} = 3, \text{Hypotenuse} = 5$$

By using pythagorus theorem

$$\Rightarrow (\text{Perpendicular})^2 = (5)^2 - (3)^2$$

$$\Rightarrow (\text{Perpendicular})^2 = 25 - 9$$

$$\Rightarrow (\text{Perpendicular})^2 = 16$$

$$\Rightarrow \text{Perpendicular} = 4$$

$$\tan\theta = \text{perpendicular/base}$$

$$\Rightarrow \tan\theta = 4/3$$

∴ The value of $\tan\theta$ is $\frac{4}{3}$.

Que. 3 **Direction:** Read the following information and answer the following question.

Six people P, Q, R, S, T and U are sitting in a row facing to the north. P and Q are sitting on the extreme ends of the row. T is sitting second to the right of the Q. There are two persons are sitting between U and R. P is sitting immediate right of R.

Who is sitting third to the left of S?

1. Q
2. R
3. U
4. P

Solution Correct Option - 1

Given,

Six people P, Q, R, S, T and U are sitting in a row facing to the north.

1) P and Q are sitting on the extreme ends of the row.

2) T is sitting second to the right of the Q.



3) There are two persons are sitting between U and R.

4) P is sitting immediate right of R. so the final arrangement is :



Q is sitting third to the left of S.

Hence, 'Q' is the correct answer.

Que. 4 Where is the Gobi Desert located?

1. Botswana
2. Turkmenistan
3. Mongolia
4. Antarctica

Solution Correct Option - 3

- ♦ The Gobi Desert is located in **Mongolia**.
- ♦ It is overall a **cold desert**.
- ♦ It is famous for its **dinosaur fossil treasures**.
- ♦ The area covered by Gobi Desert **1.295 million km²**.
- ♦ Botswana - Kalahari Desert
- ♦ Turkmenistan - Karakum Desert, Kyzylkum Desert
- ♦ Antarctica - Antarctica Desert

Que. 5

If the simple interest for 2 years is Rs. 500 at 10% rate of interest. Find the compound interest for the same time.

1. Rs. 525
2. Rs. 500
3. Rs. 200
4. Rs. 210

Solution Given: Correct Option - 1

Time = 2 years, Simple Interest = 500, rate = 10%

Formula used:

Simple Interest = $(\text{Principal} \times \text{Rate} \times \text{Time})/100$

Compound Interest = $\text{Principal}[(1 + \text{rate}/100)^2 - 1]$

Calculation:

Let the principal be 'P'.

Simple Interest = $(\text{Principal} \times \text{Rate} \times \text{Time})/100$

$$\Rightarrow 500 = (\text{Principal} \times 10 \times 2)/100$$

$$\Rightarrow \text{Principal} = 2500$$

Compound Interest = $\text{Principal}[(1 + \text{rate}/100)^2 - 1]$

$$\Rightarrow 2500[(1 + 10/100)^2 - 1]$$

$$\Rightarrow 525$$

∴ The compound Interest is Rs 525.

Que. 6 How many person/s sitting between T and P?

1. One
2. Three
3. Two
4. None

Solution Correct Option - 3

Given,

Six people P, Q, R, S, T and U are sitting in a row facing to the north.

1) P and Q are sitting on the extreme ends of the row.

2) T is sitting second to the right of the Q.



3) There are two persons are sitting between U and R.

4) P is sitting immediate right of R. so the final arrangement is :



Two-person are placed between T and P.

Hence, 'Two' is the correct answer.

Que. 7 'Saddle Peak' the highest peak of Andaman and Nicobar Islands is located in_____.

1. Great Nicobar
2. Middle Andaman
3. Little Andaman
4. North Andaman

Solution Correct Option - 4

- ♦ 'Saddle Peak' the highest peak of Andaman and Nicobar Islands is located in Diglipur, a town in North Andaman Island.
- ♦ It is the highest point of the archipelago in the Bay of Bengal with a length of 731 meters (2,418 feet) followed by Mount Thullier at 2,106 feet (642 meters) on Great Nicobar and Mount Harriet at 1,197 feet (365 meters) on South Andaman.
- ♦ It is surrounded by Saddle Peak National Park.

Que. 8 If $x + y = 12$, $y + z = 15$ and $x + z = 18$, then find $x + y + z = ?$

1. 18
2. 12
3. 15
4. 22.5

Solution Given: Correct Option - 4

$$x + y = 12, y + z = 15, x + z = 18$$

Calculation:

$$x + y = 12 \text{----- (1)}$$

$$y + z = 15 \text{----- (2)}$$

$$x + z = 18 \text{----- (3)}$$

By solving equations (1) and (2)

$$\Rightarrow x - z = -3 \text{----- (4)}$$

By solving equations (3) and (4)

$$\Rightarrow x = 7.5$$

Put the value of x in equation (1)

$$\Rightarrow y = 4.5$$

Put the value of y in equation (2)

$$\Rightarrow z = 10.5$$

$$x + y + z$$

$$\Rightarrow 7.5 + 4.5 + 10.5$$

$$\Rightarrow 22.5$$

∴ The value of $x + y + z$ is 22.5.

 **Shortcut Trick**

Add (1), (2) and (3)

$$\Rightarrow 2(x + y + z) = 45$$

$$\Rightarrow (x + y + z) = 45/2 = 22.5$$

∴ The value of $x + y + z$ is 22.5.

Que. 9 **Direction:** Read the following information carefully and answer the following question.

P is the mother of Q, Q is the sister of Y, Y is the husband of E, F is the son of Y, G is the brother of E and N is the father of G.

How P related to E?

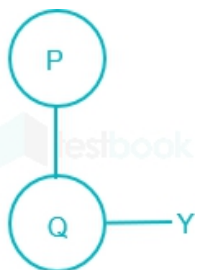
1. Sister
2. Mother- in- law
3. Brother
4. Father

Solution Correct Option - 2

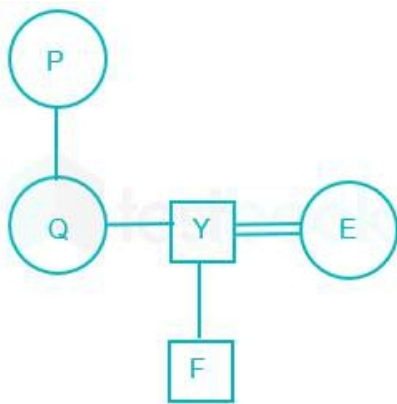
Preparing the family tree using the following symbols,

Symbol in Diagram	Meaning
○	Female
□	Male
==	Married couple
—	Siblings
	Difference of a generation

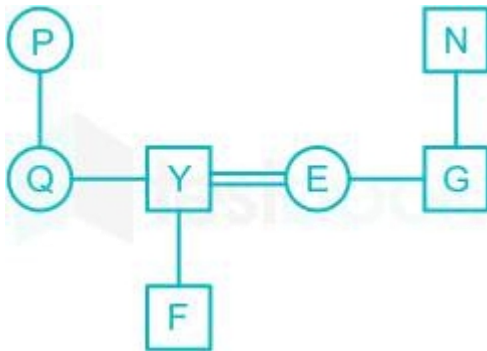
1. P is the mother of Q, Q is the sister of Y.



2. Y is the husband of E, F is the son of Y.



3. G is the brother of E and N is the father of G. So the final family diagram is:



So, P is Mother - in - law of E.

Hence, 'Mother- in - law' is the correct answer.

Que. 10 On which day is Earth Day celebrated?

1. 17 April
2. 27 March
3. 22 May
4. 22 April

Solution Correct Option - 4

The correct answer is April 22.



Key-Points

- ♦ **Earth Day is celebrated on April 22 every year** to demonstrate support for environmental protection.
- ♦ The year **2020 marks the 50th anniversary** of the annual celebrations.
- ♦ The **theme** for Earth Day 2020 is '**Climate Action**'.
- ♦ Earth Day 2020 calls for 24 hours of actions, big and small, for people and the planet.



Important Point

- ♦ The **First Earth Day was celebrated in 1970**.
- ♦ The first Earth Day is credited with launching the modern environmental movement and is now recognized as the planet's largest civic event.
- ♦ **Earth Day aims:**
 - ◊ To build the world's largest environmental movement to drive transformative change for people and the planet.

- ♦ The **movement's mission** is “to diversify, educate and activate the environmental movement worldwide.”

Que. 11 Length of rectangle is twice its breadth, if perimeter of the rectangle is 78 m, then what will be the area of the rectangle?

1. 300 m^2
2. 338 m^2
3. 169 m^2
4. 507 m^2

Solution Given: Correct Option - 2

Length of rectangle = $2 \times$ Breadth

Perimeter = 78 m

Formula used:

Perimeter = $2 \times (L + B)$

Area = $L \times B$

Where L is length and B is the breadth

Calculation:

Let the breadth of the rectangle be x m and the length of the rectangle be 2x m

Perimeter = $2 \times (2x + x) = 6x$

$\Rightarrow 78 = 6x$

$\Rightarrow x = 13 \text{ m}$

Length = $2 \times 13 = 26 \text{ m}$ and Breadth = 13 m

Area = $L \times B$

$\Rightarrow \text{Area} = 13 \times 26$

\therefore **Area of rectangle is 338 m^2**

Que. 12 How G related to Y ?

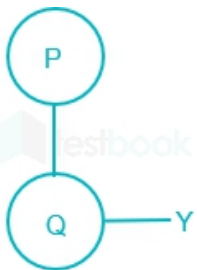
1. Sister- in - law
2. Brother- in- law
3. Father
4. Brother

Solution Correct Option - 2

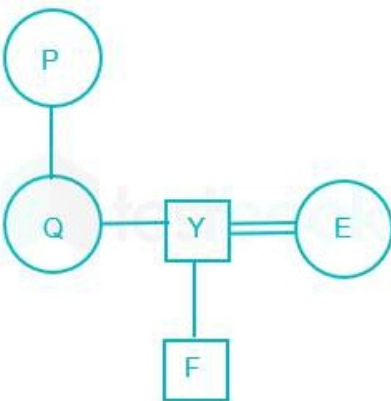
Preparing the family tree using the following symbols,

Symbol in Diagram	Meaning
○	Female
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==	Married couple
—	Siblings
	Difference of a generation

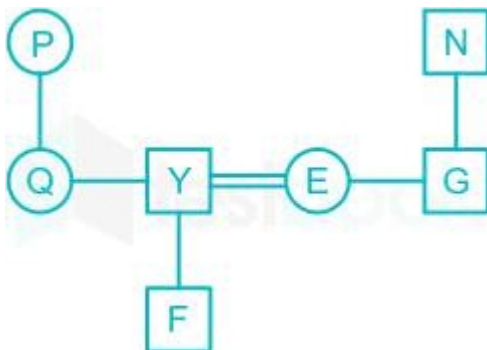
1. P is the mother of Q, Q is the sister of Y.



2. Y is the husband of E, F is the son of Y.



3. G is the brother of E and N is the father of G. So the final family diagram is:



So, G is brother - in - law of Y.

Hence, 'Brother - in -law' is the correct answer.

1. Volt
2. Ampere
3. Ohm
4. Joules

Solution Correct Option - 3 **CONCEPT:**

- ♦ **Resistance:** The property of any conductor that opposes the flow of electric current through it is called resistance.
- ♦ It is denoted by R and the SI unit is the **ohm (Ω)**.

Explanation:

As explained above, **Ohm** is the unit of **resistance**. Named after German physicist Georg Simon Ohm.

