

MOCK TEST 4

Q. 1 The largest four-digit number that is exactly divisible by 88 is:

Option 1:
9988

Option 2:
9944

Option 3:
8888

Option 4:
9768

Correct Answer:
9944

Solution:

We know that the largest four-digit number is 9999.

So, when we divide 9999 by 88, we get 55 as the remainder.

⇒ The largest 4-digit number exactly divisible by 88 = $9999 - 55 = 9944$

Hence, the correct answer is 9944.

Q. 2 Find the greatest number that will divide 390, 495, and 300 without leaving a remainder.

Option 1:
5

Option 2:
15

Option 3:
25

Option 4:
35

Correct Answer:
15

Solution:

HCF of the given numbers:

$$390 = (2 \times 3 \times 5 \times 13)$$

$$495 = (3 \times 3 \times 5 \times 11)$$

$$300 = (2 \times 2 \times 3 \times 5 \times 5)$$

$$\text{Now HCF} = (3 \times 5) = 15$$

So, 15 is the number that can divide 390, 495, and 300 without leaving a remainder.

Hence, the correct answer is 15.

Q. 3 The greater of the two numbers whose product is 900 and whose sum exceeds their difference by 30 is:

Option 1:

60

Option 2:

75

Option 3:

90

Option 4:

100

Correct Answer:

60

Solution:

Let the numbers be x and y where $x > y$.

According to the question,

$$\Rightarrow (x + y) - (x - y) = 30$$

$$\Rightarrow x + y - x + y = 30$$

$$\Rightarrow y = \frac{30}{2} = 15$$

$$\text{Also, } xy = 900$$

$$\Rightarrow 15x = 900$$

$$\therefore x = \frac{900}{15} = 60$$

Hence, the correct answer is 60.

Q. 4 What is the sum of the first 9 terms of an arithmetic progression, if the first term is 7 and the last term is 55?

Option 1:

219

Option 2:

137

Option 3:

231

Option 4:

279

Correct Answer:

279

Solution:

Given: The first term is 7 and the last term is 55.

Using the formula, $S_9 = \frac{n}{2}(a + l)$

Where a is the first term, l is the last term of the A.P., and n is the number of terms.

By putting the value of 1st and last term,

$$\Rightarrow S_9 = \frac{9}{2}(7 + 55)$$

$$\Rightarrow S_9 = \frac{9}{2} \times 62$$

$$\therefore S_9 = 9 \times 31 = 279$$

Hence, the correct answer is 279.

Q. 5 If $x = \frac{4\sqrt{ab}}{\sqrt{a} + \sqrt{b}}$, then what is the value of $\frac{x+2\sqrt{a}}{x-2\sqrt{a}} + \frac{x+2\sqrt{b}}{x-2\sqrt{b}}$ (when $a \neq b$)?

Option 1:

0

Option 2:

2

Option 3:

4

Option 4:

$$\frac{(\sqrt{a} + \sqrt{b})}{(\sqrt{a} - \sqrt{b})}$$

Correct Answer:

2

Solution:

Given:

$$x = \frac{4\sqrt{ab}}{\sqrt{a}+\sqrt{b}}$$

$$\text{Equation} = \frac{x+2\sqrt{a}}{x-2\sqrt{a}} + \frac{x+2\sqrt{b}}{x-2\sqrt{b}}$$

Put the value of x in equation:

$$\begin{aligned} &= \frac{\frac{4\sqrt{ab}}{\sqrt{a}+\sqrt{b}}+2\sqrt{a}}{\frac{4\sqrt{ab}}{\sqrt{a}+\sqrt{b}}-2\sqrt{a}} + \frac{\frac{4\sqrt{ab}}{\sqrt{a}+\sqrt{b}}+2\sqrt{b}}{\frac{4\sqrt{ab}}{\sqrt{a}+\sqrt{b}}-2\sqrt{b}} \\ &= \frac{\frac{4\sqrt{ab}+2a+2\sqrt{ab}}{\sqrt{a}+\sqrt{b}}}{\frac{4\sqrt{ab}-2a-2\sqrt{ab}}{\sqrt{a}+\sqrt{b}}} + \frac{\frac{4\sqrt{ab}+2\sqrt{ab}+2b}{\sqrt{a}+\sqrt{b}}}{\frac{4\sqrt{ab}-2\sqrt{ab}-2b}{\sqrt{a}+\sqrt{b}}} \\ &= \frac{4\sqrt{ab}+2a+2\sqrt{ab}}{4\sqrt{ab}-2a-2\sqrt{ab}} + \frac{4\sqrt{ab}+2\sqrt{ab}+2b}{4\sqrt{ab}-2\sqrt{ab}-2b} \\ &= \frac{2}{2} \left[\frac{2\sqrt{ab}+a+\sqrt{ab}}{2\sqrt{ab}-a-\sqrt{ab}} \right] + \frac{2}{2} \left[\frac{2\sqrt{ab}+\sqrt{ab}+b}{2\sqrt{ab}-\sqrt{ab}-b} \right] \\ &= \frac{3\sqrt{ab}+a}{\sqrt{ab}-a} + \frac{3\sqrt{ab}+b}{\sqrt{ab}-b} \\ &= \frac{\frac{3\sqrt{ab}+a}{\sqrt{a}}}{\frac{\sqrt{ab}-a}{\sqrt{a}}} + \frac{\frac{3\sqrt{ab}+b}{\sqrt{b}}}{\frac{\sqrt{ab}-b}{\sqrt{b}}} \\ &= \frac{3\sqrt{b}+\sqrt{a}}{\sqrt{b}-\sqrt{a}} + \frac{3\sqrt{a}+\sqrt{b}}{\sqrt{a}-\sqrt{b}} \\ &= \frac{3\sqrt{b}+\sqrt{a}}{\sqrt{b}-\sqrt{a}} - \frac{3\sqrt{a}+\sqrt{b}}{\sqrt{b}-\sqrt{a}} \\ &= \frac{3\sqrt{b}+\sqrt{a}-3\sqrt{a}-\sqrt{b}}{\sqrt{b}-\sqrt{a}} \\ &= \frac{2\sqrt{b}-2\sqrt{a}}{\sqrt{b}-\sqrt{a}} \\ &= \frac{2(\sqrt{b}-\sqrt{a})}{\sqrt{b}-\sqrt{a}} \\ &= 2 \end{aligned}$$

Hence, the correct answer is 2.

