

MOCK TEST 2

Q. 1 The sum of three consecutive integers is 51. The middle one is:

Option 1:

14

Option 2:

15

Option 3:

16

Option 4:

17

Correct Answer:

17

Solution:

Let the three consecutive integers be $x - 1, x, x + 1$ whose sum equals 51.

According to the question,

$$x - 1 + x + x + 1 = 51$$

$$3x = 51$$

$$\Rightarrow x = \frac{51}{3} = 17$$

So, the middle number = $x = 17$

Hence, the correct answer is 17.

Q. 2 The least number that must be subtracted from 1294 such that the obtained number when divided by 9, 11, and 13, leaves in each case the same remainder of 6, is:

Option 1:

2

Option 2:

3

Option 3:

1

Option 4:

4

Correct Answer:

1

Solution:

The LCM of 9, 11, and 13 is 1287.

When 1294 is divided by 1287, the quotient is 1 and the remainder is 7.

Here, we need the remainder in each case to be 6 and so, subtract $(7 - 6) = 1$ from 1294.

Hence, the correct answer is 1.

Q. 3 By which number should 0.022 be multiplied so that the product becomes 66?

Option 1:

3000

Option 2:

3200

Option 3:

4000

Option 4:

3600

Correct Answer:

3000

Solution:

Let the number be x .

According to the question,

$$x \times 0.022 = 66$$

$$x \times \frac{22}{1000} = 66$$

$$x = \frac{1000}{22} \times 66$$

$$\Rightarrow x = 3000$$

Hence, the correct answer is 3000.

Q. 4 The sum of a fraction and 4 times its reciprocal is $\frac{13}{3}$. What is the fraction?

Option 1: $\frac{4}{3}$

Option 2:

$$\frac{3}{4}$$

Option 3:

$$\frac{5}{4}$$

Option 4:

$$\frac{4}{5}$$

Correct Answer:

$$\frac{4}{3}$$

Solution:

Let the fraction be a .

Given:

$$a + \frac{4}{a} = \frac{13}{3}$$

After solving this, we get

$$(a^2 + 4) \times 3 = 13a$$

$$3a^2 - 13a + 12 = 0$$

$$3a^2 - 9a - 4a + 12 = 0$$

$$3a(a - 3) - 4(a - 3) = 0$$

$$(a - 3)(3a - 4) = 0$$

$$(a - 3) = 0 \text{ or } (3a - 4) = 0$$

$$\Rightarrow a = 3, \frac{4}{3}$$

So, the fraction = $\frac{4}{3}$

Hence, the correct answer is $\frac{4}{3}$.

Q. 5 The sum of 10 terms of the arithmetic series is 390. If the third term of the series is 19, find the first term:

Option 1:

$$3$$

Option 2:

$$5$$

Option 3:

$$7$$

Option 4:

$$8$$

Correct Answer:

$$3$$

Solution:

Given: The sum of 10 terms of the arithmetic series is 390.

So, $n = 10$

The third term of the series is 19.

Let the first term of the series be a .

We know, sum of arithmetic progression (A.P.) = $\frac{n}{2} [2a + (n - 1)d]$

n^{th} term = $a + (n - 1)d$

So, 3rd term $\Rightarrow a + (3 - 1)d = 19$

$\Rightarrow a + 2d = 19$ -----(1)

Sum of 10 terms = $\frac{10}{2} [2a + (10 - 1)d] = 390$

$\Rightarrow 2a + 9d = 78$ -----(2)

Multiplying 9 with equation (1) and 2 with equation (2), we get,

$\Rightarrow 9a + 18d = 171$ -----(3)

$\Rightarrow 4a + 18d = 156$ -----(4)

Subtracting (4) from (3), we get,

$5a = 15$

$\therefore a = 3$

Hence, the correct answer is 3.

Q. 6 If $\sqrt{3} = 1.732$, then the value of $\frac{9+2\sqrt{3}}{\sqrt{3}}$ is:

Option 1:

7.169

Option 2:

7.196

Option 3:

5.198

Option 4:

7.296

Correct Answer:

7.196

Solution:

Given: $\sqrt{3} = 1.732$

$$\frac{9+2\sqrt{3}}{\sqrt{3}}$$

To eliminate the root from the denominator, multiply and divide by $\sqrt{3}$

$$= \frac{9+2\sqrt{3}}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}}$$

$$= \sqrt{3} \times 9 + \sqrt{3} \times 2\sqrt{3}$$

$$= \frac{\sqrt{3} \times 9 + 6}{3}$$

$$= \frac{3(3\sqrt{3}+2)}{3}$$

$$= 3\sqrt{3} + 2$$

$$= 3 \times 1.732 + 2$$

$$= 7.196$$

Hence the correct answer is 7.196.

Q. 7 The average of two numbers is 8, and the average of the other three numbers is 3. The average of the five numbers is:

Option 1:

2

Option 2:

3

Option 3:

5

Option 4:

6

Correct Answer:

5

Solution:

Given:

The average of two numbers = 8

Average of three numbers = 3

According to the question,

Sum of two numbers = $2 \times 8 = 16$

Sum of three numbers = $3 \times 3 = 9$

Sum of five numbers = $16 + 9 = 25$

Average value = $\frac{\text{Sum of values}}{\text{number of values}}$

Average of five number = $\frac{25}{5}$

Hence, the answer is 5.