- ♦ **Volt** is the unit for electric **potential**.
- ♦ **Ampere** is the unit for electric **current** and **Joules** is the unit for **energy**.

Hence option 3 is correct among all

Que. 14 Curved surface area of a cylinder is 308 cm^2 , and height is 14 cm. What will be the volume of the cylinder?

1. 439 cm^3
2. 385 cm^3
3. 539 cm^3
4. 529 cm^3

Solution Given: Correct Option - 3

Curved surface area of cylinder = 308 cm^2

Height = 14 cm

Formula used:

CSA (Curved surface area) = $2\pi rh$

Volume = $\pi r^2 h$

Where r is radius and h is height

Calculation:

$CSA = 2\pi rh$

$308 = 2 \times (22/7) \times r \times 14$

$\Rightarrow 308 = 88r$

$\Rightarrow r = 7/2 = 3.5 \text{ cm}$

Volume = $\pi r^2 h$

$\Rightarrow \text{Volume} = (22/7) \times (3.5)^2 \times 14$

$\Rightarrow \text{Volume} = 539 \text{ cm}^3$

\therefore **Volume of the cylinder is 539 cm^3**

Que. 15 In a certain code language, "ROLL" is written as "SQOP" and "POLE" is written as "QQOI". How is "PAGE" is written in that code language

1. QCIJ
2. QJCI
3. JQCI
4. QCJI

Solution Correct Option - 4
The pattern followed here is:

R	O	L	L
+1	+2	+3	+4
S	Q	O	P

P	O	L	E
+1	+2	+3	+4
Q	Q	O	I

Similarly,

P	A	G	E
+1	+2	+3	+4
Q	C	J	I

Hence, 'QCJI' is the correct answer.

Que. 16 How many Ramsar Sites have been declared so far in India?

1. 36
2. 37
3. 42
4. 43

Solution Correct Option - 3
The correct answer is 42.



Key-Points

- India has added Tso Kar Wetland Complex in Ladakh as its 42nd Ramsar site.
- It is also a second one in the Union Territory (UT) of Ladakh.



Additional Information

- It was signed on 2nd February, 1971.
- It is one of the oldest inter-governmental accords signed by member countries.
- Objective: To preserve the ecological character of their wetlands of international importance.
- It is named after Ramsar, the Iranian city where the treaty was signed.
- Places chosen for conservation under it are given the tag 'Ramsar site'.

- ♦ The aim of the Ramsar list: To develop and maintain an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits.

Que. 17 By how much percentage 700 has to be increased to make it 840?

1. 16.67%
2. 20%
3. 8.33%
4. 120%

Solution Given: Correct Option - 2

Old number = 700

New number = 840

Formula used:

Percentage increase = $\{(New\ number - Old\ number)/(Old\ number)\} \times 100$

Calculations:

Percentage increase = $\{(840 - 700)/700\} \times 100$

$\Rightarrow (140/700) \times 100$

$\Rightarrow 20\%$

\therefore By 20%, 700 has to be increased make it 840.

Que. 18 A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

A, D, G, J, ?

1. M
2. L
3. O
4. N

Solution Correct Option - 1

Logic: Each letter is increased by 3 from its positional value to get the next term of the series.

The pattern followed here is :



Hence, 'M' is the correct answer.

Que. 19 The ancient Indian text 'Rajatarangini' is a composition of:

1. Bilhana
2. Kalhana
3. Banabhatta

4. Sandhyakar Nandi

Solution Correct Option - 2

The ancient Indian text 'Rajatarangini' is a composition of Kalhana.

- ♦ **Rajatarangini** is written in **Sanskrit verse** by the **Kashmiri Brahman Kalhana in 1148**.
- ♦ It covers the whole span of history in the **Kashmir region** from the earliest instances to the date of its composition.
- ♦ **Bilhana** was a **Kashmiri poet**.
- ♦ **Banabhatta** was a **Sanskrit poet** who is known for Harshacharita.
- ♦ **Ramacharitam**, This is a unique Sanskrit kavya written by **Sandhyakar Nandi**.

Que. 20 The MP of an item is 75% more than its CP and if 15% discount is given then what is the profit%?

1. 50%
2. 48.25%
3. 48%
4. 48.75%

Solution Given: Correct Option - 4

Discount, (D) = 15%

Formula used:

$$MP/CP = (100 + P\%)/(100 - D\%)$$

Here, P and D is profit and discount respectively

$$SP = (100 - D\%)/100 \times MP$$

Profit = Selling price (SP) – cost price (CP)

$$\text{Profit \%} = \text{Profit}/CP \times 100$$

Concept used:

Discount is given on marked price

Calculation:

Let the cost price of the item be 100x

$$MP = 100x + 75\% \text{ of } 100x = 175x$$

$$SP = (100 - D\%)/100 \times MP$$

$$\Rightarrow (100 - 15)/100 \times 175x$$

$$\Rightarrow 85/100 \times 175x$$

$$\Rightarrow 148.75x$$

$$\text{Profit} = 148.75x - 100x = 48.75x$$

$$\text{Profit \%} = 48.75x/100x \times 100 = 48.75$$

∴ The Profit percentage is 48.75%

 **Shortcut Trick**

Let CP be 100

Then, MP be 175

$$MP/CP = (100 + P\%)/(100 - 15)$$

$$\Rightarrow 175/100 = (100 + P\%)/85$$

$$\Rightarrow 148.75 = 100 + P\%$$

$$\Rightarrow P\% = 48.75\%$$

∴ The Profit percentage is 48.75%

Que. 21 Select the option that can replace the question mark (?) and complete the given series.

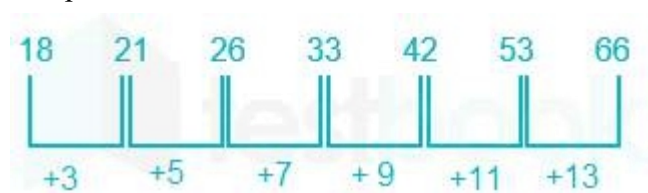
18, 21, 26, 33, 42, ?, ?

1. 65, 83
2. 52, 64
3. 53, 66
4. 65, 74

Solution Correct Option - 3

Logic: Each term is increased by odd number successively start from 3

The pattern followed here is :



Hence, '53,66' is the correct answer.

Que. 22 Which of the following recipients name is announced for 55th Jnanpith Award?

1. Nasira Sharma
2. Vasdev Mohi
3. Shri Akkitham
4. None of the above

Solution Correct Option - 3

Option 3 is correct, i.e. **Shri Akkitham.**

- ♦ **Shri Akkitham** is a Malayalam language writer whose name announced for the **55th Jnanpith Award for the year 2019.**
- ♦ Vasdev Mohi is the Sindhi writer whose name was selected for Saraswati Samman 2019.
- ♦ Nasira Sharma's name was selected for 2019 Vyas Samman.

- ♦ Some important Authors and their books:

<u>Authors Name</u>	<u>Books</u>
Salman Rushdie	<ul style="list-style-type: none"> ♦ The Enchantress of Florence ♦ Midnight's Children ♦ The Satanic Verses ♦ The Golden House ♦ Quichotte
Malala Yousafzai	<ul style="list-style-type: none"> ♦ I am Malala (In 2013) ♦ We Are Displaced ♦
Amitav Ghosh	<ul style="list-style-type: none"> ♦ The Flood of Fire ♦

	<ul style="list-style-type: none"> ♦ The Great Derangement ♦ Gun Island ♦ River of Smoke
Pawan K. Varma (He is a diplomat)	<ul style="list-style-type: none"> ♦ The New Indian Middle Class ♦ Adi Shankaracharya: Hinduism's Greatest Thinker ♦ Being Indian ♦ The Ramcharitmanas: Select Stanzas ♦ Ghalib: The Man ♦ Krishna: The Playful Divine

Que. 23 Three students A, B, and C gets 215, 105, and 202 marks in an exam respectively. Find the average marks of A, B, and C.

1. 134
2. 174
3. 184
4. 164

Solution Given: Correct Option - 2

Marks of A = 215

Marks of B = 105

Marks of C = 202

Calculation:

$$\Rightarrow (215 + 105 + 202)/3$$

$$\Rightarrow 522/3$$

$$\Rightarrow 174$$

∴ The required result will be 174.

Que. 24 Eight persons A, B, C, D, E, F, G and H are sitting around an octagonal table and faces towards the centre. A is sitting third to the right of G and second to the left of C, B is diagonally opposite to A and sitting third to the right of E. F and D is an immediate neighbour of each other. D is sitting diagonally opposite to C. What is the position of H with respect to A?

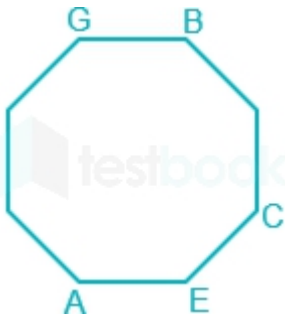
1. Third to the right
2. Diagonally opposite
3. Second to the left
4. Immediate right

Solution Correct Option - 1

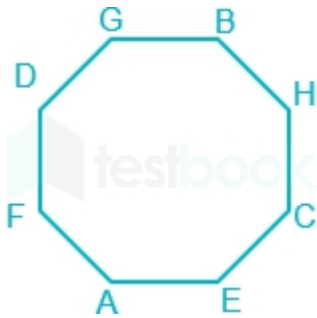
Given,

Eight persons A, B, C, D, E, F, G and H are sitting around an octagonal table and faces towards the centre.

1) A is sitting third to the right of G and second to the left of C, B is diagonally opposite to A and sitting third to the right of E.



2) F and D is an immediate neighbour of each other. D is sitting diagonally opposite to C.
So, the final arrangement is :



H is third to the right of A.

Hence, 'A' is the correct answer.

Que. 25 Weight of an object on the moon is _____ the weight of the object on earth.

1. equal to
2. 1/6th
3. 1/2
4. 1/5th

Solution Correct Option - 2

- The **weight of an object** depends on the value of g , i.e. **acceleration due to gravity**.
- Acceleration due to **gravity of earth** is **6 times the acceleration due to gravity of the moon**.
- **The weight of an object** on the moon is equal to **1/6th of its weight on the Earth**.
- $\text{Weight} = (\text{mass}) \times (\text{acceleration due to gravity of planet})$
- **At the surface of the earth**
 - $\text{Weight} = mg$
- **At the surface of Moon**
 - $\text{Weight} = mg / 6$
- $\text{Acceleration due to Moon's gravity} = (\text{Acceleration due to Earth's gravity})/6$
- $\text{Weight on moon} = 1/6 \times \text{Weight on earth}$

Extra facts:

The mass of the moon is 1/100 times the mass of Earth and the radius of the moon is $\frac{1}{4}$ times the radius of the Earth

Que. 26 The side of the square is increased by 20% then what is the % change in its area?