- Q. 6** Nine students in a class contribute a certain sum of money. Seven of them gave Rs. 50 each, and the other two gave, respectively, Rs. 50 and Rs. 90 more than the average contribution. The average contribution of the class of nine students is:

Option 1:

Rs. 70

Option 2:

Rs. 50

Option 3:

Rs. 100

Option 4:

Rs. 120

Correct Answer:

Rs. 70

Solution:Let the average contribution of the class of nine students be x .

$$x = \frac{7 \times 50 + x + 50 + x + 90}{9}$$

$$\Rightarrow 9x = 2x + 490$$

$$\Rightarrow 7x = 490$$

$$\therefore x = 70$$

Hence, the correct answer is 70.

Q. 7 By selling a tape recorder for Rs. 1040, a man gains 4%. If he sells it for Rs. 950, his loss will be:**Option 1:**

5%

Option 2:

4%

Option 3:

4.5%

Option 4:

9%

Correct Answer:

5%

Solution:Let the cost price (CP) be Rs. x .

The selling price of the tape recorder is Rs. 1040.

The selling price is equal to 104% of x .

$$\text{Selling price} = \frac{104x}{100} = \text{Rs. } 1040$$

$$\text{Cost price (} x \text{)} = \frac{1040 \times 100}{104} = 1000$$

If it is sold for Rs. 950, there is a loss of Rs. 50.

$$\text{So, loss \%} = \frac{\text{Loss}}{\text{CP}} \times 100 = \frac{50}{1000} \times 100 = 5\%$$

Hence, the correct answer is 5%.

Q. 8 In a mixture of 25 litres, the ratio of milk to water is 4 : 1. Another 3 litres of water is added to the mixture. The ratio of milk to water in the new mixture is:

Option 1:

5 : 1

Option 2:

5 : 2

Option 3:

5 : 3

Option 4:

5 : 4

Correct Answer:

5 : 2

Solution:

The total quantity of the mixture is 25 litres.

Milk : Water = 4 : 1

Milk = $\frac{4}{5} \times 25 = 20$ litres, Water = $\frac{1}{5} \times 25 = 5$ litres

If 3 litres of water are added then the ratio becomes = $20 : (5 + 3) = 20 : 8 = 5 : 2$

Hence, the correct answer is 5 : 2.

Q. 9 A student has to score 40% to pass. He gets 67 and fails by 13 marks. What are the maximum marks?

Option 1:

300

Option 2:

200

Option 3:

150

Option 4:

240

Correct Answer:

200

Solution:

Let the maximum marks be 100%.

According to the question,

40% marks are equivalent to $(67 + 13) = 80$ marks

Now, 100% marks are equivalent to $\frac{80 \times 100}{40} = 200$ marks

So, the maximum marks = 200

Hence, the correct answer is 200.

Q. 10 A man travels $\frac{3}{4}$ th of the distance of his journey by bus, $\frac{1}{6}$ th by rickshaw and the remaining 2 km on foot. The total distance travelled by the man is:

Option 1:

12 km

Option 2:

18 km

Option 3:

20 km

Option 4:

24 km

Correct Answer:

24 km

Solution:

Given: A man travelled by bus $\frac{3}{4}$ th of the total distance.

The man travelled by rickshaw $\frac{1}{6}$ th of the total distance.

The man travelled on foot = 2 km

Let the total distance to be x km.

So, the remaining distance = $x - \frac{3x}{4} - \frac{x}{6}$

According to the question,

$$x - \frac{3x}{4} - \frac{x}{6} = 2$$

$$\Rightarrow \frac{12x - 9x - 2x}{12} = 2$$

$$\Rightarrow \frac{x}{12} = 2$$

$$\therefore x = 24$$

Hence, the correct answer is 24 km.

Q. 11 Reflection of the point (4, -6) in the origin is:

Option 1:

(4, 6)

Option 2:

(-4, -6)

Option 3:

(-4, 6)

Option 4:

(4, -6)

Correct Answer:

(-4, 6)

Solution:

The reflection of the point (a, b) in the origin is (-a, -b).

So, the reflection of (4, -6) in the origin = (-4, 6)

Hence, the correct answer is (-4, 6).

Q. 12 A sum of Rs. 2800 is divided into two parts in such a way that the interest on both parts is equal. If the first part is lent at 9% p.a. for 5 years and the second part is for 6 years at 10% p.a., find the two sums.

Option 1:

Rs.1800, Rs.1000

Option 2:

Rs.1600, Rs.1200

Option 3:

Rs.1400, Rs.1400

Option 4:

Rs.1300, Rs.1500

Correct Answer:

Rs.1600, Rs.1200

Solution:

Let the first part be y .

\therefore Second part = Rs. $(2800 - y)$

According to the question,

Simple interest = $\frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$

$$\therefore \frac{y \times 5 \times 9}{100} = \frac{(2800 - y) \times 6 \times 10}{100}$$

$$\Rightarrow 3y = 4 \times 2800 - 4y$$

$$\Rightarrow 7y = 4 \times 2800$$

$$\Rightarrow y = \frac{4 \times 2800}{7}$$

$$\Rightarrow y = 1600$$

\therefore Second part = Rs. $(2800 - 1600) = \text{Rs.}1200$

Hence, the correct answer is 'Rs.1600 and Rs.1200'.

Q. 13 The top of a broken tree touches the ground at a distance of 15 metres from its base. If the tree is broken at a height of 8 metres from the ground, then the actual height of the tree is:

Option 1:

17 metres

Option 2:

20 metres

Option 3:

25 metres

Option 4:

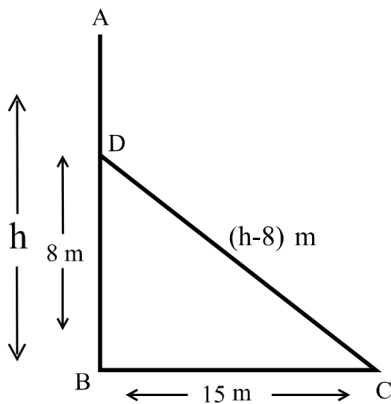
30 metres

Correct Answer:

25 metres

Solution:

Given: The top of a broken tree touches the ground at a distance of 15 metres from its base and the tree is broken at a height of 8 metres from the ground.