Q. 8 Calculate the mean from the following table.

Scores	Frequencies
0-10	2
10-20	4
20-30	12
30-40	21
40-50	6
50-60	3
60-70	2

Option 1:

34.2

Option 2:

33.4

Option 3:

32.6

Option 4:

35.8

Correct Answer:

33.4

Solution:

Scores	Frequencies	Mid Point	Mid Point × Frequencies
0-10	2	5	10
10-20	4	15	60
20-30	12	25	300
30-40	21	35	735
40-50	6	45	270
50-60	3	55	165
60-70	2	65	130

$$\begin{aligned}\text{Mean} &= \frac{\sum (\text{Mid Point} \times \text{Frequencies})}{\sum \text{Frequencies}} \\ &= \frac{10+60+300+735+270+165+130}{2+4+12+21+6+3+2} \\ &= \frac{1670}{50} \\ &= 33.4\end{aligned}$$

Hence, the correct answer is 33.4.

Q. 9 A man gains 20% by selling an article for a certain price. If he sells it at double the price, the percentage of profit will be:

Option 1:

40%

Option 2:

100%

Option 3:

120%

Option 4:

140%

Correct Answer:

140%

Solution:

Let the cost price (CP) be Rs. 100.

Profit = 20%

Selling price (SP) = 100 + 20 = Rs. 120

When the selling price is doubled, $SP \times 2 = (120 \times 2) = \text{Rs. } 240$

New profit = (New SP – CP) = (240 – 100) = Rs. 140

Thus, Profit % = $\frac{140}{100} \times 100 = 140\%$

Hence, the correct answer is 140%.

Q. 10 A trader sold a cycle at a loss of 10%. If the selling price had been increased by Rs. 200, there would have been a gain of 6%. The cost price of the cycle is:

Option 1:

Rs. 1200

Option 2:

Rs. 1205

Option 3:

Rs. 1250

Option 4:

Rs. 1275

Correct Answer:

Rs. 1250

Solution:Let the cost price of the cycle be Rs. x .

$$\text{Selling price when loss is 10\%} = \frac{100 - \text{Loss percentage}}{100} \times \text{Cost price} = \frac{90x}{100}$$

$$\text{Selling Price when profit is 6\%} = \frac{100 + \text{Profit percentage}}{100} \times \text{Cost price} = \frac{106x}{100}$$

$$\text{Difference between the two selling prices} = \frac{106x}{100} - \frac{90x}{100} = \frac{16x}{100}$$

$$\text{So, } \frac{16x}{100} = 200$$

$$\Rightarrow x = \frac{20000}{16}$$

$$\therefore x = \text{Rs. } 1250$$

Hence, the correct answer is Rs. 1250.

Q. 11 The ratio of the present ages of R and S is 11 : 17. 11 years ago, the ratio of their ages was 11 : 20. What is R's present age (in years)?

Option 1:

51

Option 2:

33

Option 3:

22

Option 4:

40

Correct Answer:

33

Solution:Let the present age of R be $11x$, and S be $17x$.

According to the given condition,

$$\frac{11x-11}{17x-11} = \frac{11}{20}$$

$$\Rightarrow 220x - 220 = 187x - 121$$

$$\Rightarrow 33x = 99$$

$$\therefore x = 3$$

Thus, the present age of R = $11 \times 3 = 33$ years

Hence, the correct answer is 33 years.

Q. 12 In an examination, 35% of total students failed in Hindi, 45% failed in English and 20% failed in both. Find the percentage of those students who passed in both subjects.

Option 1:

45%

Option 2:

35%

Option 3:

20%

Option 4:

40%

Correct Answer:

40%

Solution:

Failed in Hindi = 35%

Failed in English = 45%

Failed in both = 20%

$\therefore$ Percentage of students who failed in a minimum of one subject = $(35 + 45) - 20 = 60\%$

Percentage of students who passed in both subjects = $(100 - 60) = 40\%$

Hence, the correct answer is 40%.

Q. 13 Two buses travel to a place at 45 km/hr and 60 km/hr, respectively. If the second bus takes $5\frac{1}{2}$ hours less than the first for the journey, then the length of the journey is:

Option 1:

900 km

Option 2:

945 km

Option 3:

990 km

Option 4:

1350 km

Correct Answer:

990 km

Solution:

Given: The speeds of the two buses are 45 km/hr and 60 km/hr, respectively.

The second bus takes $5\frac{1}{2}$ hours less than the first bus.

Let the length of the journey be x km.

According to the given condition,

$$\Rightarrow \frac{x}{45} - \frac{x}{60} = \frac{11}{2}$$

$$\Rightarrow \frac{4x-3x}{180} = \frac{11}{2}$$

$$\Rightarrow \frac{x}{180} = \frac{11}{2}$$

$$\therefore x = 90 \times 11 = 990 \text{ km}$$

Hence, the correct answer is 990 km.

Q. 14 The area of triangle with vertices A(0, 8), O(0, 0), and B(5, 0) is:

Option 1:

8 sq. units

Option 2:

13 sq. units

Option 3:

20 sq. units

Option 4:

40 sq. units

Correct Answer:

20 sq. units

Solution:

Let $(x_1, y_1) = (0, 8)$

$(x_2, y_2) = (0, 0)$

$(x_3, y_3) = (5, 0)$

Area of a triangle with vertices (x_1, y_1) , (x_2, y_2) , and (x_3, y_3)

$$= \frac{1}{2} [x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$$

$$= \frac{1}{2} [0(0 - 0) + 0(0 - 8) + 5(8 - 0)]$$

$$= \frac{1}{2} [40]$$

$$= 20 \text{ sq. units}$$

Hence, the correct answer is 20 sq. units.