1. 54%
2. 34%
3. 52%
4. 44%

Solution Correct Option - 4 Given:

Increase in side = 20%

Formula used:

Area of the square = side²

Concept used:

All the sides of the square is equal

Calculation:

Let the side of the square be 1

Area of the square = 1^2

After 20% increase,

Side of the square = $1 + 20\% \text{ of } 1 = 1.2$

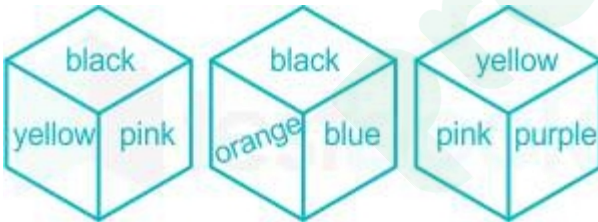
New area of the square = $(1.2)^2 = 1.44$

Increase in the area of the square = $1.44 - 1 = 0.44$

Percentage increase in the area = $(0.44 / 1) \times 100 = 44\%$

∴ The % increase in the area is 44%

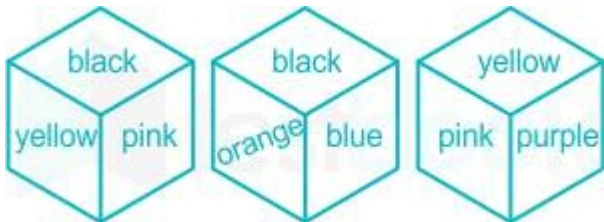
Que. 27 Three positions of a dice are given below. What will come opposite to the face containing 'Black'?



1. Yellow
2. Pink
3. Blue
4. Purple

Solution Correct Option - 4

The given position of dice are:



It is clear that adjacent phase of black is yellow and pink from the first position of dice.

And also from second position of dice it is clear that black phase is also adjacent to orange and blue.

So, from third position of the dice it is clear that the purple is opposite to the black.

Hence, 'Purple' is the correct answer.

Que. 28 Koodankulam is famous for:

1. Nuclear power plant
2. Thermal power plant
3. Biosphere reserve
4. Major port in tamil Nadu

Solution Correct Option - 1

The correct answer is Nuclear power plant.



Important Point

- ♦ **Nuclear power plants are a type of power plant that uses the process of nuclear fission to generate electricity.**
 - They do this by using a nuclear reactor.
- ♦ A nuclear power plant is a facility that **converts atomic energy into usable power.**
 - Nuclear power plant heats water to produce steam.
 - The steam is used to spin large turbines that generate electricity.
 - Nuclear power plants use the heat produced during nuclear fission to heat water. In nuclear fission, atoms are split apart to form smaller atoms, releasing energy.



Key-Points

- ♦ **Kudankulam Nuclear Power Plant is the largest nuclear power station in India, situated in Koodankulam in the Tirunelveli district of Tamil Nadu.**
- ♦ Kudankulam Nuclear Power Plant is being developed by the Nuclear Power Corporation of India (NPCIL) in collaboration with **Atomstroyexport, the Russian state company.**
- ♦ The current installed capacity is 2GW.

Que. 29 80% of CP = 60% of SP. Find the profit or loss %

1. 33.33% profit
2. 25% loss
3. 30% profit
4. 10% loss

Solution Given: Correct Option - 1

80% of CP = 60% of SP

Concept used:

Profit and loss

Calculation:

$$\Rightarrow (80/100) \times CP = (60/100) \times SP$$

$$\Rightarrow 80 \times CP = 60 \times SP$$

$$\Rightarrow CP : SP = 60 : 80$$

$$\Rightarrow CP : SP = 3 : 4$$

$$\text{Profit} = \text{SP} - \text{CP}$$

$$\text{Profit} = 4 - 3$$

$$\text{Profit} = 1 \text{ unit.}$$

$$\text{Profit \%} = (1/3) \times 100$$

$$\Rightarrow 33.33\%$$

∴ The profit% is 33.33%

Que. 30 Consider the given argument and decide which of the given assumptions is (are) implicit.

Argument:

Y advised X that if he/she wants to study Management, he/she should join IIM

Assumptions:

1. IIM provides good Management education
2. X listens to the advice given by Y.
 1. Neither 1 nor 2 is implicit.
 2. Only assumption 2 is implicit.
 3. Only assumption 1 is implicit.
 4. Both 1 and 2 are implicit.

Solution Correct Option - 4

It can be assumed that IIM does provide good management studies that is why Y advised X. Hence assumption 1 supports the argument.

If Y is advising X therefore, it can be assumed that X would be listening to Y. So, assumption 2 supports the argument.

Note:

When you are advising someone, you can assume that the person is willing to listen to your advise. That is, the possibility of such an assumption does exist.

Thus, in this question, the second assumption is implicit. When Y is advising X, he might be assuming that X will follow his advice.

Que. 31 Which state is not a part of the 'Seven Sisters' of North East?

1. Meghalaya
2. Sikkim
3. Arunachal Pradesh
4. Tripura

Solution Correct Option - 2

The correct answer is **Sikkim**.

- ♦ The seven sisters states of India from north to south are **Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Tripura, and Mizoram.**
- ♦ **Sikkim** belongs to the group of northeastern states but doesn't belong to Seven Sisters State.
 - **Sikkim also called the only brother of seven sisters states.**
- ♦ The total area of seven sisters state is 2,55,511 sq km.
- ♦ It is 7% of the total area of India's area.
- ♦ The total Population of Seven sisters state as per the 2011 census is 44.98 million which is roughly 3.7% of India's total population.
- ♦ The term "**Land of seven sisters**" was coined by **Jyoti Prasad Saika in 1972.**

♦ **Important Facts about Seven Sisters:**

- ◊ Largest Area:- Arunachal Pradesh
- ◊ Smallest Area:- Tripura
- ◊ Highest population:- Assam
- ◊ Lowest Population:- Mizoram
- ◊ Highest population density:- Assam
- ◊ Lowest Population density:- Arunachal Pradesh
- ◊ Highest literacy:- Mizoram
- ◊ Lowest Literacy:- Arunachal Pradesh
- ◊ World's biggest river island:- Majuli located in Assam
- ◊ India's longest bridge:- Bhupen Hazarika Bridge built on the Lohit river in Assam.

Que. 32 A student got 20% marks and failed by 72 marks. If he scores 40% marks then he gets 8 marks more than the passing marks. Find the passing marks.

1. 150
2. 152
3. 142
4. 160

Solution Given: Correct Option - 2

A student got 20% marks and failed by 72 marks. If he scores 40% marks then he gets 8 marks more than the passing marks.

Concept used:

Percentage.

Calculation:

Let total marks be $100x$

A student scores 20% marks and failed by 72 marks means if he gets 72 marks he would pass

$$\Rightarrow 20x + 72$$

A student scores 40% marks and gets 8 marks more than passing marks.

$$\Rightarrow 40x - 8$$

Passing marks

$$\Rightarrow 20x + 72 = 40x - 8$$

$$\Rightarrow 20x = 80$$

$$\Rightarrow x = 4$$

$$\text{Passing marks} = 20x + 72$$

$$= 80 + 72$$

$$= 152$$

∴ **The passing marks is 152**

Que. 33 Which assumptions are implied from the below statement?

Statement: Tanmay is a national level chess player.

Assumptions:

I: Tanmay has played with Viswanathan Anand.

II: Tanmay has defeated many players in chess.

1. Only I is implicit.
2. Only II is implicit.
3. Both I and II are implicit.
4. Neither I nor II is implicit.

Solution Correct Option - 2

From the information above we cannot assume the players with which Tanmay has played chess.

Therefore, assumption I is not implicit.

However, the information available in the statement above is sufficient to assume that Tanmay might have defeated many players in chess as he qualified for the nationals.

Therefore, assumption II is implicit.

Hence, Only II is implicit.

Que. 34 In which of the following Himalayan ranges is the Banihal Pass situated?

1. Great Himalayas
2. Pir Panjal
3. Ladakh
4. Zaskar

Solution Correct Option - 2

The Banihal Pass is situated in **Pir Panjal Himalayan Range**.

- ♦ **The Pir Panjal Range** is a range of **Inner Himalayan mountains** stretching from east-southeast (ESE) to west-northwest (WNW) through **Himachal Pradesh**, Indian state, and **Jammu and Kashmir**, Indian Union Territory.
- ♦ Pir Panjal is the greatest range of the **Lesser Himalayas**.
- ♦ **The Pir Panjal Railway Tunnel**, a rail tunnel of 11,215 meters passes through Jammu and Kashmir's Pir Panjal Range.
- ♦ The tunnel was opened to regular service on 26 June 2013.
- ♦ It is the **longest railway tunnel in India and the fourth-longest tunnel in Asia**.

Que. 35 Find the smallest number divisible by 15, 28 and 25 which gives remainder as 8 in each case.

1. 2100
2. 2092
3. 2108
4. 2180

Solution Given: Correct Option - 3

Numbers = 15, 28 and 25

Remainder = 8

Calculations:

LCM of 15, 28 and 25 = 2100

Number which will give 8 as remainder = $2100 + 8$

⇒ 2108

∴ The smallest number divisible by 15, 28 and 25 which gives remainder as 8 in each case is 2108.

Que. 36 In the question below is given a statement followed by two courses of action numbered I and II. You have to assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the suggested course of action logically follow(s) for pursuing.

Statement: Bullying can impact a student on physical, mental and emotional levels.

Courses of Action:

I: The child should ignore the instances of bullying.

II: The schools should set clear and enforceable rules against the practice of bullying.

1. Only I follows
2. Only II follows
3. Neither I nor II follows
4. Both I and II follow

Solution Correct Option - 2

From the statement above, we understand the effects of bullying on a student. But the course of action mentioned in I is not viable as it will continue the practice of bullying.

Therefore, I does not follow.

On the other hand, setting clear and enforceable rules against the practice of bullying will be a feasible course of action as it will reduce the number of bullying cases.

Therefore, II follows.

Hence, Only II follows.

Que. 37 The President of India has the power of pardoning under_____.

1. Article 72
2. Article 73
3. Article 74
4. Article 76

Solution Correct Option - 1

The correct answer is **Article 72**.

- ♦ **Article 72** of the Indian Constitution gives the President the power of pardoning.



Key-Points

- ♦ **Pardon:** means completely absolving the person of the crime and letting him go free.
- ♦ Under **Article 72**, the President of India can grant a pardon or reduce the sentence of a **convicted person**, particularly in cases involving **capital punishment**.
- ♦ There are **five different types** of **pardoning** which are mandated by law: **Pardon, Commutation, Reprieve, Respite and Remission**.



Additional Information

- ♦ **Article 73:** The extent of the executive power of the Union.

- ♦ **Article 74:** This article provides for a **Council of Ministers** which shall aid the **President** in the exercise of **his functions**.
- ♦ **Article 76:** Article 76 deals with the **Attorney General of India**.
- ♦ **Article 77:** Conduct of business of the Government of India.

Que. 38 There are three numbers a, b and c; such that: $a : b : c = 2 : 3 : 1$. The sum of a, b and c is 120. Find b.

1. 20
2. 60
3. 30
4. 45

Solution Correct Option - 2

∴ The given relation between a, b and c is

$$a : b : c = 2 : 3 : 1$$

Let the numbers be $a = 2x$, $b = 3x$, and $c = x$

Now, the sum of the numbers is 120

$$\text{So, } a + b + c = 120$$

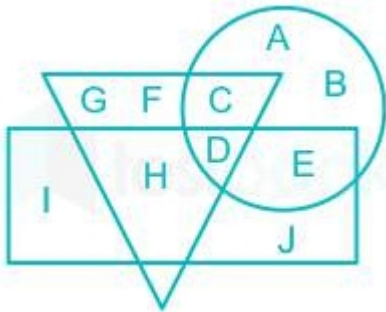
$$\Rightarrow 2x + 3x + x = 120$$

$$\Rightarrow 6x = 120 \text{ So,}$$

$$b = 3x = 60$$

∴ **The required number b is 60**

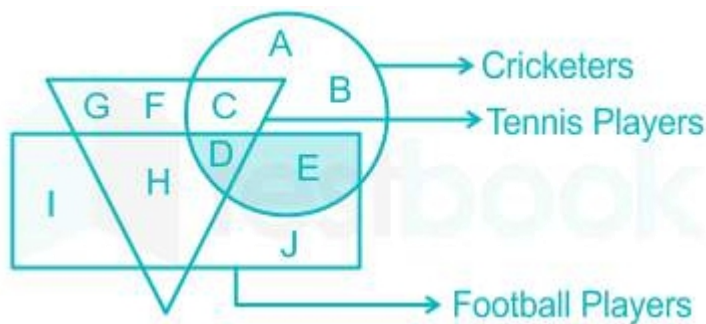
Que. 39 In the given figure Triangle represents Tennis Players, Rectangle represents Football Players, Circle represents Cricket Players. Which of the following set of letters represent those who play both cricket as well as football?