Let h be the actual height of the tree.

From the figure we get,

$BD = 8$ metres, $BC = 15$ metres and $AD = CD = (h - 8)$ metres.

By using the Pythagoras theorem,

$$CD^2 = BD^2 + BC^2$$

$$\Rightarrow (h - 8)^2 = 8^2 + 15^2$$

$$\Rightarrow (h - 8)^2 = 289$$

$$\Rightarrow (h - 8) = 17$$

$$\Rightarrow h = 17 + 8$$

$$\Rightarrow h = 25$$

Hence, the correct answer is 25 metres.

Q. 14 If $\tan \theta = \frac{4}{3}$, then the value of $\frac{3 \sin \theta + 2 \cos \theta}{3 \sin \theta - 2 \cos \theta}$ is:

Option 1:

$$\frac{1}{2}$$

Option 2:

$$1\frac{1}{2}$$

Option 3:

$$3$$

Option 4:

$$-3$$

Correct Answer:

$$3$$

Solution:

$$\frac{3 \sin \theta + 2 \cos \theta}{3 \sin \theta - 2 \cos \theta}$$

Divide both sides by $\cos \theta$,

$$= \frac{\frac{3 \sin \theta}{\cos \theta} + 2}{\frac{3 \sin \theta}{\cos \theta} - 2}$$

$$= \frac{3 \tan \theta + 2}{3 \tan \theta - 2}$$

$$= \frac{3 \times \frac{4}{3} + 2}{3 \times \frac{4}{3} - 2}$$

$$= \frac{6}{2}$$

$$= 3$$

Hence, the correct answer is 3.

Q. 15 A and B can do a job in 12 days, B and C in 15 days, and C and A in 20 days. If A, B, and C work together, they will complete the work in:

Option 1:

5 days

Option 2:

$7\frac{5}{6}$ days

Option 3:

10 days

Option 4:
 $15\frac{2}{3}$ days

Correct Answer:
 10 days

Q. 16 **Directions:** Study the table and answer the question. The number of five types of cycles manufactured by a company over the years is given below:

Years	Types of cycles (in 1000)				
	A	B	C	D	E
1997	200	150	78	90	65
1998	150	180	100	105	70
1999	180	175	92	110	85
2000	195	160	120	125	75
2001	220	185	130	135	80

What was the percentage drop in production of the A-type cycle from 1997 to 1999?

Option 1:
 10

Option 2:
 25

Option 3:
 20

Option 4:
 15

Correct Answer:
 10

Solution:

Production of the A type of the cycle in 1997 = 200

Production of the A type of the cycle in 1999 = 180

Drop in production of the A type of the cycle from 1997 to 1999 = $200 - 180 = 20$

$$\text{Percentage drop} = \frac{20 \times 100}{200} = 10\%$$

The percentage drop in production of the D type of the cycle from 1998 to 2000 is 10%.

Hence, the correct answer is 10.

Q. 17 A sphere has the same curved surface area as a cone, with a vertical height of 40 cm and a radius of 30 cm. The radius of the sphere is:

Option 1:

$$5\sqrt{5} \text{ cm}$$

Option 2:

$$5\sqrt{3} \text{ cm}$$

Option 3:

$$5\sqrt{15} \text{ cm}$$

Option 4:

$$5\sqrt{10} \text{ cm}$$

Correct Answer:

$$5\sqrt{15} \text{ cm}$$

Solution:

Given: Curved surface area of sphere = curved surface area of cone

Height of cone = 40 cm

Radius of cone = 30 cm

The slant height l of the cone = $\sqrt{h^2 + r^2}$

$$\text{So, } l = \sqrt{(40)^2 + (30)^2} = \sqrt{1600 + 900} = \sqrt{2500} = 50 \text{ cm}$$

The curved surface area of the cone = $\pi r l$

$$= \pi \times 30 \times 50 = 1500\pi \text{ cm}^2$$

According to the question,

Curved surface area of sphere = curved surface area of cone

$$4\pi r^2 = 1500\pi$$

$$\Rightarrow r = \sqrt{375}$$

$$\Rightarrow r = 5\sqrt{15} \text{ cm}$$

Hence, the correct answer is $5\sqrt{15}$ cm.

Q. 18 The diagonal of a cuboid of length 5 cm, width 4 cm, and height 3 cm is:

Option 1:

$$5\sqrt{2} \text{ cm}$$

Option 2:

$2\sqrt{5}$ cm

Option 3:

12 cm

Option 4:

10 cm

Correct Answer:

$5\sqrt{2}$ cm

Solution:

Given: Length (l) = 5 cm

Width (b) = 4 cm

Height (h) = 3 cm

Diagonal of a cuboid = $\sqrt{l^2 + b^2 + h^2}$

$$= \sqrt{5^2 + 4^2 + 3^2}$$

$$= \sqrt{25 + 16 + 9}$$

$$= \sqrt{50}$$

$$= 5\sqrt{2} \text{ cm}$$

Hence, the correct answer is $5\sqrt{2}$ cm.

- Q. 19** A well of 3 m in diameter is dug 14 m deep. The earth taken out of it has been spread evenly all around it in the shape of a circular ring of width 4 m to form an embankment. Find the height of the embankment.

Option 1:

4.25 m

Option 2:

2.25 m

Option 3:

1.125 m

Option 4:

1.75 m

Correct Answer:

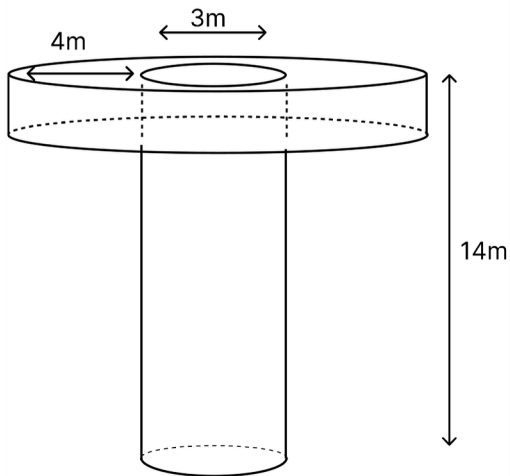
1.125 m

Solution:

Given: A well of 3 m in diameter is dug 14 m deep.