Q. 15 At what point does the line $3x + y = -6$ intercept the x-axis?

Option 1:

(2, 0)

Option 2:

(-2, 0)

Option 3:

(0, -6)

Option 4:

(0, 6)

Correct Answer:

(-2, 0)

Solution:

At an x-intercept, $y = 0$.

So, $3x + 0 = -6$

Solving for x,

$\Rightarrow 3x = -6$

$\Rightarrow x = -2$

So, the required intercept point = (-2, 0)

Hence, the correct answer is (-2, 0).

Q. 16 The radius and the height of the cone are each increased by 20%. Then the volume of the cone increases by:

Option 1:

20%

Option 2:

20.5%

Option 3:

62%

Option 4:

72.8%

Correct Answer:

72.8%

Solution:

Given: The radius and the height of the cone are each increased by 20%.

Let the radius and height of the cone be 10 m.

When radius and height is increased by 20%, then new height and radius = $\frac{120}{100} \times 10 = 12$ m

Volume of cone before increment = $\frac{1}{3}\pi r^2 h$

$$= \frac{1}{3}\pi \times 10^2 \times 10 = \frac{1000}{3}\pi$$

Volume of cone after increment = $\frac{1}{3}\pi r^2 h$

$$= \frac{1}{3}\pi \times 12^2 \times 12 = \frac{1728}{3}\pi$$

Change in percentage = $\frac{\text{Volume after increment} - \text{Volume before increment}}{\text{Volume before increment}} \times 100$

$$= \frac{\frac{1728}{3}\pi - \frac{1000}{3}\pi}{\frac{1000}{3}\pi} \times 100$$

$$= \frac{\frac{(1728-1000)}{3}\pi}{\frac{1000}{3}\pi} \times 100$$

$$= \frac{728}{1000} \times 100$$

$$= 72.8\%$$

Hence, the correct answer is 72.8%.

- Q. 17** An inverted conical-shaped vessel is filled with water to its brim. The height of the vessel is 8 cm and the radius of the open end is 5 cm. When a few solid spherical metallic balls each of radius $\frac{1}{2}$ cm are dropped in the vessel, 25% water is overflowed. The number of balls is:

Option 1:

100

Option 2:

400

Option 3:

200

Option 4:

150

Correct Answer:

100

Solution:

Given: Height of the vessel = 8 cm

Radius = 5 cm.

Volume of the conical vessel = $\frac{1}{3}\pi r^2 h$

$$= \frac{1}{3} \times \pi \times 5^2 \times 8$$

$$= \frac{200}{3}\pi \text{ cm}^3$$

The volume of 25% of water = $\frac{1}{4} \times \frac{200}{3} \pi = \frac{50}{3} \pi \text{ cm}^3$

The volume of the spherical metallic ball of the radius $R = \frac{4}{3} \pi R^3$
 $= \frac{4}{3} \times \pi \times \left(\frac{1}{2}\right)^3 = \frac{\pi}{6} \text{ cm}^3$

The number of balls required = $\frac{\frac{50}{3} \pi}{\frac{\pi}{6}} = 100$

Hence, the correct answer is 100.

Q. 18 If the radius of a cylinder is increased by 25%, by how much percentage the height must be reduced, so that the volume of the cylinder remains the same.

Option 1:

36

Option 2:

56

Option 3:

64

Option 4:

46

Correct Answer:

36

Solution:

Given: The radius of a cylinder is increased by 25%.

Volume of the cylinder = $\pi r^2 h$

Let h be the initial height, r be the initial radius, H be the final height and the new radius will be $\frac{125}{100} r = \frac{5}{4} r$.

According to the question,

$$\pi \times r^2 \times h = \pi \times \left(\frac{5}{4} r\right)^2 \times H$$

$$\Rightarrow h = \frac{25}{16} \times H$$

$$\Rightarrow \frac{h}{H} = \frac{25}{16}$$

The decrease in percentage in the height is $\frac{(h-H)}{h} \times 100$

$$= \frac{(25-16)}{25} \times 100$$

$$= 9 \times 4 = 36\%$$

Hence, the correct answer is 36.

Q. 19 A solid cone of height 36 cm and radius of base 9 cm is melted to form a solid cylinder of radius 9 cm and height 9 cm. What percentage of the material is wasted in this process?

Option 1:

25

Option 2:

0

Option 3:

5

Option 4:

10

Correct Answer:

25

Solution:

Given: Height of the cone = 36 cm

Radius of base = 9 cm

Radius of cylinder = 9 cm

Height = 9 cm

The volume of cone = $\frac{1}{3}\pi r^2 h$

$$= \frac{1}{3} \times \pi \times 9^2 \times 36 = 972\pi \text{ cm}^3$$

Volume of cylinder = $\pi r^2 h$

$$= \pi \times 9^2 \times 9 = 729\pi \text{ cm}^3$$

The volume of waste = volume of cone – volume of cylinder

$$= 972\pi - 729\pi = 243\pi$$

The material wasted = $\frac{\text{volume of cone} - \text{volume of cylinder}}{\text{volume of cone}} \times 100$

$$= \frac{243\pi}{972\pi} \times 100 = 25\%$$

Hence, the correct answer is 25.

Q. 20 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. 21 The _____ were the successors of Timur, the ruler of Iran, Iraq and modern-day Turkey.

Option 1:

Rajputs

Option 2:

Khaljis

Option 3:

Mughals

Option 4:

Tughlaqs

Correct Answer:

Mughals

Solution:

The correct answer is the **Mughals**.

The Mughals' ancestors came from two distinguished royal families. Genghis Khan, who united the Mongol tribes in China and Central Asia to form the Mongol Empire, was a relative on the maternal side. On the paternal side, they were related to Timur, whose empire spanned modern Turkey, Iraq and Iran.