1. DE
2. EJ
3. CD
4. BE

Solution Correct Option - 1

The set of letters representing both who plays cricket and football is represented in the intersection area of Cricketers and Football players.



Hence, DE is the correct answer.

Que. 40 Who was the founder of Prathana Samaj?

1. Dr. Atmaram Pandurang
2. Dayanand Saraswati
3. Keshab Chandra sen
4. Swami Vivekanand

Solution Correct Option - 1

Dr. Atmaram Pandurang was the founder of **Prathana Samaj**.

- ♦ Dr. Atmaram Pandurang has founded Prathana Samaj in the year 1867 in western India for religious and social reforms.
- ♦ The main aim of the Prathana Samaj was to make people believe in one God and worship only one God.
- ♦ The emphasis was on monotheism but on the whole, the samaj was more concerned with social reform than with the religion.
- ♦ The Prathana Samaj was very attached to the Bhakti cult of Maharashtra.

Other reformers:-

Reformers	Society/Samaj
Dayanand Saraswati	Arya Samaj
Keshab Chandra sen	Bharatvarshiya Brahmo Samaj/AdiSamaj
Swami Vivekananda	Ram Krishna Mission

Que. 41 Difference between compound interest and simple interest is Rs. 3375 in 2 years and the rate of interest is 15%. Find the principal amount.

1. Rs. 100,000
2. Rs. 150,000
3. Rs. 160,000
4. Rs. 200,000

Solution Given: Correct Option - 2

Rate = 15 %

Difference between CI and SI in 2 years= Rs. 3375

Time = 2 years

Concept:

$$CI - SI = P \times (R/100)^2$$

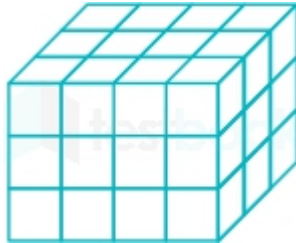
Calculation:

$$\Rightarrow 3375 = P \times (15/100)^2$$

$$\Rightarrow P = 150000$$

∴ The required result will be 150,000

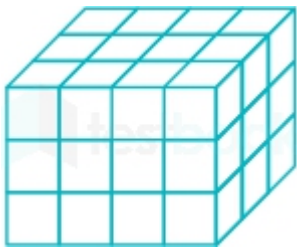
Que. 42 Count the number of blocks in the following figure.



1. 32
2. 34
3. 36
4. 38

Solution Correct Option - 3

There are three layers as we can see in the following figure:



In the given cube, there are 3 layers,

As we can see, in the first layer, there are 4 X 3 blocks

Hence, in the front layer, there are 12 blocks.

Similarly, in the middle layer there are 12 blocks.

And in back/last layer there are 12 blocks.

So total number of blocks will be = 12 + 12 + 12 = 36 cubes

As it is symmetrical figure the blocks are after 1st layer has to be counted.

Hence, correct answer will be 36

Que. 43 On which on the following dates was ISRO found?

1. 12th August, 1954
2. 15th August, 1969
3. 13th August, 1992
4. 11th August, 1990

Solution Correct Option - 2

The correct answer is **15th August, 1969.**

Key-Points

- ♦ Indian Space Research Organisation was formed on **15th August 1969**.
- ♦ It superseded the erstwhile INCOSPAR. **Vikram Sarabhai**, having identified the role and importance of space technology in a Nation's development, provided ISRO the necessary direction to function as an agent of development.
- ♦ ISRO then embarked on its mission to provide the Nation space-based services and to develop the technologies to achieve the same independently.
- ♦ ISRO develops and delivers application-specific satellite products and tools to the Nation: broadcasts, communications, weather forecasts, disaster management tools, Geographic Information Systems, cartography, navigation, telemedicine, dedicated distance education satellites being some of them.

Que. 44 A fruit seller gave two successive discounts of 10% and 20% to the buyer. Find the net discount given to the buyer.

1. 30%
2. 32%
3. 28%
4. 25%

Solution Given- Correct Option - 3

Two successive discounts = 10% and 20%

Concept Used -

Discounted Value = Actual Value(1 - Discount%)

Calculation-

Let the MP be 100

After 1st discount of 10% price becomes 100 - 10

⇒ 90

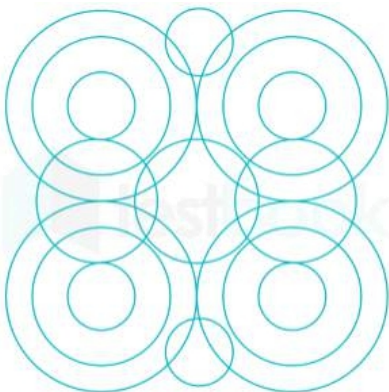
After 2nd discount of 20% price becomes 90 - 18

⇒ 72

∴ The net discount offered to the buyer is 100 - 72

⇒ 28%

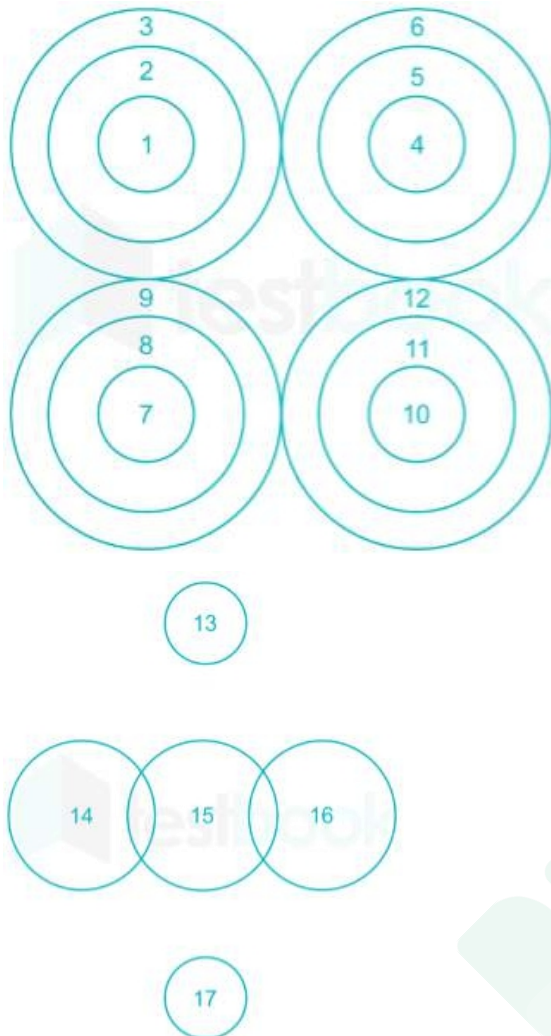
Que. 45 Find out the number of circles in the given figure.



1. 14

2. 16
3. 17
4. 18

Solution Correct Option - 3



Hence total 17 circles are there.

Que. 46 At which of the following places is the International Court of Justice situated?

1. Rome
2. Vienna
3. The Hague
4. Geneva

Solution Correct Option - 3

- The International Court of Justice is the UN's principal judicial organ which was established in June 1945.
- The seat of the court is situated at the Peace Palace in The Hague, Netherlands.

President	Abdulqawi Ahmed Yusuf	Somalia
Vice- President	Xue Hanqin	China

Judge	Dalveer Bhandari	India
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Que. 47 Find the value of $5\sin 15^\circ \sec 75^\circ + 2\tan 45^\circ + 3\sec^2 30^\circ$.

1. 9
2. 10
3. 11
4. 12

Solution Given: Correct Option - 3

$$5\sin 15^\circ \sec 75^\circ + 2\tan 45^\circ + 3\sec^2 30^\circ$$

Calculation:

$$5\sin 15^\circ \sec 75^\circ + 2\tan 45^\circ + 3\sec^2 30^\circ$$

$$\Rightarrow 5\sin 15^\circ \sec (90^\circ - 15^\circ) + 2\tan 45^\circ + 3\sec^2 30^\circ$$

$$\Rightarrow 5\sin 15^\circ \operatorname{cosec} 15^\circ + 2\tan 45^\circ + 3\sec^2 30^\circ$$

$$\Rightarrow 5\sin 15^\circ (1/\sin 15^\circ) + 2 \times 1 + 3 (2/\sqrt{3})^2$$

$$\Rightarrow 5 + 2 + 4$$

$$\Rightarrow 11$$

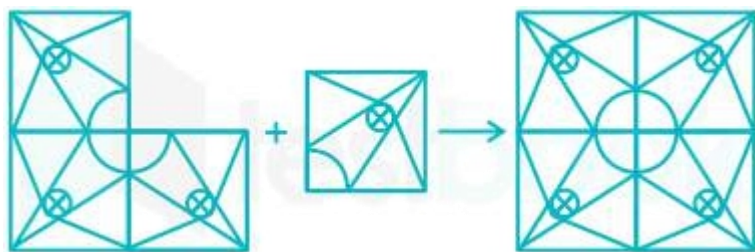
\therefore The value of $5\sin 15^\circ \sec 75^\circ + 2\tan 45^\circ + 3\sec^2 30^\circ$ is 11.

Que. 48 Which answer figure will complete the pattern in the following question figure?



- 1.
- 2.
- 3.
- 4.

Solution Correct Option - 1



Hence, the figure in option 1) will complete the pattern.

Que. 49 In which year the Environment Protection Act was passed?

1. 1982
2. 1986
3. 1992
4. 1996

Solution Correct Option - 2

The environment protection act was passed by the parliament of India in **1986**.

- ♦ Under Article **253** of the constitution.
- ♦ It came into force on 19 November 1986.
- ♦ The **purpose** of this act was to implement the decisions of the **UN conference on the Human Environment**.

Other important acts by the Indian government for Environmental protection:

- ♦ Wildlife Protection Act 1972.
- ♦ Prevention of Cruelty to Animals Act 1960.
- ♦ Biological diversity Act 2002.
- ♦ Recycled Plastics, Plastics manufacturing and usage Rules, 1999
- ♦ Construction and Demolition waste Management Rules, 2016.

Que. 50 What will be the HCF of 56, 216, 28 ?

1. 28
2. 2
3. 8
4. 4

Solution Given- Correct Option - 4

Given numbers = 56, 216, 28

Concept Used-

The greatest number which divides a given set of numbers is called the HCF of the that given set of numbers.

Calculation-

$$56 = 7 \times 2^3$$

$$216 = 2^3 \times 3^3$$

$$28 = 2^2 \times 7$$

$$\therefore \text{HCF of } 56, 216, 28 = 2^2 = 4.$$

Que. 51 If '+' stands for 'division'; '×' stands for 'addition'; '-' stands for 'multiplication'; '÷' stands for 'subtraction', which of the following equations is correct?