Here, $h_1 = 14 \text{ m}$, $r_1 = \frac{3}{2} \text{ m}$, and $r_2 = 4 + \frac{3}{2} = \frac{11}{2} \text{ m}$

We know that the volume of the cylinder = $\pi r^2 h$



Let the height of the embankment be $h_2 \text{ m}$.

According to the question,

$$\pi \times (r_1)^2 \times h = \pi \times (r_2^2 - r_1^2) \times h$$

$$\Rightarrow \pi \times \left(\frac{3}{2}\right)^2 \times 14 = \pi \times \left[\left(\frac{11}{2}\right)^2 - \left(\frac{3}{2}\right)^2\right] \times h$$

$$\Rightarrow \frac{9}{4} \times 14 = \left(\frac{121-9}{4}\right) \times h$$

$$\Rightarrow \frac{9}{4} \times 14 = \frac{112}{4} \times h$$

$$\Rightarrow h = \frac{9}{8}$$

$$\Rightarrow h = 1.125 \text{ m}$$

Hence, the correct answer is 1.125 m.

Q. 20 To cover a certain distance at a speed of 60 km/hr, a train takes 15 hours. If it covers the same distance in 12 hours, what will its speed be?

Option 1:

65 km/hr

Option 2:

70 km/hr

Option 3:

75 km/hr

Option 4:

80 km/hr

Correct Answer:

75 km/hr

Solution:

Given: A train takes 15 hours to cover a certain distance at a speed of 60 km/hr.

Distance = Speed × Time = 15 × 60 = 900 km

∴ Required speed to cover this distance in 12 hours = $\frac{900}{12} = 75$ km/hr

Hence, the correct answer is 75 km/hr.

Q. 21 Fixed Foreign Exchange Rate can be changed by _____.

Option 1:

RBI

Option 2:

SEBI

Option 3:

Ministry of Finance

Option 4:

FIPB

Correct Answer:

RBI

Solution:

The correct option is **RBI**.

The Reserve Bank of India (RBI), was established on April 1, 1935 and is headquartered in Mumbai. A fixed foreign exchange rate can be changed by the government or central bank that has established the rate.

Some ways in which a fixed exchange rate can be changed are:

- Open market operations
 - Changing the peg
 - Changing interest rates
 - Capital controls
-

Q. 22 Akbar's tomb is located at which of the following places?

Option 1:

Sikandra

Option 2:

Agra

Option 3:

Fatehpur Sikri

Option 4:
Allahabad

Correct Answer:
Sikandra

Solution:

The correct answer is **Sikandra**.

A significant Mughal architectural achievement, the Tomb of Akbar, was constructed in Sikandra between 1605 A.D. and 1613 A.D. The mortal remains of Akbar, the greatest Mughal Emperor, are kept there. Emperor Akbar personally began building this monument in 1600. Jahangir, Akbar's son, finished the mausoleum in 1613 A.D., following the latter's death in 1605.

Q. 23 Which state government launched 'Kaushalya Matritva Yojana' in March 2022?

Option 1:
Madhya Pradesh

Option 2:
Chhattisgarh

Option 3:
Haryana

Option 4:
Uttar Pradesh

Correct Answer:
Chhattisgarh

Solution:

The correct option is **Chhattisgarh**.

In March 2022, the Chhattisgarh government announced the Kaushalya Matritva Yojana. Women who have a second female child are eligible for an INR 5,000 lump sum of cash under the plan. The scheme's goal is to assist mothers in raising and educating their daughters, as well as to reduce female foeticide.

Q. 24 What situation would result if government expenditure exceeds the government revenue in the current account?

Option 1:
Deficit budgeting

Option 2:

Zero-based budgeting

Option 3:

Performance-based budgeting

Option 4:

Surplus budgeting

Correct Answer:

Deficit budgeting

Solution:

The correct option is **Deficit budgeting**.

When a government spends more money than it takes in during a given fiscal year, this is referred to as deficit budgeting. In other words, the government spends more than it brings in through taxes and other sources of income.

Q. 25 Maithili is primarily spoken in which state?

Option 1:

Bihar

Option 2:

Assam

Option 3:

West Bengal

Option 4:

Meghalaya

Correct Answer:

Bihar

Solution:

The correct option is **Bihar**.

Maithili is an Indo-Aryan language spoken primarily in the Indian states of Bihar and Jharkhand, as well as in the Terai region of Nepal. It holds the distinction of being one of the 22 scheduled languages of India. Maithili has a rich literary tradition and cultural heritage, with a history dating back many centuries.

Q. 26 Which one of the following countries was the first to establish a modern democracy?

Option 1:

France

Option 2:

England

Option 3:

America

Option 4:

India

Correct Answer:

America

Solution:

The correct option is **America**.

The United States of America was the first country to establish a modern democracy. It gained independence from British rule through the American Revolutionary War. The United States Constitution was drafted in 1787 and is considered one of the first examples of a modern democratic constitution.

Q. 27 Who was the founder of Banaras Hindu University?

Option 1:

Sukumar Dutt

Option 2:

Madan Mohan Malaviya

Option 3:

Dr. Rajendra Prasad

Option 4:

Motilal Nehru

Correct Answer:

Madan Mohan Malaviya

Solution:

The correct option is **Madan Mohan Malaviya**.

One of the most esteemed Central Universities in the nation, Banaras Hindu University was established by Pandit Madan Mohan Malaviya in 1916. An influential figure in the Indian independence struggle, Madan Mohan Malaviya was a politician, academic and educational reformer of India.

Q. 28 A _____ writ is issued by the higher court (High Court or Supreme Court) when the lower court has considered the case to go beyond its jurisdiction.

Option 1:

Habeas corpus

Option 2:

Mandamus

Option 3:

Prohibition

Option 4:

quo warranto

Correct Answer:

Prohibition

Solution:

The correct answer is **Prohibition**.