Q. 22 Swarnjayanti Gram Swarozgar Yojana (SGSY) has been restructured as:

Option 1:

Prime Minister Rozgar Yojana

Option 2:

National Rural Livelihood Mission

Option 3:

Jawahar Gram Samridhi Yojana

Option 4:

Sampoorna Grameen Rozgar Yojana

Correct Answer:

National Rural Livelihood Mission

Solution:

The correct answer is the **National Rural Livelihoods Mission**.

The National Rural Livelihood Mission (NRLM) was initiated by the Ministry of Rural Development to empower economically disadvantaged families residing below the poverty line in rural areas by facilitating self-employment opportunities. The program is financially supported by the central government. The guidelines encompass the establishment of haats, address credit-related concerns and provide comprehensive information about the scheme, including its objectives, funding mechanisms, target beneficiaries and more. The scheme has been rebranded as the **National Rural Livelihoods Mission** (NRLM).

Q. 23 Which country became the first to recognise "orphanage trafficking" as a form of modern slavery?

Option 1:

Canada

Option 2:

Spain

Option 3:

Australia

Option 4:

Japan

Correct Answer:

Australia

Solution:

The correct answer is **Australia**.

Australia has recently approved the modern slavery bill in both houses of its Parliament. This paves the way for a significant legal change, making Australia the first country globally to officially acknowledge orphanage trafficking as a form of modern-day slavery.

Q. 24 The Chairman of the National Disaster Management Authority (NDMA) is

Option 1:

National Security Advisor

Option 2:

Prime Minister of India

Option 3:

Chief of DRDO

Option 4:

Home Minister of India

Correct Answer:

Prime Minister of India

Solution:

The correct answer is **Prime Minister of India**.

With the help of a comprehensive, proactive, technology-driven, and sustainable development strategy, it hopes to make India safer and more disaster-resistant. The Disaster Management Act was passed by the Indian government on December 23, 2005. It called for the establishment of the Prime Minister-led National Disaster Management Authority (NDMA), and Chief Minister-led State Disaster Management Authorities (SDMAs).

Q. 25 In India, which of the following taxes is levied by the state government?

Option 1:

Excise duty on liquor

Option 2:

Capital gains tax

Option 3:

Customs tax

Option 4:

Corporation tax

Correct Answer:

Excise duty on liquor

Solution:

The correct answer is **Excise duty on liquor**.

State excise duty is a tax charged by Indian state governments on the production and sale of alcoholic drinks, tobacco products and other designated items. The precise commodities subject to state excise duty differ from one state to the next. The state excise tax is a significant source of revenue for state governments.

Q. 26 The GST (goods and service tax) passed by the government will be levied on which of the following products?

Option 1:

Petroleum and crude oil

Option 2:

Tobacco

Option 3:

Natural gas

Option 4:

Aviation turbine fuel

Correct Answer:

Tobacco

Solution:

The correct answer is **Tobacco**.

The GST rate for all tobacco goods is 28%. The GSTC will suggest a date for the implementation of GST on five petroleum products (crude oil, petrol, diesel, ATF and natural gas). The Goods and Services Tax (GST) is a unified tax system that replaced several indirect taxes collected by the Central and State Governments. The Central and State Governments share the jurisdiction to impose and collect taxes on goods and services under GST.

Q. 27 Which monument is known as the 'Dreams in Stones'?

Option 1:

Charminar

Option 2:

Ajanta Caves

Option 3:

Sanchi Stupa

Option 4:

Panch Mahal

Correct Answer:

Panch Mahal

Solution:

The correct answer is **Panch Mahal**.

One of Fatehpur Sikri's most well-known structures is the Panch Mahal, also known as the Dream in Stone. It was constructed by Akbar. Akbar ordered the construction of the Panch Mahal, also known as the "Five Level Palace". The fact that this building, made of Sikri sandstone, is close to the Zenana quarters lends support to the idea that it was used for recreation and relaxation.

Q. 28 What is Gol Gumbaz?

Option 1:

Mausoleum of Hyder Ali

Option 2:

Mausoleum of Aurangzeb

Option 3:

Mausoleum of Chand Bibi

Option 4:

Mausoleum of Mohammed Adil Shah

Correct Answer:

Mausoleum of Mohammed Adil Shah

Solution:

The correct answer is the **Mausoleum of Mohammed Adil Shah**.

Gol Gumbaz is the most well-known landmark. It is Mohammed Adil Shah's tomb which is the second-largest dome ever constructed. The central chamber of this monument, where each sound is amplified seven times, is particularly captivating. This wonder of architecture was constructed in 1656.

Q. 29 French Revolution broke out in the year?

Option 1:

1917

Option 2:

1911

Option 3:

1789

Option 4:

1790

Correct Answer:

1789

Solution:

The correct answer is **1789**.

The **French Revolution** was a time of profound social and political transformation in France that affected not just that country, but also the entire Europe. The Revolution also brought about the establishment of many modern democratic principles, such as citizenship and division of powers.

Q. 30 The first country to make the constitution is _____.

Option 1:

India

Option 2:

England

Option 3:

USA

Option 4:

Sri Lanka

Correct Answer:

USA

Solution:

The correct option is the **USA**.

A legally sanctified document called the constitution contains the fundamental tenets that guide the government. The United States of America created the first constitution ratified on June **21, 1788**. The text established a standard for republicanism and codified subsequent constitutions.

Q. 31 The Constitution

Option 1:

is silent on the president's re-election to the office.

Option 2:

allows the re-election of a person to the president's post.