1. $5 - 3 + 2 \times 4 \div 8 = 2$
2. $5 \times 3 + 2 - 4 \times 8 = 19$
3. $5 \div 3 \times 2 - 4 + 8 = 8$
4. $5 + 3 \times 2 \div 4 - 8 = 4$

Solution Correct Option - 2

Changing operators as given instruction:-

Symbols	Meaning
+	÷
×	+
-	×
÷	-

Let's check each option,

1) $5 - 3 + 2 \times 4 \div 8 = 2$

changing signs as per the table, equation will become:-

$$5 \times 3 \div 2 + 4 - 8 = 2$$

$$= 5 \times 1.5 + 4 - 8$$

$$= 7.5 + 4 - 8$$

$$= 11.5 - 8$$

$$= 3.5 \neq 2$$

2) $5 \times 3 + 2 - 4 \times 8 = 19$

changing signs as per the table, equation will become:-

$$5 + 3 \div 2 \times 4 + 8 = 19$$

$$= 5 + 1.5 \times 4 + 8$$

$$= 5 + 6 + 8$$

$$= 19 = 19$$

3) $5 \div 3 \times 2 - 4 + 8 = 8$

changing signs as per the table, equation will become:-

$$5 - 3 + 2 \times 4 \div 8 = 8$$

$$= 5 - 3 + 2 \times 0.5$$

$$= 5 - 3 + 1$$

$$= 6 - 3$$

$$= 3 \neq 8$$

4) $5 + 3 \times 2 \div 4 - 8 = 4$

changing signs as per the table, equation will become:-

$$5 \div 3 + 2 - 4 \times 8 = 4$$

$$= 1.67 + 2 - 32$$

$$= 3.67 - 32$$

$$= -28.33 \neq 4$$

Hence, option 2 is giving us the correct equation after changing signs.

Que. 52 Which among the following is a scheme that is aimed at the development of girl child in the country?

1. Vidya Lakshmi Scheme
2. Pradhan Mantri Shishu Vikas Yojana
3. Pradhan Mantri Sukanya Samriddhi Yojana
4. Pradhan Mantri Valika Suraksha Yojana

Solution Correct Option - 3

- Pradhan Mantri Sukanya Samriddhi Scheme is aimed at the security of girl child in the country.
- It was launched on 22 January 2015.
- The parents of the girl child can open the account before she attains the age of 10 years and deposit money till the child becomes 14 years old.
- After the age of 21 years, the amount can be withdrawn by the girl child.
- The minimum amount required to be deposited in this account every year is Rs 250 whereas the maximum investment in a year can be up to Rs 1.5 lakhs.

Que. 53 Find the number of zeroes in $10 \times 20 \times 30 \times \dots \times 1000$.

1. 100
2. 124
3. 120
4. 150

Solution Given: Correct Option - 2

$$10 \times 20 \times 30 \times \dots \times 1000$$

Concept used:

Take 10 as common from each term.

Number of trailing zeroes in $n!$ = Divide n by 5 and add all the quotients till it reaches less than 5.

Calculations:

$$10 \times 20 \times 30 \times \dots \times 1000$$

$$\Rightarrow (10 \times 1) \times (10 \times 2) \times (10 \times 3) \times (10 \times 4) \dots \times (10 \times 100)$$

$$\Rightarrow 10^{100} \times (1 \times 2 \times 3 \times \dots \times 100)$$

$$\Rightarrow 10^{100} \times (100!)$$

$$\text{Number of zeroes} = 100 + \{(100)/5 + (20)/5\}$$

$$\Rightarrow 100 + 20 + 4$$

$$\Rightarrow 124$$

\therefore The number of trailing zeroes in $10 \times 20 \times 30 \times \dots \times 1000$ is 124.

Que. 54 Which of the following interchanges of signs would make the given equation correct?

$$5 + 6 \div 3 - 12 \times 2 = 17$$

1. \div and \times
2. $+$ and \times

3. + and \div

4. + and -

Solution Correct Option - 1 Given equation: $5 + 6 \div 3 - 12 \times 2 = 17$ Let's check each option,

1) Interchanging \div and \times

Equation will become $5 + 6 \times 3 - 12 \div 2$

$$= 5 + 6 \times 3 - 6$$

$$= 5 + 18 - 6$$

$$= 23 - 6$$

$$= 17 = 17$$

2) Interchanging + and \times

Equation will become $5 \times 6 \div 3 - 12 + 2$

$$= 5 \times 2 - 12 + 2$$

$$= 10 - 12 + 2$$

$$= 12 - 12$$

$$= 0 \neq 17$$

3) Interchanging + and \div

Equation will become $5 \div 6 + 3 - 12 \times 2$

$$= 0.833 + 3 - 12 \times 2$$

$$= 0.833 + 3 - 24$$

$$= 3.833 - 24$$

$$= -20.167 \neq 17$$

4) Interchanging + and -

Equation will become $5 - 6 \div 3 + 12 \times 2$

$$= 5 - 2 + 12 \times 2$$

$$= 5 - 2 + 24$$

$$= 29 - 2$$

$$= 27 \neq 17$$

Hence, option 1 is the correct answer.

Que. 55 In which among the following areas the Sabrimala Temple is located?

1. Periyar Tiger Reserve
2. Kanha National Park
3. Anamalai Tiger reserve
4. None of the Above

Solution Correct Option - 1

- ♦ **Sabrimala Temple is located inside the Peiyar Tiger Reserve.**
- ♦ **It is located in Pathanamthitta Distt. of Kerala.**
- ♦ The temple is dedicated to Lord Ayyappan who is a celibate.
- ♦ Lord Ayyappan is also known as Darma Sastha.
- ♦ It is believed that the lord Ayyappan is the Son of Lord Shiva and Mohini (The Female Incarnation of Lord Vishnu).
- ♦ Kanha National park is located in Madhya Pradesh.
- ♦ Anamalai Tiger Reserve is located in Tamil nadu

Que. 56 Bhushan buys an article at Rs. 1500 and sell it to Amit at Rs. 2000, find the profit percentage of Bhushan?

1. 33.33%
2. 25%
3. 50%
4. 40%

Solution Correct Option - 1 Given:

CP = Rs. 1500

SP = Rs. 2000

Concept:

Profit percentatge = $[(SP - CP)/CP] \times 100$

Calculation:

Profit% = $(SP - CP)/CP \times 100$

= $[(2000 - 1500)/1500] \times 100$

= $(500/1500) \times 100$

= 33.33%

∴ The profit percentage of Bhushan is 33.33%.

Que. 57 In a certain code language, “TAP” is written as “39” and “LAP” is written as “31”. How is “MAT” written in that code language?

1. 36
2. 38
3. 42
4. 30

Solution Correct Option - 1

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

$$\begin{array}{ccc}
 T & A & P \\
 \downarrow & \downarrow & \downarrow \\
 20 & +1 & +16+2=39
 \end{array}$$

$$\begin{array}{ccc}
 L & A & P \\
 \downarrow & \downarrow & \downarrow \\
 12 & +1 & +16+2=31
 \end{array}$$

Similarly,

$$13 + 1 + 20 + 2 = 36$$

Hence, '36' is the correct answer.

Que. 58 Who among the following was the first Tirthankara of Jainism?

1. Rishabhanatha
2. Mahavira
3. Bahubali
4. Mallinatha

Solution Correct Option - 1

- ♦ **Lord Rishabhanatha, also known as Rishabdeva was the first Tirthankar of Jainism.**
- ♦ Bahubali was the son of Lord Rishabdeva.
- ♦ Mahavira was the 24th Tirthankara of Jainism.
- ♦ Mallinatha is believed to be a woman of shwetamber sect while Digambara sect believes that all the Tirthankaras were males.

Que. 59 The adjacent angles of the rhombus are in the ratio of 4 : 5. Find the difference between the larger and smaller angle.

1. 10°
2. 20°
3. 15°
4. 25°

Solution Given : Correct Option - 2

The ratio of the adjacent angle of the rhombus = 4 : 5

Concept used :

The sum of the adjacent angles of the rhombus is 180°

Calculation :

Let the smaller and larger angle be $4x$ and $5x$ respectively.

$$\Rightarrow 4x + 5x = 180^\circ$$

$$\Rightarrow 9x = 180^\circ$$

$$\Rightarrow x = 20^\circ$$

Difference between the larger and smaller angle = $5x - 4x$

$$= x = 20^\circ$$

\therefore The difference between the larger and smaller angle is 20° .

Que. 60 In a row Sindhu is 15^{th} from front end and Madhu is 10^{th} from back end. If they interchange their positions there are 5 persons between Sindhu and Madhu. Total number of persons in the row?

1. 28
2. 29
3. 30
4. 31

Solution Correct Option - 3

Sindhu is 15th from front end and Madhu is 10th from back end.

On combining the statements, we get,

(Front end is taken on the top and back end is taken on the bottom)



Total number of persons in the queue are $14 + 5 + 9 + 2 = 30$

Therefore, 30 is the correct answer.

Que. 61 Which of the following is the current Chief Minister of Himachal Pradesh?

1. Jai Ram Thakur
2. Raj Singh Tomar
3. Sanchit Kumar Manoranjan
4. Jeetaram Majhi

Solution Correct Option - 1

The correct answer is **Jai Ram Thakur**.

- Jai Ram Thakur has been sworn in as the 14th Chief Minister of Himachal Pradesh along with 11 other ministers at a ceremony in Shimla.

Name of State	Himachal Pradesh
Chief Minister of State	Jai Ram Thakur
Governor of State	Bandaru Dattatreya
Number of seats in Lok Sabha	4
Number of Seats in Rajya Sabha	3
Number of seats in Legislative Assembly	68
Capital of State	Shimla
Area	55,673 sq km
Population	68.65 lakh (census 2011)
Additional Information	Himachal derives its name from the Himalayas literally means "land of snowy mountains".

Que. 62 The sum of two numbers is 60 whereas HCF and LCM of the numbers are 12 and 72 respectively. Find the sum of reciprocal of these numbers.

1. $5/6$
2. $5/72$
3. $6/5$
4. $72/5$

Solution Given: Correct Option - 2

Sum of two numbers = 60

HCF of the given numbers = 12

LCM of the given numbers = 72

Calculations:

Let the two numbers be $12x$ and $12y$.

According to questions,

$$12x + 12y = 60$$

$$\Rightarrow x + y = 5 \text{----- (1)}$$

$$\text{LCM} = 12 \cdot xy = 72$$

$$\Rightarrow xy = 6 \text{----- (2)}$$

From (1) and (2),

$$\Rightarrow x = 3, y = 2$$

$$(1/12x) + (1/12y)$$

$$\Rightarrow (1/36) + (1/24)$$

$$\Rightarrow 5/72$$

\therefore The sum of reciprocal of the given numbers is $5/72$.

Que. 63 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

1. Some bananas are mangoes.
2. Some mangoes are cats.

Conclusions:

- I. All cats are bananas.
 - II. Some cats are mangoes.
1. Neither conclusion I nor II follows.
 2. Both conclusions I and II follow.
 3. Only conclusion II follows.
 4. Only conclusion I follows.

Solution Correct Option - 3

The least possible Venn diagram for the given statement is :



I. All cats are bananas → False (It is possible but not definite)

II. Some cats are mangoes → True (Some mangoes are cats)

Hence, only conclusion II follows.

Que. 64 BCCI has announced the schedule for IPL 2020 to be held in UAE. The season kickstarted in which of the following cities?

1. Abu Dhabi
2. Dubai
3. Sharjah
4. Al Ain

Solution Correct Option - 1

The correct answer is **Abu Dhabi**.