In cases where a lower court oversteps its jurisdiction, a higher court may issue a **writ of prohibition**. Alongside this, there are other notable writs like certiorari, habeas corpus, mandamus, and quo warranto. A "writ of prohibition" refers to a **judicial directive** that bars the lower court or quasi-judicial body from further pursuing proceedings.

Q. 29 The plateau that has both West and East-flowing drainage systems is

Option 1:

Malwa

Option 2:

Chota Nagpur

Option 3:

Ranchi

Option 4:

Hazaribagh

Correct Answer:

Malwa

Solution:

The correct answer is **Malwa**.

The Malwa Plateau geologically refers to the volcanic highland north of the Vindhya Range. It is connected to both the west and east drainage systems.

Q. 30 The 'Narmada Water Dispute Tribunal' was constituted to resolve the water sharing between

Option 1:

Gujarat and Rajasthan

Option 2:

Gujarat and Maharashtra

Option 3:

Gujarat, Maharashtra, Rajasthan and Madhya Pradesh

Option 4:

Gujarat, Daman and Diu

Correct Answer:

Gujarat, Maharashtra, Rajasthan and Madhya Pradesh

Solution:

The correct answer is **Gujarat, Maharashtra, Rajasthan and Madhya Pradesh**.

To settle disagreements over water sharing amongst the Indian states that make up the Narmada River basin, the Narmada Water Dispute Tribunal was established. The Narmada River is one of the major rivers in central India, and it flows through several states. The tribunal was established to adjudicate the allocation of Narmada River waters among the riparian states, which include Gujarat, Maharashtra, Rajasthan, and Madhya Pradesh.

Q. 31 What is the main purpose of white blood Corpuscles?

Option 1:

To carry nutrients

Option 2:

To combat infection

Option 3:

To carry oxygen

Option 4:

To give strength

Correct Answer:

To combat infection

Solution:

The correct option is **to combat infection**.

White blood corpuscles, commonly known as white blood cells (WBCs) or leukocytes, are a kind of blood cell that helps the immune system fight illnesses and foreign substances. They are engaged in a variety of immunological responses, including pathogen detection and defence, antibody production and immune reaction coordination.

Q. 32 Humidity is measured by Which of the following?

Option 1:

Lactometer

Option 2:

Polarimeter

Option 3:

Thermometer

Option 4:

Hygrometer

Correct Answer:

Hygrometer

Solution:

The correct option is the **Hygrometer**.

A **Hygrometer** is used to measure humidity. Hygrometers measure the amount of moisture in the air, which is crucial for weather, comfort, and natural processes. Relative humidity (RH), a measurement that compares the amount of water vapour in the air to the maximum amount the air can hold at a given temperature, is occasionally used to express humidity as a percentage.

Q. 33 In which city is the Forest Research Institute of India located?

Option 1:

New Delhi

Option 2:

Bhopal

Option 3:

Dehradun

Option 4:

Pune

Correct Answer:

Dehradun

Solution:

The correct option is **Dehradun**.

The Forest Research Institute of India (FRI) in Dehradun, Uttarakhand, was founded in 1906. It is one of India's oldest, and most prestigious organisations in forestry, and environmental sciences. FRI undertakes research, training, and instruction in forest management, conservation, biodiversity, and other related fields. It also acts as a hub for forestry and natural resource management research, and collaboration.

Q. 34 The molecular mass of a gas is:

Option 1:

twice its vapour pressure

Option 2:

equal to its vapour pressure

Option 3:

half its vapour pressure

Option 4:

not related to its vapour pressure

Correct Answer:

twice its vapour pressure

Solution:

The correct option is **twice its vapour pressure**.

The vapour pressure of a substance is the pressure exerted by its vapour when the substance is in equilibrium with its liquid (or solid) phase. Since any gas has a molecular mass that is twice as dense as hydrogen, which has two atoms per molecule, it has a vapour pressure that is twice as high.

Q. 35 The instrument used for measuring air pressure is called

Option 1:

Anemometer

Option 2:

Barometer

Option 3:

Hygrometer

Option 4:

Thermometer

Correct Answer:

Barometer

Solution:

The answer is the **Barometer**.

A barometer is an instrument used to measure pressure. Mercury and aneroid are the two most common forms of barometers. A Hygrometer is used to measure humidity, and a thermometer is used to measure temperature.

Q. 36 Beyond the _____, the Himalayas bend sharply to the south and spread along the eastern boundary of India.

Option 1:

Zoji La Pass

Option 2:

Dihang gorge

Option 3:

Bhutan border

Option 4:

Nepal border

Correct Answer:

Dihang gorge

Solution:

The correct answer is **Dihang Gorge**.

The Himalayas' easternmost border is marked by the Namcha Barwa mountain and Brahmaputra River. The Himalayas begin to spread along India's eastern border beyond the Dihang Gorge before bending sharply to the south. Beyond the Dihang Gorge, the Himalayas curve sharply to the south and extend outward to form the eastern border of the nation. The Eastern Hills, or Purvanchal Hills, are their official name.

Q. 37 How many KB is equal to 1 GB?

Option 1:

1024

Option 2:

256 x 1024

Option 3:

1024 x 1024

Option 4:

1024 x 1024 x 128

Correct Answer:

1024 x 1024

Solution:

The correct answer is **1024 x 1024**.

1 gigabyte (GB) contains 1024 megabytes (MB).

The formula used to compute is - 1 GB = 1024 MB; 1 MB = 1024 KB

As a result, 1 GB is $1024 * 1024$ KB = 1048576 KB.

Q. 38 Due to increased weapon launching missions by North Korea, which country has launched a spy satellite to monitor it?

Option 1:

South Korea

Option 2:

U.S.A

Option 3:

China

Option 4:

Japan

Correct Answer:

Japan

Solution:

The correct answer is **Japan**.

North Korea is officially known as the Democratic People's Republic of Korea (DPRK). It is located in East Asia on the Korean Peninsula. 38th parallel is the official demilitarized zone and the border between North Korea, and South Korea. Japan launched a spy satellite to check on the military activities of North Korea.