Option 3:

restricts a person from remaining president for only two terms.

Option 4:

has been amended to allow a person only one term as president.

Correct Answer:

allows the re-election of a person to the president's post.

Solution:

The correct answer is **allows the re-election of a person to the president's post.**

The Constitution establishes a federal, unitary, parliamentary form of government with particular elements. A person who currently holds or has previously held the office of president is eligible for re-election to that position, subject to the other provisions of this constitution.

Q. 32 Which type of democracy do we follow in India?

Option 1:

Direct

Option 2:

Presidential

Option 3:

Representative

Option 4:

Dictatorship

Correct Answer:

Representative

Solution:

The correct answer is **Representative.**

Democracy can take one of two forms. The first type of democracy is direct democracy, and the second and more popular type is representative democracy. A representative democracy exists in India. India practices indirect democracy. In an indirect democracy, citizens are represented by elected representatives. The term

representative democracy is also used.

Q. 33 The Jammu and Kashmir state legislative Assembly has a tenure of

Option 1:

six years

Option 2:

five years

Option 3:

four years

Option 4:

seven years

Correct Answer:

five years

Solution:

The answer is **five years**.

After the passage of the Jammu and Kashmir Reorganisation Act, 2019, the state of Jammu and Kashmir was bifurcated into the Union Territory of Jammu & Kashmir and Ladakh, and Article 370 of the Indian constitution stands abrogated.

Earlier, the legislative assembly of the state had a tenure of six years but is now reduced to five years. Now, in Jammu & Kashmir, the total number of assembly seats is 90, of which 43 are marked for Jammu and 47 are for Kashmir.

Q. 34 _____ is separated from India by a narrow channel of Sea formed by Palk Strait and the Gulf of Mannar.

Option 1:

Sri Lanka

Option 2:

Myanmar

Option 3:

Bangladesh

Option 4:

Pakistan

Correct Answer:

Sri Lanka

Solution:

The correct answer is **Sri Lanka**.

Sri Lanka and India are separated by a small body of water called the Palk Strait and the Gulf of Mannar. The Gulf of Mannar and the Palk Strait cut off Sri Lanka from India. The Palk Strait separates the Jaffna peninsula in Sri Lanka from the Indian state of Tamil Nadu. It is named after Madras Governor Robert Palk and has a length of 137 km with a minimum depth of 9.1 metres. The southern and western boundaries of the Palk Strait are formed by Pamban Island, Adam's Bridge, and the Gulf of Mannar, respectively.

Q. 35 The land mass of India has an area of _____ million square km.

Option 1:

1.28

Option 2:

2.28

Option 3:

3.28

Option 4:

4.28

Correct Answer:

3.28

Solution:

The correct answer is **3.28**.

India's land area is 3.28 million square kilometres. India is the seventh-largest country on earth in terms of area and the largest one in terms of population. India has a total land boundary of about 15,200 km, of which India shares its land boundary with Bangladesh.

Q. 36 According to the Malthusian theory of population-

Option 1:

Population increases in geometric ratio and food supply increases in arithmetic ratio.

Option 2:

Population increases in arithmetic ratio and food supply increases in geometric ratio.

Option 3:

Population increases in a harmonic mean and food supply increases in a geometric ratio.

Option 4:

Population increases in a harmonic ratio and food supply increases in an arithmetic ratio.

Correct Answer:

Population increases in geometric ratio and food supply increases in arithmetic ratio.

Solution:

The correct option is **Population increases in geometric ratio and food supply increases in an arithmetic ratio.**

The Malthusian theory of population, proposed by Thomas Malthus in the late 18th century, argued that population tends to increase at a geometric rate (exponentially), meaning it doubles, triples or multiplies at a faster pace, while the production of food and resources tends to increase at an arithmetic rate (linearly), meaning it grows at a more constant, slower pace.

Q. 37 Postage Meter was invented by

Option 1:

Fyodor Pirotsky

Option 2:

Arthur Pitney

Option 3:

Fritz Pfleumer

Option 4:

Stephen Perry

Correct Answer:

Arthur Pitney

Solution:

The correct option is **Arthur Pitney.**

The Postage Meter, a significant invention, was pioneered by American entrepreneur and inventor Arthur Pitney. On December 9, 1901, Pitney formally filed a patent application in Stamford, Connecticut, marking the inception of the world's inaugural Postage Meter.

Q. 38 Who amongst the following wrestlers has been the recipient of the Rajiv Gandhi Khel Ratna Award?

Option 1:

Vijender Singh

Option 2:

Sushil Kumar

Option 3:

Anand Kumar Singh

Option 4:

Zorawar Singh Faujdar

Correct Answer:

Sushil Kumar

Solution:

The answer is **Sushil Kumar**.

Sushil Kumar became the first Indian to win two Olympic medals for an independent India. He got the Rajiv Gandhi Khel Ratna Award in 2009. Now, the name of the Rajiv Gandhi Khel Ratna Award has been changed to the Major Dhyan Chand Khel Ratna Award.

Q. 39 The term "Rollin" is used in

Option 1:

Cricket

Option 2:

Tennis

Option 3:

Hockey

Option 4:

Golf

Correct Answer:

Hockey

Solution:

The answer is **Hockey**.

Rollin is a term associated with hockey, and it refers to the return of the ball to play after it has crossed the touchline. Major Dhyan Chand was one of the greatest hockey players, not only in India but in the world. The highest sports award in India is also named after Major Dhyan Chand.