- BCCI has announced the schedule for **IPL 2020** to be held in **UAE**.
- The season will kickstart on 19 September 2020 in **Abu Dhabi** with a clash between defending champions **Mumbai Indians and Chennai Super Kings**.
- Dubai will host the second game where **Delhi Capitals** will face **Kings XI Punjab** on September 20.
- Dubai will host 24 games, 20 matches will be played in Abu Dhabi while the remaining 12 in Sharjah.

Que. 65 Find "?" in the given expression

$$12\% \text{ of } 1200 + ? = 18\% \text{ of } 5400$$

1. 654
2. 676
3. 828
4. 538

Solution Correct Option - 3

B	Brackets in order {}, {}, []	ब्रैकेट {}, {}, [] क्रम में
O	of	का
D	Division (÷)	विभाजन (÷)
M	Multiplication (×)	गुणा (×)
A	Addition (+)	जोड़ (+)
S	Subtraction (−)	घटाव (−)

Calculation:

Our given equation is $12\% \text{ of } 1200 + ? = 18\% \text{ of } 5400$

$$\Rightarrow 12/100 \times 1200 + ? = 18/100 \times 5400$$

$$\Rightarrow 12 \times 12 + ? = 18 \times 54$$

$$\Rightarrow 144 + ? = 972$$

$$\Rightarrow ? = 972 - 144$$

$$\Rightarrow ? = 828$$

∴ The value of the given expression is 828.

Que. 66 Select the related word from the given alternatives.

Brain : Neurology :: ? : Cardiology

1. Liver
2. Ears
3. Heart
4. Eyes

Solution Correct Option - 3

The above relationship is about the part : term related to it.

Neurology is related to brain.

Similarly,

Cardiology is related with Heart.

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

Que. 67 How many languages have been mentioned in the Eighth Schedule of the Indian Constitution?

1. 28
2. 24
3. 18
4. 22

Solution Correct Option - 4

The correct answer is **22**.

- **22 languages** have been mentioned in the Eighth Schedule of the Indian Constitution.
- These languages are- Assamese, Bengali, Bodo, Dogri, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Maithili, Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Santali, Sindhi, Tamil, Telugu, and Urdu.
- Please note that there are 12 Schedules in the Indian Constitution. **The constitutional provisions on languages are in articles 344(1) and 351 of the Indian Constitution.**

Schedules in Indian Constitution

Schedule	Feature
First	Names of states and UTs
Second	Provisions of allowances, privileges, emoluments of President of India, Governors, Speakers, Supreme Court and High Court judges, etc.
Third	Oath and affirmation for Union Ministers of India, Members of Parliament, Supreme Court and High Court judges, etc.
Fourth	Contains the provisions in relation to the allocation of seats for States and Union

	Territories in the Rajya Sabha
Fifth	Contains provisions in relation to the administration and control of scheduled areas and scheduled tribes
Sixth	Contains provisions in relation to the administration of tribal areas in the states of Assam, Meghalaya, Tripura, and Mizoram
Seventh	Union, State, and Concurrent list
Eight	22 official languages
Nine	It deals with the state acts and regulations related to land reforms
Ten	Provisions relating to the disqualification of the members of Parliament and State Legislatures on the ground of defection.
Eleven	Provisions that specify the powers, authority, and responsibilities of Panchayats.
Twelve	Provisions that specify the powers, authority, and responsibilities of Municipalities. It has 18 matters.

Que. 68 A metallic solid cuboid of sides 44 cm, 32 cm and 36 cm melted and converted into some number of spheres of radius 12 cm. How many such sphere can be made with the metal ($\pi = 22/7$)?

1. 5
2. 6
3. 7
4. 8

Solution Given: Correct Option - 3

The sides of the cuboid are 44 cm, 32 cm, and 36 cm

The radius of the sphere is 12 cm

Concept Used:

The volume of a cuboid of sides l, b and h = $l \times b \times h$

The volume of the sphere of radius r = $(4/3)\pi r^3$

Calculation:

The volume of the metallic cuboid is $(44 \times 32 \times 36) \text{ cm}^3$

The volume of the sphere is $(4/3) \times \pi \times 12^3$

Let, the total number of such sphere is n

Accordingly,

$$44 \times 32 \times 36 = n \times (4/3) \times \pi \times 12^3$$

$$\Rightarrow 44 \times 32 \times 36 = n \times (4/3) \times (22/7) \times 12 \times 12 \times 12$$

$$\Rightarrow n = 44 \times 32 \times 36 \times (3/4) \times (7/22) \times (1/12) \times (1/12) \times (1/12)$$

$$\Rightarrow n = 7$$

∴ Such 7 spheres can be made by given metallic cuboid.

Que. 69 Mohan is standing facing East. He turns 90° in an anticlockwise direction. He then turns 45° in the clockwise direction. Which direction is he facing now?

1. South-West
2. North-West
3. North-East
4. South-East

Solution Correct Option - 3

Given:

Mohan is standing facing East.

He turns 90° anticlockwise direction.

Mohan now turns toward the North direction.

Then he turns 45° in the clockwise direction.

Now he is facing North-East.

Hence, Mohan is facing **North-East direction**.

Shortcut Trick

Calculate clockwise and anticlockwise separately in this type of question.

Subtract them and the answer will be the final turn of the person.

Whoever has more turns in total (clockwise/anticlockwise) will turn in that direction.

Que. 70 The first complete census in India was held in the year_____.

1. 1873
2. 1891
3. 1881
4. 1885

Solution Correct Option - 3

The correct answer is option 3, i.e. **1881**.

- Census was conducted non-synchronously between 1865 and 1872 in different parts of the country.
- This effort culminating in 1872 has been popularly labelled as the first Census of India.
- **However, the first synchronous Census in India was carried out in 1881.**
- An unbroken chain of censuses since then gives the Indian Census a unique historical legacy unparalleled in the world.
- Census 2011 is the 15th Census in this continuous series from 1872 and the 7th since Independence.

Que. 71 In $\triangle ABC$, O is the circumcentre of the triangle and $\angle BOC = 60^\circ$, then what will be the value of $\angle BAC$?

1. 90°
2. 30°
3. 60°
4. 45°

Solution Correct Option - 2 **Given:**

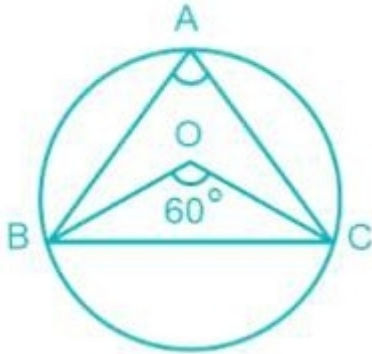
O is circumcentre

$$\angle BOC = 60^\circ$$

Formula used:

The angle subtended at the center is double the angle subtended at the circle

Calculation:



$$\angle BOC = 2 \times \angle BAC$$

$$\Rightarrow 60^\circ = 2 \times \angle BAC$$

$$\Rightarrow \angle BAC = 30^\circ$$

$$\therefore \angle BAC \text{ is } 30^\circ$$

Que. 72 Direction: In the given question a statement is followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

Statement:

All roses are red

All red are color

Few red are yellow

Conclusion:

I. Some roses are color

II. Some color are yellow

1. Both Conclusions follow
2. Only Conclusion II follows
3. Neither Conclusion I nor Conclusion II follows
4. Only Conclusion I follows

Solution Correct Option - 1

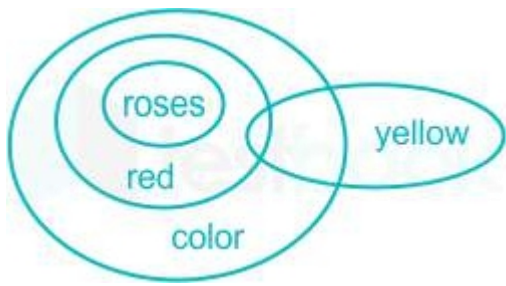
Statement:

All roses are red

All red are color

Few red are yellow

The possible Venn diagram of the given statement are:



Conclusion:

- I. Some roses are color. (**True**, as all roses are red and all red are color.)
- II. Some color are yellow. (**True**, as few red are yellow and all red are color.)

Que. 73 Which among the following Acts was also known as the Black Act?

1. Rowlatt Act
2. Pitt's Act
3. Indian Councils Act
4. Vernacular Press Act

Solution Correct Option - 1

- **Rowlatt Act** was also known as the **Black Act**.
- It is the **anarchical and revolutionary crimes act**.
- It was introduced by the **British Government** in **1919**.
- It was named after its president, British judge Sir Sidney Rowlatt.
- **Pitt's Act** (1784) - to bring the East India Company's rule in India under the control of the British Government and thus address the shortcomings of the Regulating Act (1773).
- **Indian Councils Acts** were passed in 1861, 1892 and 1909 to bring reform in the administration of India.
- **Vernacular Press Act** was proposed by Lord Lytton (1876 - 80) to impose restrictions on the Indian press.

Que. 74 A solution of 100L contains 75 percent water and rest liquid sugar. How much liquid sugar must be added to make 50 percent sugar solution?

1. 30 L
2. 20 L
3. 25 L
4. 50 L

Solution Given: Correct Option - 4

Amount of sugar and water in the solution = 25% and 75%

The total amount of solution = 100 L

New percentage of sugar in the mixture = 50%

Calculation:

Amount of sugar in the initial solution = $25\% \times 100 \text{ L} = 25 \text{ L}$

Amount of water in the initial solution = $75\% \times 100 \text{ L} = 75 \text{ L}$

Let x litre of sugar solution is added.

Hence,

$$(25 + x)/(100 + x) \times 100 = 50$$

$$\Rightarrow (25 + x)/(100 + x) = 1/2$$

$$\Rightarrow 50 + 2x = 100 + x$$

$$\Rightarrow x = 50 \text{ lt}$$

∴ The amount of sugar added into the mixture to get a 50% sugar solution is 50 L liquid sugar.

Alternate Method

Amount of water in the initial solution = $75\% \times 100 \text{ L} = 75 \text{ L}$

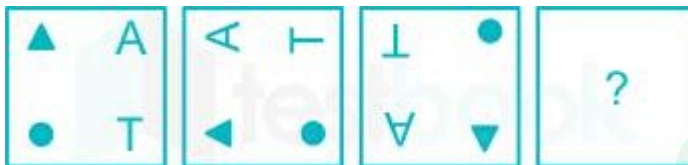
Since, in new solution, water percent = 50%, liquid sugar percent = 50%

So, 50% of new solution = 75 L

⇒ total quantity of new solution = $100\% = 75 \times 2 = 150 \text{ L}$

⇒ Quantity of liquid sugar required = $(150 - 100)\text{L} = 50 \text{ L}$

Que. 75 Select the option that will correctly fit in the blank space in the given figure series.

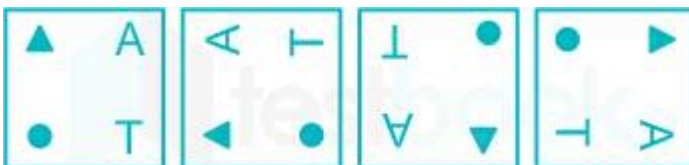


- 1.
- 2.
- 3.
- 4.

Solution Correct Option - 4

The pattern followed here is:

The elements inside the box is moving 90° anticlockwise in each step.



There is only one image that satisfies the rotation in the correct manner.

Hence, **option 4** is the correct answer.

Que. 76 What is pH of Lemon Juice?