Q. 39 Which of the following is the world's top environmental conservation award?

Option 1:

The Golden Bear Award

Option 2:

The Golden Panda Award

Option 3:

The Golden Globe Award

Option 4:

The Golden Palms Award

Correct Answer:

The Golden Panda Award

Solution:

The correct answer is **The Golden Panda Award**.

The Gold Panda Award is the highest conservation honour bestowed by the World-Wide Fund for Nature (WWF), the world's foremost environmental organization. The World-Wide Fund for Nature is a non-profit international organization dedicated towards the preservation and conservation of nature and its various species. It was founded on April 29, 1961, and is headquartered in Gland, Switzerland.

Q. 40 The term 'Gambit' is associated with which of the following sports?

Option 1:

Basketball

Option 2:

Chess

Option 3:

Boxing

Option 4:

Golf

Correct Answer:

Chess

Solution:

The answer is **Chess**.

The term gambit is related to the game of chess. The gambit is a chess opening in which a player, usually white, makes material sacrifices in the hope of gaining an advantageous position. Chess terminology includes "Gambit," "Bishop," and "Checkmate."

Q. 41 **Directions:** A * B means multiply A by B, A @ B means divide A by B, A ? B means add B to A, and A = B means subtract B from A. Then, find the value of –
 $10 * 10 = 5 * 10 ? 50 @ 10$

Option 1:

100

Option 2:

45

Option 3:

1000

Option 4:

55

Correct Answer:

55

Solution:**Given:**

$$10 * 10 = 5 * 10 ? 50 @ 10$$

After replacing the symbols with the mathematical signs as per the direction, the equation becomes –
 $10 \times 10 - 5 \times 10 + 50 \div 10$
 $= 10 \times 10 - 5 \times 10 + 5$

$$= 100 - 50 + 5$$
$$= 55$$

Hence, the **fourth option** is correct.

Q. 42 **Directions:** In the following question, select the related word from the given alternatives.
Cure : Disease :: Heal : ?

Option 1:
Illness

Option 2:
Injury

Option 3:
Recover

Option 4:
Sick

Correct Answer:
Injury

Solution:

Given:

Cure : Disease :: Heal : ?

The cure is used for the recovered state of any disease.

Similarly, heal is the term used when one recovers from an injury.

Hence, the **second option** is correct.

Q. 43 **Directions:** In the following question, find the odd letter cluster from the given alternatives.

Option 1:
AOU

Option 2:
EOI

Option 3:
UIE

Option 4:

ALO

Correct Answer:

ALO

Solution:

Let's check the options –

First option: AOU; A, O, and U are all vowels.

Second option: EOI; E, O, and I are all vowels.

Third option: UIE; U, I, and E are all vowels.

Fourth option: ALO; A and O are vowels but L is not a vowel.

So, only in the fourth option two vowels and one consonant are present instead of three vowels. Hence, the **fourth option** is correct.

Q. 44 **Directions:** One morning, Raju walked towards the sun. After some time, he turned left and again to his left. Which direction is he facing?

Option 1:

North

Option 2:

South

Option 3:

East

Option 4:

West

Correct Answer:

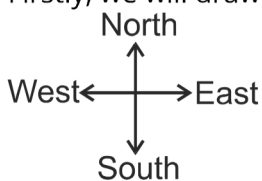
West

Solution:

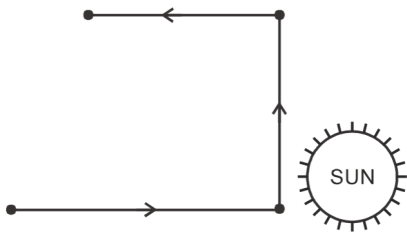
Given:

One morning, Raju walked towards the sun, i.e., he walked towards the east direction. (Because in the morning, the Sun is in the east direction.)

Firstly, we will draw the diagram as per the given instructions –



Now, we have to find which direction Raju is facing.



So, Raju is facing towards the west direction. Hence, the **fourth option** is correct.

Q. 45 **Directions:** The weights of the 4 boxes are 90, 40, 80, and 50 kilograms. Which of the following cannot be the total weight, in kilograms, of any combination of these boxes, and in a combination a box can be used only once?

Option 1:

200

Option 2:

260

Option 3:

180

Option 4:

170

Correct Answer:

200

Solution:

Given:

The weights of 4 boxes are 90, 40, 80, and 50 kilograms.

The total weight of all possible combinations of boxes is as follows –

$90 + 40 = 130$; $90 + 80 = 170$; $90 + 50 = 140$; $40 + 80 = 120$;

$40 + 50 = 90$; $80 + 50 = 130$; $90 + 40 + 80 = 210$;

$90 + 40 + 50 = 180$; $90 + 80 + 50 = 220$; $40 + 80 + 50 = 170$;

$40 + 80 + 50 + 90 = 260$

Therefore, there is no total weight of 200 kilograms in any combination. Hence, the **first option** is correct.

Q. 46 **Directions:** The age of Dr. Pandey is four times the age of his son. After 10 years, the age of Dr. Pandey will be twice the age of his son. What is the present age of Dr. Pandey's son?

Option 1:

4 years

Option 2:

5 years

Option 3:

6 years

Option 4:

8 years

Correct Answer:

5 years

Solution:

Let Dr. Pandey's present age be A, and Dr. Pandey's son's present age be B.

As per the given information,

Dr. Pandey's age is four times the age of his son $\Rightarrow A = 4 \times B = 4B$

After 10 years, Dr. Pandey's age = $(A + 10)$, and Dr. Pandey's son's age = $(B + 10)$

Also, after 10 years, Dr. Pandey's age will be twice his son's age, i.e., $(A + 10) = 2 \times (B + 10)$

As, $A = 4B$; therefore, $(A + 10) = 2 \times (B + 10)$ can be written as -

$$\Rightarrow (4B + 10) = 2 \times (B + 10)$$

$$\Rightarrow 4B + 10 = 2B + 20$$

$$\Rightarrow 4B - 2B = 20 - 10$$

$$\Rightarrow 2B = 10 \Rightarrow B = 10 \div 2$$

$$\Rightarrow B = 5$$

So, Dr. Pandey's son's present age is 5 years. Hence, the **second option** is correct.

Q. 47 **Directions:** If the third day of the month is Tuesday, which of the following would be the 25th day of that month?