Q. 40 Prince of Wales Cup is associated with _____.

Option 1:

Rugby

Option 2:

Golf

Option 3:

Polo

Option 4:

Chess

Correct Answer:

Golf

Solution:

The answer is **Golf**.

There are other famous cups related to the game, such as the Bombay Gold Cup, the Beighton Cup, the Walker Cup, and the Masters, among others. Trophies related to other games include the Ezra Cup and Prithi Singh Cup in Polo, the Lord Derby Cup in rugby, and the Sinquefield Cup in chess.

Q. 41 **Directions:** In the following question, correct the given equation by interchanging two numbers.

$$8 \times 3 \div 4 + 9 - 5 = 16$$

Option 1:

3 and 4

Option 2:

4 and 8

Option 3:

5 and 3

Option 4:

5 and 9

Correct Answer:

5 and 3

Solution:**Given:**

$$8 \times 3 \div 4 + 9 - 5 = 16$$

Let's check the options –

First option: 3 and 4

$$\Rightarrow 8 \times 4 \div 3 + 9 - 5 = 16$$

Solving the L.H.S. of the equation –

$$= 8 \times 4 \div 3 + 9 - 5$$

$$= 8 \times 1.33 + 9 - 5$$

$$= 10.64 + 9 - 5$$

$$= 14.64 \neq 16$$

Second option: 4 and 8

$$\Rightarrow 4 \times 3 \div 8 + 9 - 5 = 16$$

Solving the L.H.S. of the equation –

$$= 4 \times 3 \div 8 + 9 - 5$$

$$= 4 \times 0.375 + 9 - 5$$

$$= 1.5 + 9 - 5$$

$$= 10.5 - 5$$

$$= 5.5 \neq 16$$

Third option: 5 and 3

$$\Rightarrow 8 \times 5 \div 4 + 9 - 3 = 16$$

Solving the L.H.S. of the equation –

$$= 8 \times 5 \div 4 + 9 - 3$$

$$= 8 \times 1.25 + 9 - 3$$

$$= 10 + 9 - 3$$

$$= 19 - 3$$

$$= 16$$

Fourth option: 5 and 9

$$\Rightarrow 8 \times 3 \div 4 + 5 - 9 = 16$$

Solving the L.H.S. of the equation –

$$= 8 \times 3 \div 4 + 5 - 9$$

$$= 8 \times 0.75 + 5 - 9$$

$$= 6 + 5 - 9$$

$$= 11 - 9$$

$$= 2 \neq 16$$

Only the third option satisfies the given equation. Hence, the **third option** is correct.

Q. 42 **Directions:** In the following question, correct the equation by interchanging the two signs.

$$6 \div 17 \times 51 + 6 - 12 = -4$$

Option 1:

$\times$ and $\div$

Option 2:

$+$ and $\div$

Option 3:

$+$ and $-$

Option 4:

$-$ and $\div$

Correct Answer:

$\times$ and $\div$

Solution:

Given:

$$6 \div 17 \times 51 + 6 - 12 = -4$$

Let's check the options –

First option: $\times$ and $\div$

$$\Rightarrow 6 \times 17 \div 51 + 6 - 12 = -4$$

Solving the L.H.S. of the equation –

$$= 6 \times 17 \div 51 + 6 - 12$$

$$= 2 + 6 - 12$$

$$= 8 - 12$$

$$= -4$$

Second option: $+$ and $\div$

$$\Rightarrow 6 + 17 \times 51 \div 6 - 12 = -4$$

Solving the L.H.S. of the equation –

$$= 6 + 17 \times 51 \div 6 - 12$$

$$= 6 + 17 \times 8.5 - 12$$

$$= 6 + 144.5 - 12$$

$$= 150.5 - 12$$

$$= 138.5 \neq -4$$

Third option: $+$ and $-$

$$\Rightarrow 6 \div 17 \times 51 - 6 + 12 = -4$$

Solving the L.H.S. of the equation –

$$= 6 \div 17 \times 51 - 6 + 12$$

$$= 18 - 6 + 12$$

$$= 30 - 6$$

$$= 24 \neq -4$$

Fourth option: $-$ and $\div$

$$\Rightarrow 6 - 17 \times 51 + 6 \div 12 = -4$$

Solving the L.H.S. of the equation $-$

$$= 6 - 17 \times 51 + 6 \div 12$$

$$= 6 - 17 \times 51 + 0.5$$

$$= 6 - 867 + 0.5$$

$$= 6.5 - 867$$

$$= -860.5 \neq -4$$

Only the first option satisfies the equation. Hence, the **first option** is correct.

Q. 43 **Direction:** In the following questions, correct the equation by interchanging the two signs.

$$6 \div 17 \times 51 + 6 - 12 = -4$$

Option 1:

$\times$ and $\div$

Option 2:

$+$ and $\div$

Option 3:

$+$ and $-$

Option 4:

$-$ and $\div$

Correct Answer:

$\times$ and $\div$

Solution:

Given:

$$6 \div 17 \times 51 + 6 - 12 = -4$$

Let's check the options —

First option: $\times$ and $\div$;

After interchanging the signs, the equation becomes $6 \times 17 \div 51 + 6 - 12 = -4$. So, this option is correct.

Second option: $+$ and $\div$;

After interchanging the signs, the equation becomes $6 + 17 \times 51 \div 6 - 12 = 138.5$. This is not equal to -4 . So, this option is not correct.

Third option: $+$ and $-$;

After interchanging the signs, the equation becomes $6 \div 17 \times 51 - 6 + 12 = 24$. This is not equal to -4 . So, this option is not correct.

Fourth option: $-$ and $\div$;

After interchanging the signs, the equation becomes $6 - 17 \times 51 + 6 \div 12 = -860.5$. This is not equal to -4 . So, this option is not correct.