1. 3.8
2. 5.5
3. 6.6
4. 2.5

Solution Correct Option - 4

pH of some common aqueous solutions

Solution	pH
1M HCl	0.0
Gastric juice	1.0
Lemon juice	2-3
Vinegar	3.0
Tomato juice	4.1
Pure water, sugar solution	7.0

Que. 77 If the angles of triangle ABC are $2x^\circ$, $(3x - 12)^\circ$, and $(5x - 18)^\circ$, then find the largest angle?

1. 98°
2. 87°
3. 80°
4. 107°

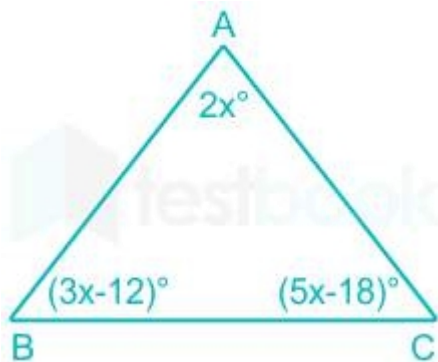
Solution Given: Correct Option - 2

$2x^\circ$, $(3x - 12)^\circ$, and $(5x - 18)^\circ$ are angles of $\triangle ABC$.

Concept used:

Sum of angles of triangle are 180° .

Calculation:



In $\triangle ABC$,

$$\angle A + \angle B + \angle C = 180^\circ$$

$$\Rightarrow 2x^\circ + (3x - 12)^\circ + (5x - 18)^\circ = 180^\circ$$

$$\Rightarrow 10x - 30 = 180^\circ$$

$$\Rightarrow 10x = 210^\circ$$

$$\Rightarrow x = 21$$

Now,

$$\text{Largest angle} = (5x - 18)^\circ$$

$$= 5 \times 21 - 18$$

$$= 105 - 18$$

$$= 87^\circ$$

∴ The largest angle of ΔABC is 87° .

Que. 78 Select the related number from the given alternatives.

$$21 : 11 :: 19 : ?$$

1. 10
2. 25
3. 22
4. 41

Solution Correct Option - 1

The logic is:

$$11 \times 2 = 22 - 1 = 21$$

Similarly,

$$10 \times 2 = 20 - 1 = 19$$

Hence the correct answer is 10.

Que. 79 In which year did the Bhopal Gas Tragedy take place?

1. 1985
2. 1984
3. 1988
4. 1983

Solution Correct Option - 2

The correct answer is **1984**.



Key-Points

- Considered to be the world's worst industrial disaster, the Bhopal gas tragedy took place on **2-3 December 1984** at the **Union Carbide India Limited plant in Bhopal, Madhya Pradesh**.
- It was a gas leak incident in which a highly toxic gas called **methyl isocyanate** leaked from the pesticide plant and spread to the small towns near the plant. The death toll is estimated to be somewhere between 3,787 to 16000.
- Lower levels of exposure to the gas cause skin and eye irritation, chest pain, asthma, and dyspnea. Higher levels of exposure cause pulmonary edema, hemorrhages, bronchial pneumonia, and death.



Additional Information

- <https://www.hindustantimes.com/india-news/36th-bhopal-gas-tragedy-anniversary-mere-lip-service-ritual-says-survivor/story-xZh0CUOb5181D0V9jOm1aK.html>

Que. 80 If 30% students failed in History, 45% failed in Politics and 25% failed in both the subjects then how many students passed in both the subjects?

1. 60%
2. 45%
3. 50%
4. 40%

Solution Correct Option - 3

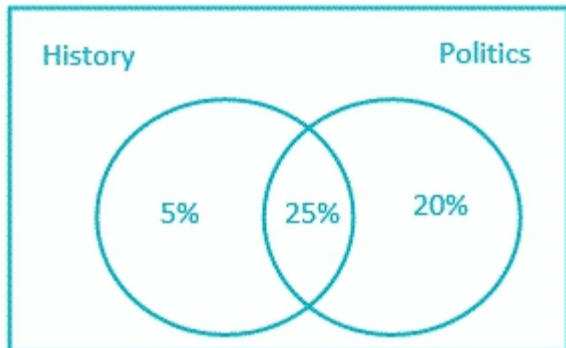
Percentage of students failed in both the subjects = 25%

Percentage of students failed in History = 30%

Percentage of students failed in History only = $30\% - 25\% = 5\%$

Percentage of students failed in Politics = 45%

Percentage of students failed in Politics only = $45\% - 25\% = 20\%$



Now,

Percentage of students passed in both the subjects = $100 - (5\% + 25\% + 20\%) = 50\%$

Que. 81 Select the related letters from the given alternatives.

73 : 21 :: 48 : ?

1. 12
2. 32
3. 51
4. 20

Solution Correct Option - 2

The pattern followed here is:

73 is written as $7 \times 3 = 21$

Similarly,

48 is written as $4 \times 8 = 32$

Hence, **32** is the answer

Que. 82 Chlorine gas is a major component of which of the following?

1. Water
2. Tear gas
3. Liquefied Petroleum Gas
4. Gobar gas

Solution Correct Option - 2

- ♦ Chlorine gas is a major component of **tear gas**.

- Tear gas comprises substances that irritate the eyes and its mucous membranes and cause tears and stinging sensation.
- The major components of tear gas are o-chlorobenzylidenemalononitrile, or CS and ω-chloroacetophenone, or CN.
- Liquefied Petroleum Gas or LPG consists of butane or propane.
- **Gobar** gas is also known as **biogas**. It is produced by breaking down organic matter in the absence of oxygen.

Que. 83 If the operating cost of 6 burners for 6 hours in 8 days is Rs. 450 then find the number of burners if used for 5 hours for 10 day with operating cost of Rs.1250.

1. 16
2. 14
3. 12
4. 10

Solution Given: Correct Option - 1

6 burners are used for 6 hours for 8 days with an operating cost 450 Rs.

Concept used:

$$\frac{M_1 D_1 H_1}{W_1} = \frac{M_2 D_2 H_2}{W_2}$$

Where M_1 denotes the number of burners here.

D_1 denotes the number of Days and H_1 the number of hours.

W_1 denotes the work in terms of rupees.

Calculation:

We have,

$$\frac{6 \times 6 \times 8}{450} = \frac{x \times 5 \times 10}{1250}$$

$$\Rightarrow x = 16$$

∴ The number of burners = 16.

Que. 84 Four letter clusters have been given, out of which three are alike in some manner, while one is different. Select the odd letter cluster.

1. ACBD
2. PRQS
3. MONP
4. BCDE

Solution Correct Option - 4

According to the English Alphabet series with positional value:

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

The pattern followed here is:

$$A + 2 = C \text{ and } B + 2 = D$$

$$P + 2 = R \text{ and } Q + 2 = S$$

$$M + 2 = O \text{ and } N + 2 = P$$

$$B + 1 = C \text{ and } D + 1 = E$$

All are having an addition of 2 except the last one having an addition of 1.

Hence, **BCDE** is the odd one.

Que. 85 Which among the following gases is also known as 'Laughing Gas'?

1. Sulphur dioxide
2. Nitrous oxide
3. Carbon dioxide
4. Carbon monoxide

Solution Correct Option - 2

Nitrous oxide is also known as "**Laughing Gas**".

- ♦ The chemical formula of **Nitrous oxide** is **N₂O**.
- ♦ It is a **colourless, non-flammable gas at room temperature, with a faint metallic smell and taste**.
- ♦ It is a potent oxidizer similar to molecular oxygen at elevated temperatures.
- ♦ It has important medical uses for its anesthetic and pain-reducing effects, especially in surgery and dentistry.
- ♦ The name "**Laughing Gas**" is coined by **Humphry Davy**.

Que. 86 When a number is divided by 7 it gives 3 as remainder. Find the total possible numbers between 1 to 100.

1. 10
2. 14
3. 18
4. 19

Solution Given: Correct Option - 2

When a number is divided by 7 it gives 3 as the remainder.

Formula used:

$l = a + (n - 1) \times d$ (where l, a, n and d are last term, first term, number of terms and common difference respectively)

Calculations:

Required number = $7x + 3$

Putting $x = 0, 1, 2, \dots, 13$, we get 3, 10, 17.....94.

The required series is 3, 10, 17.....94

$\Rightarrow a = 3, d = 7$ and $l = 94$

$l = a + (n - 1) \times d$

$\Rightarrow 94 = 3 + (n - 1) \times 7$

$\Rightarrow n = 14$

\therefore The total possible numbers satisfying the given conditions are 14



Mistake Point

The first number will be 3 because when we multiply 7 by 0 and add 3, then the value will be $7 \times 0 + 3 = 3$

The numbers are = 3, 10, 17, 24, 31, 38, 45, 52, 59, 66, 73, 80, 87 and 94

Total number of numbers = 14

Que. 87 Four numbers have been given, out of which three are alike in some manner, while one is different. Select the odd one.

1. 510
2. 612
3. 48
4. 31

Solution Correct Option - 4

The pattern followed here is:

$$510 = 5 \times 2 = 10$$

$$612 = 6 \times 2 = 12$$

$$48 = 4 \times 2 = 8$$

$$31 \neq 3 \times 2$$

Hence, **31** is the odd one.

Que. 88 Which is NOT an example of one-sided symbiotic relationship?

1. Cattle egrets and cattle
2. A hermit crab and an empty seashells
3. A spider on a tree
4. Tapeworm in host's stomach

Solution Correct Option - 4

The correct answer is **Tapeworm in the host's stomach.**

- Tapeworm in the host's stomach is NOT an example of a one-sided symbiotic relationship (Commensalism).
- Tapeworm in the host's stomach is an example of Parasitism.
- **Symbiosis** is a close relationship between two species in which at least one species benefits. For the other species, the relationship may be positive, negative, or neutral.
- There are three different types of symbiotic relationships:
 - Mutualism
 - Commensalism(one-sided symbiotic relationship)
 - Parasitism
- **Mutualism:** It is a type of symbiotic relationship in which both species benefit. **Example:** goby fish and shrimp.
- **Commensalism:** It is a type of symbiotic relationship in which one species benefits while the other species is not affected. **Example:** mites attach themselves to larger flying insects to get a “free ride”.
- **Parasitism:** It is a type of symbiotic relationship in which one species (the parasite) benefits while the other species (the host) is harmed. **Example:** Roundworms are parasites of mammals, including humans, cats, and dogs.

Que. 89 If $\sin A = 4/5$, then find the value of $(1 + \tan A)/(1 + \cot A)$?

1. $7/3$
2. $3/4$
3. $4/7$
4. $4/3$

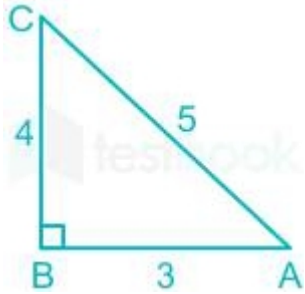
Solution Given: Correct Option - 4

$$\sin A = 4/5$$

Concept used:

$\sin A = \text{Perpendicular} / \text{Hypotenuse}$

Calculation:



$$\sin A = 4/5$$

$$BC = \sqrt{(5^2 - 4^2)} = \sqrt{(25 - 16)} = \sqrt{9} = 3$$

[Using Pythagorean triplets]

Now,

$$\tan A = BC/AB$$

$$\Rightarrow \tan A = 4/3$$

$$\cot A = AB/BC$$

$$\Rightarrow \cot A = 3/4$$

$$\therefore (1 + \tan A)/(1 + \cot A)$$

$$\Rightarrow (1 + 4/3)/(1 + 3/4)$$

$$\Rightarrow (7/3)/(7/4)$$

$$\Rightarrow 4/3$$

\therefore The value of $(1 + \tan A)/(1 + \cot A)$ is $4/3$.