Option 1:

Tuesday

Option 2:

Monday

Option 3:

Wednesday

Option 4:

Sunday

Correct Answer:

Wednesday

Solution:

Given:

The third day of the month is Tuesday.

Total number of days of that month = $25 - 3 = 22$

On dividing 22 by 7, we get 1 as the remainder.

Tuesday + 1 day = Wednesday

So, the 25th day of that month is Wednesday. Hence, the **third option** is correct.

Q. 48 **Directions:** Which one set of letters/numbers when sequentially placed at the gaps in the given letter series shall complete it?

H_JH_IJHHI_HH_JH

Option 1:

IHJI

Option 2:

HIHI

Option 3:

IHIJ

Option 4:

HJHJ

Correct Answer:

IHJI

Solution:

Given:

H_JH_IJHHI_HH_JH

To fill the series we have to divide the series – H_JH / _IJH / HI_H / H_JH

Let's check each option –

First option: IHJI; H_IJH / H_IJH / H_IJH / H_IJH (HIJH is repeated in the series.)

Second option: HIHI; H_HJH / I_IJH / H_IHJH / H_IJH (No repeated pattern has been found.)

Third option: IHIJ; H_IJH / H_IJH / H_IHJH / H_IJH (No repeated pattern has been found.)

Fourth option: HJHJ; H_HJH / J_IJH / H_IHJH / H_IJH (No repeated pattern has been found.)

So, the series becomes→HIJHHIJHHIJHHIJH. Hence, the **first option** is correct.

Q. 49 **Directions:** In a certain code, **GO HOME** is written as **TA NA**, and **NICE LITTLE HOME** is written as **NA JA PA**. How is **GO** written in that code?

Option 1:

TA

Option 2:

NA

Option 3:

JA

Option 4:

NA or TA

Correct Answer:

TA

Solution:

Given:

1. GO HOME→TA NA

2. NICE LITTLE HOME→NA JA PA

By comparing both the coded sentences, we find that –

In sentences 1 and 2, **HOME** and **NA** are common.

The remaining word and code in sentence 1 are **GO** and **TA**; in sentence 2 are **NICE/LITTLE** and **JA/PA**.

Finally, HOME→NA; GO→TA; NICE/LITTLE→JA/PA

So, **GO** will be coded as **TA**. Hence, the **first option** is correct.

Q. 50 **Directions:** A is D's brother. D is B's father. B and C are sisters. How is C related to A?

Option 1:

Cousin

Option 2:

Niece

Option 3:

Aunt

Option 4:

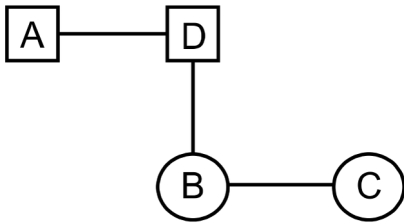
Nephew

Correct Answer:

Niece

Solution:

As per the given information, the family tree will be as follows –



Here, the quadrilateral represents the male, and the circular figure represents the female in the figure.

So, from the above family tree, C is the niece of A. Hence, the **second option** is correct.

Q. 51 **Directions:** In the following questions a word is followed by four other words, one of which cannot be formed by using the letters of the given word. Find this word.
PHOTOSYNTHETIC

Option 1:

THOSE

Option 2:

SCENT

Option 3:

PRONE

Option 4:

COTTON

Correct Answer:

PRONE

Q. 52 In the following question, a statement is followed by four inferences. Select the one that is most appropriate.

All the books written by Prabhakar are textbooks. Some of his books are published by Pitamber Publishing Company.

Option 1:

All the books published by Pitamber Publishing Company have been written by Prabhakar

Option 2:

Pitamber Publishing Company publishes some critical essays written by Prabhakar

Option 3:

Some textbooks written by Prabhakar are published by Pitamber Publishing Company

Option 4:

Pitamber Publishing Company only publishes textbooks

Correct Answer:

Some textbooks written by Prabhakar are published by Pitamber Publishing Company

Q. 53 **Directions:** Consider the statements to be true and decide which of the given conclusions/assumptions can be drawn from the given statements.

Statements :

All states having dams face no water problem.

One of the states has no dam.

Conclusions :

I. It may be facing a water problem.

II. Dams solve the water problem.

Option 1:

Only conclusion I follows

Option 2:

Only conclusion II follows

Option 3:

Both conclusion I and conclusion II follow

Option 4:

Neither conclusion I nor conclusion II follows

Correct Answer:

Both conclusion I and conclusion II follow

Solution:

Conclusion I: It may be facing a water problem.

The statement says that those states that have dams do not face water problems. As such, it can be said that previously they were facing water problems, that is why, dams have been constructed. Hence, this conclusion follows from the above statements.

Conclusion II: Dams solve the water problem.

From the above statements, it can be said that after dams have been built, the states are no longer facing water problems. Hence, this conclusion follows from the above statement.

Therefore, both conclusion I and conclusion II follow. Hence, the **third option** is correct.

Q. 54 **Directions:** Consider the statements to be true and decide which of the given conclusions/assumptions can be drawn from the given statements.

Statements:

When water is cooled, it turns into ice.

When water is heated, it turns into steam.

Conclusions:

I. Water is a solid.

II. Water is a gas.

Option 1:

Only conclusion I follows

Option 2:

Only conclusion II follows

Option 3:

Both conclusions I and II follow

Option 4:

Neither conclusion I nor II follows

Correct Answer:

Neither conclusion I nor II follows

Solution:

Conclusion I: Water is a solid.

The given statements do not state that water is a solid. It states that when water is cooled, turns into ice. The statement mentions the formation and not what it is.

Conclusion II: Water is a gas.

The given statements do not state that the water is a gas. It states that water when heated, turns into steam. The statement mentions the formation and not what it is.

So, neither conclusion I nor II follows. Hence, the **fourth option** is correct.

Q. 55 **Directions:** Consider the given statements to be true and decide which of the given conclusions or assumptions can be drawn from the given statements.

Statements:

All stenographers are lazy.

Some men are stenographers.