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

Q. 44 **Directions:** In the following question, select the related word from the given alternatives.
College : Student :: Hospital : ?

Option 1:
Doctor

Option 2:
Treatment

Option 3:
Nurse

Option 4:
Patient

Correct Answer:
Patient

Solution:

Given:

College : Student :: Hospital : ?

Education is provided to students by the college.

Similarly, treatment is provided to patients by hospitals.

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

Q. 45 **Directions:** In the following question, select the related word from the given alternatives.
Donkey : Brays :: Monkey : ?

Option 1:

Trumpets

Option 2:

Bellows

Option 3:

Chatters

Option 4:

Grunts

Correct Answer:

Chatters

Solution:**Given:**

Donkey : Brays :: Monkey : ?

The sound that a donkey makes is called bray.

Similarly, the sound that a monkey makes is called chatter.

Hence, the **third option** is correct.**Q. 46****Directions:** In the following question, select the related word from the given alternatives.

Head : Human Body :: ? : ?

Option 1:

Arc : Circle

Option 2:

Cube : Circle

Option 3:

Square : Circle

Option 4:

Triangle : Circle

Correct Answer:

Arc : Circle

Solution:**Given:**

Head : Human Body :: ? : ?

Head is a part of the human body.
Similarly, an arc is a part of a circle.

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

Q. 47 **Directions:** In the following question, find the odd letter cluster from the given alternatives.

Option 1:

AG

Option 2:

WA

Option 3:

ET

Option 4:

IQ

Correct Answer:

ET

Solution:

Let's check the options –

First option: AG; $A (1) + G (7) = 7 + 1 = 8$ (This is an even number.)

Second option: WA; $W (23) + A (1) = 23 + 1 = 24$ (This is an even number.)

Third option: ET; $E (5) + T (20) = 20 + 5 = 25$ (This is an odd number.)

Fourth option: IQ; $I (9) + Q (17) = 9 + 17 = 26$ (This is an even number.)

So, the third option is different from the other options as the resultant is an odd number. Hence, the **third option** is correct.

Q. 48 **Directions:** In the following question, find the odd letter cluster from the given alternatives.

Option 1:

CTES

Option 2:

VDZC

Option 3:

MKOJ

Option 4:

RGTF

Correct Answer:

VDZC

Solution:

Let's check the options –

First option: CTES; $C + 2 = E$; $T - 1 = S$ **Second option:** VDZC; $V + 4 = Z$; $D - 1 = C$ **Third option:** MKOJ; $M + 2 = O$; $K - 1 = J$ **Fourth option:** RGTF; $R + 2 = T$; $G - 1 = F$

So, only in the second option, the difference between the place value of the first and third letters is 4 instead of 2. Hence, the **second option** is correct.

Q. 49 **Directions:** In the following question, find the odd letter cluster from the given alternatives.

Option 1:

AEIM

Option 2:

BFJN

Option 3:

CGKO

Option 4:

FDKN

Correct Answer:

FDKN

Solution:

Let's check the options –

First option: AEIM; $A + 4 = E$; $E + 4 = I$; $I + 4 = M$ **Second option:** BFJN; $B + 4 = F$; $F + 4 = J$; $J + 4 = N$ **Third option:** CGKO; $C + 4 = G$; $G + 4 = K$; $K + 4 = O$ **Fourth option:** FDKN; $F - 2 = D$; $D + 7 = K$; $K + 3 = N$

So, only in the fourth option, the difference between the place values of the letters is 2, 7, and 3 instead of 4. Hence, the **fourth option** is correct.

Q. 50 **Directions:** Shama, during the time of sunset, started walking towards the opposite side of the sun and then she turned right and right again. What direction is she facing?

Option 1:

South

Option 2:

West

Option 3:

East

Option 4:

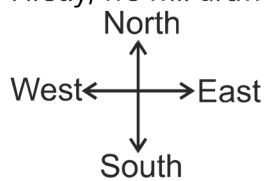
North

Correct Answer:

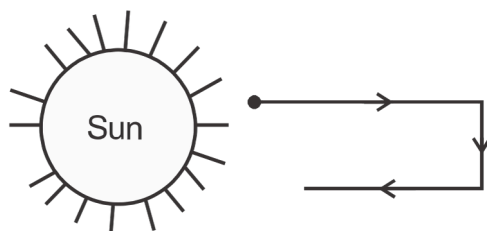
West

Solution:

Firstly, we will draw the direction and distance diagram according to the instructions given in the question –



Shama started walking towards the opposite direction of the sun during sunset, i.e., she was walking in the East direction (because during sunset, the sun is in the west direction).



So, Shama is facing the west direction. Hence, the **second option** is correct.

Q. 51 **Directions:** P started walking from north to south. She turned right at a right angle and then again right at a right angle. In which direction was she ultimately walking?

Option 1:

North

Option 2:

East

Option 3:

South

Option 4:

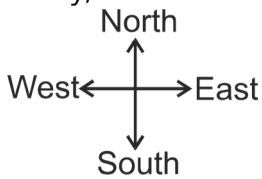
West

Correct Answer:

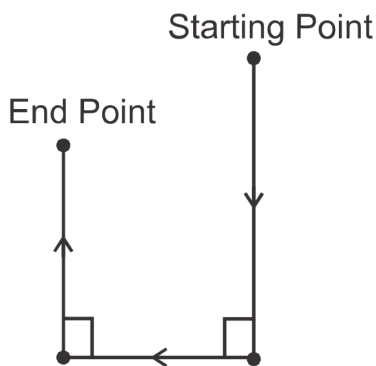
North

Solution:

Firstly, we will draw the direction and distance diagram according to the instructions –



Now, we have to find the direction in which P is moving.