Que. 90 **Directions:** In each of the following questions, the statement is given followed by two conclusions numbered I and II. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You are to decide which of the given conclusions can be drawn definitely from the given statement.

Statements: During the lockdown, people started doing work from home.

Conclusions:

- I. People don't want to go to the office and like to stay at home.
 - II. Home gives a good environment to work and increases the productivity of the company.
1. Only I follows
 2. only II follows
 3. both I and II follow
 4. neither I nor II follows

Solution Correct Option - 4

Given:

Statements: During the lockdown, people started doing work from home.

Conclusions:

I. People don't want to go to the office and like to stay at home. (**False**, there is no mention in the statement that people like to work at home and don't want to go office.)

II. Home gives a good environment to work and increases the productivity of the company. (**False**, maybe, home can give a good environment but whether it can increase the productivity of the company or not, is not discussed in the statement.)

Hence, neither I nor II follows

Que. 91 Satya Nadella, is CEO of which of the following companies?

1. Google
2. Microsoft
3. IBM
4. Apple

Solution Correct Option - 2

The correct answer is option 2 i.e **Microsoft**

Google

- Google is an **American multinational company** founded in **September 1998** by Larry Page and Sergey Brin American Computer Scientists.
- The company specializes in **Internet-related services** and **products** Like **Google Chrome, Google-Pay, Google Assistant, G-Mail, Etc.**
- The services and products include **online advertising technologies, a search engine, cloud computing, software, and hardware.**
- The **CEO** of Google is **Sunder Pichai.**

Microsoft

- Microsoft is an **American multinational company** founded by **Bill Gates** and **Paul Allen** on **April 4, 1975.**
- It **develops, manufactures, licenses supports, and sells computers, consumer electronics, and related services.**
- The products of Microsoft are **Microsoft Windows, Operating system, Microsoft suite, Internet Explorer and Edge.**
- The **CEO** of Microsoft is **Satya Nadella.**

International Business Machines Corporation (IBM)

- **International Business Machines Corporation (IBM)** is an **American multinational company** founded in **1911.**
- IBM produces and sells **computer hardware, middleware, and software.**
- The **CEO** of **IBM** is **Arvind Krishna.**

Apple

- **Apple** is an **American multinational company** and founded by **Steve Jobs, Steve Wozniak, and Ronald Wayne** in **April 1976.**
- The company designs to **develop** and **sell consumer electronics, computer software, and online services.**

- The **CEO** of **Apple** is **Tim Cook**.

Que. 92 What is the full form of MICR?

1. Magnetic Ink Credit Recognition
2. Magnetic Ink Card Recognition
3. Magnetic Ink Character Recognition
4. Magnetic Ink Code Recognition

Solution Correct Option - 3

The correct answer is **Magnetic Ink Character Recognition**.



Key-Points

- MICR is used by the banking industry to ease the processing and clearance of cheques and other documents.
- Numbers and characters found on the bottom of checks are printed using the Magnetic Ink.
- When a document that contains this ink needs to be read, it passes through a machine, which magnetizes the ink and then translates the magnetic information into characters.

Que. 93 What is the SI unit of amount of substance?

1. kg
2. g
3. mol
4. ton

Solution Concept: Correct Option - 3

- The quantity of matter contained in the body is known as Mass. While weight is the force of gravity acting on the body.
- The mass has only the magnitude but the weight has both magnitude and direction.
- The SI unit of **mass** is the **kilogram (kg)** and **CGS unit is gram (g)**
- Also amount of substance is a physical quantity which gives a measure of the size of a group of entities like electrons, molecules, atoms, etc.
- The **SI unit of amount of substance is mole (mol)**.

$$1 \text{ mol} = 6.022 \times 10^{23} \text{ particles}$$

Explanation:

From the above explanation we can see that, SI unit used to measure the amount of substance is termed as **Mole (mol)**

Que. 94 Who was the first to propose Atomic Theory?

1. J.J. Thomson
2. Rutherford
3. John Dalton
4. Neils Bohr

Solution Correct Option - 3

The correct answer is option 3, i.e. John Dalton.

Name of the Scientist	Discovery
J.J. Thomson	Discovered electron, a sub-particle of an atom.
Rutherford	an atom is composed of an empty space mostly with electrons orbiting in a set predictable path around a fixed positively charged nucleus(Proton+Neutron).
John Dalton	First to propose Atomic Theory
Neils Bohr	Atomic structure and the concept of energy of orbits and quantum theory

Que. 95 Which instrument is used for viewing the sun?

1. Stroboscope
2. Telescope
3. Helioscope
4. Sun meter

Solution Concept: Correct Option - 3

Helioscope was first used by Benedetto Castelli in 1578

Since observing sun directly can damage eyesight and its difficult to observe anything directly in Helioscope sunlight is projected on a white sheet of paper with a help of telescope-like equipment and then any changes like eclipse can be observed easily by observing the sheet

Explanation:

- A helioscope is an instrument used for observing the sun and sunspots.
- The helioscope was first used by Benedetto Castelli and refined by Galileo Galilei.

Que. 96 Tyre Park is located in which of the following states?

1. West Bengal
2. Madhya Pradesh
3. Arunachal Pradesh
4. Maharashtra

Solution Correct Option - 1

The correct answer is **West Bengal**.



Key-Points

- **West Bengal** will soon feature "**India's first**" '**Tyre Park**', where artworks made from scrap and defective parts will be on display, a state minister said.
- Asserting that it is a unique concept, and not found anywhere in the country, the official said the idea behind the park is waste can be converted into art.
- Disposal of used and waste tyres is not only a challenge for authorities but also takes a lot of time.
- Usually, such tyres remain piled up at the bus depots, making them an eyesore. The employees of West Bengal Transport Corporation (WBTC) started working on such tyres and other scrap material for weeks and have been able to convert them into an eye-pleasing and colourful amalgamation.

Que. 97 Which of the following places has India's first garbage cafe?

1. Chattisgarh
2. Jharkhand
3. Kerala
4. Kanpur

Solution Correct Option - 1

The correct answer is **Chattisgarh**.



Key-Points

- The country's **first garbage cafe** has been launched here in **Chhattisgarh**.
- Under this, the Municipal Corporation will provide food to the poor and homeless in lieu of plastic waste.
- The cafe, situated in Ambikapur, which bagged the title of the second cleanest city in India, through the initiative, will provide impetus to Prime Minister Narendra Modi's 'plastic-free' India resolve.

Que. 98 Who was the founder of Khalsa Panth?

1. Guru Nanak Dev
2. Guru Arjun Dev
3. Guru Teg Bahadur
4. Guru Gobind Singh

Solution Correct Option - 4

The correct answer is **Guru Gobind Singh**.

- **Khalsa tradition** was initiated in 1699 by the Tenth Guru of Sikhism, **Guru Gobind Singh**.
- Its formation was a key event in the history of Sikhism.
- The founding of **Khalsa** is celebrated by Sikhs during the festival of **Vaisakhi**.



Additional Information

No.	Sikh Gurus	Important Points
1st	Guru Nanak Dev	<ul style="list-style-type: none"> • 1469 AD to 1539 AD • Introduced the concept of God • Started Guru ka Langar • He was the contemporary of Mughal Emporer - Babur

2nd	Guru Angad Dev	<ul style="list-style-type: none"> • 1539 AD to 1552 AD • Introduced Gurmukhi Script
3rd	Guru Amardas Sahib	<ul style="list-style-type: none"> • 1552 AD to 1574 AD • Introduced Anand Karaj (Marriage Ceremony)
4th	Guru Ram Das	<ul style="list-style-type: none"> • 1574 AD to 1581 AD • Started construction of Golden Temple at Amritsar
5th	Guru Arjan Dev	<ul style="list-style-type: none"> • 1581 AD to 1606 AD • Compiled Adi Granth • He became the first martyr in Sikh history when Emperor Jahangir ordered his execution.
6th	Guru Har Gobind	<ul style="list-style-type: none"> • 1606 AD to 1644 AD • Also known as Soldier Saint • He organised a small army
7th	Guru Har Rai Sahib	<ul style="list-style-type: none"> • 1644 AD to 1661 AD • He gave shelter to Dara Shikoh
8th	Guru Har Krishan Sahib	<ul style="list-style-type: none"> • 1661 AD to 1664 AD • He was the youngest of the Gurus
9th	Guru Tegh Bahadur Sahib	<ul style="list-style-type: none"> • 1665 AD to 1675 AD • Established the town Anandpur
10th	Guru Gobind Singh Sahib	<ul style="list-style-type: none"> • 1675 AD to 1708 AD • He created Khalsa in 1699. • Last Sikh guru in human form.

Que. 99 The United Nations Charter was signed by 51 original members of the United Nations in 1945 at

1. Hague Conference
2. London Conference
3. San Francisco Conference
4. Berlin Conference

Solution Correct Option - 3

The correct answer is **San Francisco Conference**.

- The United Nations Charter was signed by 51 original members of the United Nations in 1945 at the **San Francisco conference** 850 delegates from **51 nations deliberated, discussed, and finalised the charter** which initially led into 4

- It was passed unanimously on 26th June 1945.



Important Point

- The United Nations officially came into existence on **24 October 1945**.
- United Nations Day is celebrated on **24 October** each year.
- **The main organs of the UN are:**
 1. the General Assembly
 2. the Security Council
 3. the Economic and Social Council
 4. the Trusteeship Council
 5. the International Court of Justice
 6. and the UN Secretariat
- All the **6** were established in 1945 when the UN was founded.
- The **General Assembly** is the main deliberative, policymaking and representative organ of the UN.



Additional Information

- **London conference** (officially named as Declaration of St James' palace) was signed on 12th June 1941. This conference led to the idea of the formation of the United Nation,
- The **Hague Conference**, 1954 is related to the protection of cultural property in the Event of Armed Conflict.
- The **Berlin Conference** of 1884–1885, also known as the **Congo Conference** or West Africa Conference regulated European colonization and trade in Africa.

Que. 100 Who among the following is a current non-permanent member of UN Security Council?

1. Pakistan
2. Australia
3. India
4. All of these

Solution Correct Option - 3

The correct answer is **India**.

- **India** is a current non-permanent member of UN Security Council.



Key-Points

- The United Nations Security Council is one of the **six** main organs of the UN, and it is primarily responsible for maintaining international peace and security.
- **It consists of 15 members -five permanent members and 10 non-permanent members.**
- The five permanent members are the US, UK, Russia, China and France.
- Every year, five non-permanent members are elected for a tenure of **two years**.
- To be elected as a non-permanent member of the council, each member-country requires a **two-third** majority of the entire assembly.



Important Point

- India was the sole candidate for a non-permanent seat from the Asia-Pacific category for the 2021-22 term.
- **India got 184 out of the 192 valid votes polled** and got a seat of non-permanent member of UN Security Council.
- Previously, India had been elected as a non-permanent member of the Council for the years 1950-1951, 1967-1968, 1972-1973, 1977-1978, 1984-1985, 1991-1992 and 2011-2012.
- The subsidiary bodies of the council are known as committees: Counter-Terrorism Committee, Non-Proliferation Committee, United Nations Military Staff Committee and Sanctions Committee.
- The council uses sanctions to put pressure on a country to comply with its objectives, without using force.