Conclusions:

I. All lazy are men.

II. Some men are lazy.

Option 1:

Only Conclusion I follows

Option 2:

Only Conclusion II follows

Option 3:

Both Conclusion I and Conclusion II follow

Option 4:

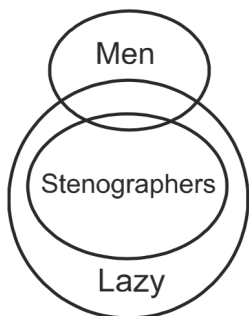
Neither Conclusion I nor Conclusion II follows

Correct Answer:

Only Conclusion II follows

Solution:

The possible Venn diagram according to the given statements is as follows –



Let's analyse the conclusions –

Conclusion I: All lazy are men – From the Venn diagram, it is evident that the circles representing men and lazy overlap each other and have a part of their area in common. So, from this, it can be concluded that some lazy are men. Therefore, this conclusion does not follow.

Conclusion II: Some men are lazy – From the Venn diagram, it is evident that the circles representing men and lazy overlap each other and have a part of their area in common. So, from this, it can be concluded that some lazy are men. Therefore, this conclusion follows.

So, only Conclusion II follows. Hence, the **second option** is correct.

Q. 56 **Directions:** A is shorter than B but taller than C. D is shorter than A but taller than C. E is shorter than B but taller than A. Who is the shortest person?

Option 1:

B

Option 2:

C

Option 3:

A

Option 4:

D

Correct Answer:

C

Solution:

Given:

A is shorter than B but taller C.

$C < A < B$

D is shorter than A but taller than C.

$C < D < A$

E is shorter than B but taller than A.

$A < E < B$

By concluding all the given information, we have –

$C < D < A < E < B$

So, C is the shortest person. Hence, the **second option** is correct.

Q. 57 **Directions:** A is taller than B, C is taller than A. D is taller than E but shorter than B. Who is the tallest?

Option 1:

C

Option 2:

A

Option 3:

D

Option 4:

B

Correct Answer:

C

Solution:

Given:

A is taller than B; $A > B$

C is taller than A; $C > A$

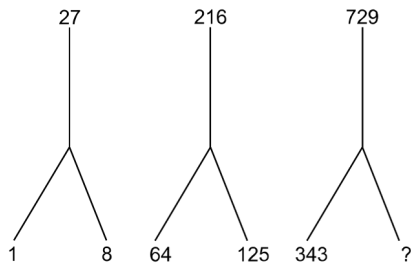
D is taller than E but shorter than B; $B > D > E$

By concluding all the given information, we have –

$E < D < B < A < C$

So, C is the tallest. Hence, the **first option** is correct.

Q. 58 **Directions:** In the following question, select the missing number from the given responses.



Option 1:

432

Option 2:

501

Option 3:

512

Option 4:

332

Correct Answer:

512

Solution:

The numbers given in each figure are the cubes of the consecutive natural numbers.

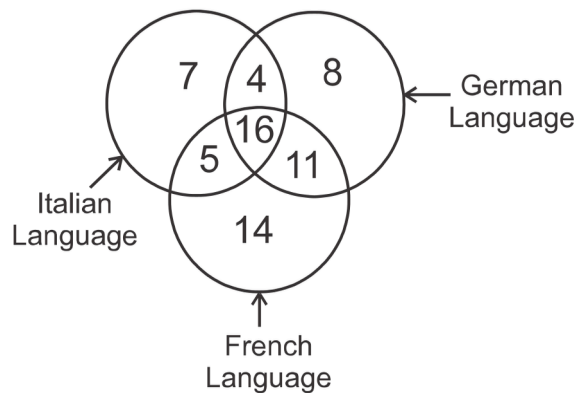
In the first figure $\rightarrow (1)^3 = 1; (2)^3 = 8; (3)^3 = 27$

In the second figure $\rightarrow (4)^3 = 64; (5)^3 = 125; (6)^3 = 216$

In the third figure $\rightarrow (7)^3 = 343; (8)^3 = 512; (9)^3 = 729$

So, 512 is the missing number. Hence, the **third option** is correct.

Q. 59 **Directions:** In the given figure, how many people speak only Italian and only French language?



Option 1:

21

Option 2:

16

Option 3:

27

Option 4:

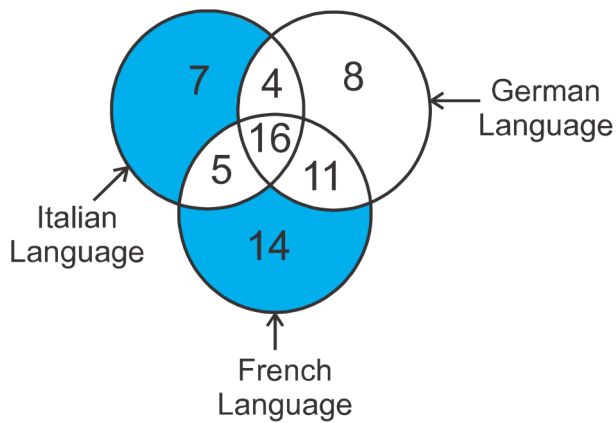
20

Correct Answer:

21

Solution:

In the diagram, the shaded parts represent the regions that represent only the Italian and French languages separately.

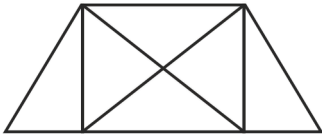


The number of people that speak only Italian is the region that does not overlap with any other region. So, the number of people who speak only Italian is 7.

Similarly, the number of people who speak only French is 14.

The number of people who speak only Italian and only French is $14 + 7 = 21$. Hence, the **first option** is correct.

Q. 40 **Directions:** How many triangles are there in the given figure?



Option 1:

8

Option 2:

10

Option 3:

12

Option 4:

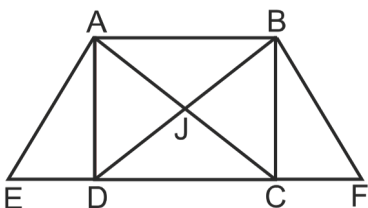
14

Correct Answer:

12

Solution:

The given figure can be labeled as shown below –



There are a total of 12 triangles in the above figure. They are ADE, BCF, AJD, DJC, CJB, BJA, ADC, DCB, CBA, BAD, EAC, DBF.

Hence, the **third option** is correct.