So, P was facing toward the north direction. Hence, the **first option** is correct.

Q. 52 **Directions:** There are five girls R, S, T, P, and Q sitting in a row facing north. T is sitting exactly in the middle of the row. Q is sitting to the immediate right and immediate left of P and T, respectively. S is not sitting at the extreme end. Who is sitting third to the left of R?

Option 1:

P

Option 2:

Q

Option 3:

S

Option 4:

T

Correct Answer:

Q

Solution:

Given:

(i) T is sitting exactly in the middle of the row.



(ii) Q is sitting to the immediate right and immediate left of P and T, respectively. S is not sitting at the extreme end.



From the final seating arrangement, Q is sitting third to the left of R. Hence, the **second option** is correct.

Q. 53 **Directions:** The weight of the four boxes is 20, 40, 80, and 90 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:

220

Option 2:

230

Option 3:

150

Option 4:

210

Correct Answer:

220

Solution:

Given:

The weight of the four boxes is 20, 40, 80, and 90 kilograms.

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

$$20 + 40 = 60; 20 + 80 = 100; 20 + 90 = 110; 40 + 80 = 120;$$

$$40 + 90 = 130; 80 + 90 = 170; 20 + 40 + 80 = 140;$$

$$20 + 40 + 90 = 150; 20 + 80 + 90 = 190; 40 + 80 + 90 = 210;$$

$$20 + 40 + 80 + 90 = 230$$

Therefore, there is no total weight of 220 kilograms in any combination. Hence, the **first option** is correct.

Q. 54 **Directions:** The average temperature of the town in the first six days of a month was 41°C and the sum of the temperatures of the first five days of the same month was 201°C . What was the temperature on the sixth day of the month?

Option 1:

40°C

Option 2:

45°C

Option 3:

46°C

Option 4:

50°C

Correct Answer:

45°C

Solution:

Average temperature of the first six days of the month = 41°C

The sum of the temperatures of 6 days = Average temperature $\times$ Number of days = $41 \times 6 = 246^{\circ}\text{C}$

But, the sum of the temperatures of the first five days = 201°C

So, $201 + (\text{temperature of the sixth day}) = 246^{\circ}\text{C}$

The temperature of the sixth day = $246 - 201 = 45^{\circ}\text{C}$

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

Q. 55 **Directions:** In the following question, find the wrong number in the series.
28, 33, 31, 36, 34, 29

Option 1:

29

Option 2:

36

Option 3:

30

Option 4:

34

Correct Answer:

29

Solution:

Given:

28, 33, 31, 36, 34, 29

Add 5 and subtract 3 alternatively from each number to get the next number of the series.

$28 + 5 = 33$; $33 - 2 = 31$; $31 + 5 = 36$; $36 - 2 = 34$; $34 + 5 = 39$

All the terms differ by 5 and 3 alternately, except for 29.

So, 29 is the wrong number in the given series. Hence, the **first option** is correct.

Q. 56 **Directions:** In the following question, which one is the wrong number in the given series?
7, 56, 447, 3584, 28672

Option 1:

3584

Option 2:

56

Option 3:

7

Option 4:

447

Correct Answer:

447

Solution:

Given:

7, 56, 447, 3584, 28672

In the above-given series, multiply the previous number by 8 to get the next number.

$7 \times 8 = 56$; $56 \times 8 = 448 \neq 447$; $448 \times 8 = 3584$; $3584 \times 8 = 28672$

So, 447 is the wrong number as it doesn't follow the pattern. Hence, the **fourth option** is correct.

Q. 57 **Directions:** Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it.

Z X _ T R _ N L J _ F D _

Option 1:

V P H B

Option 2:

V R H B

Option 3:

U P J B

Option 4:

U P J D

Correct Answer:

V P H B

Q. 58 **Directions:** Which one set of letters, when sequentially placed at the gaps in the given letter series, shall complete it?

BE_K_QBB_EHH_KNNQQ

Option 1:

DLEK

Option 2:

HNEK

Option 3:

DLCJ

Option 4:

HNCJ

Correct Answer:

HNEK

Q. 59 **Directions:** A and B are a married couple. X and Y are brothers. X is the brother of A. How is Y related to B?

Option 1:

Brother-in-law

Option 2:

Brother

Option 3:

Son-in-law

Option 4:

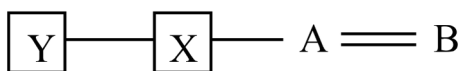
Cousin

Correct Answer:

Brother-in-law

Solution:

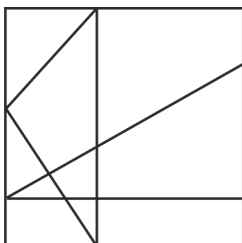
As per the given information, the family tree will be as follows –



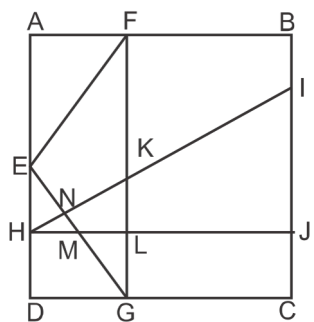
Here, the quadrilateral represents the male, and the circular figure represents the female in the figure.

So, from the above family tree, Y is the brother-in-law of B. Hence, the **first option** is correct.

Q. 60 **Directions:** How many triangles are there in the given figure?



The given figure can be labeled as shown below –



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