MOCK TEST 1

Q. 1 What is the sum of all prime numbers between 60 and 80?

Option 1:
272

Option 2:
284

Option 3:
351

Option 4:
414

Correct Answer:
351

Solution:
Prime numbers between 60 and 80 are: 61, 67, 71, 73, 79
Sum = 61 + 67 + 71 + 73 + 79 = 351
Hence, the correct answer is 351.

Q. 2 What is the LCM of 120 and 450?

Option 1:
2400

Option 2:
1800

Option 3:
3600

Option 4:
4800

Correct Answer:
1800

Solution:
120 = 2 × 2 × 2 × 3 × 5
450 = 2 × 3 × 3 × 5 × 5
LCM of 120 and 450 is (2 × 2 × 2 × 3 × 3 × 5 × 5) = 1800
i.e. 1800 is the least common multiple of 120 and 450.
Hence, the correct answer is 1800.

Q. 3 The product of two two-digit numbers is 2160, and their HCF is 12. The numbers are:

Option 1:
(12 and 60)

Option 2:
(72 and 30)

Option 3:
(36 and 60)

Option 4:
(60 and 72)

Correct Answer:
(36 and 60)

Solution:
Let the 1st number be $12x$ and the other be $12y$
Given: $HCF = 12$ and product of two numbers = 2160
So, product of two numbers = $12x \times 12y$
$2160 = 144xy$
$\Rightarrow xy = \frac{2160}{144}$
$\Rightarrow xy = 15$
The possible co-prime pairs of 15 are (1,15) and (3,5)
Therefore, the numbers are (12 $\times$ 1 and 12 $\times$ 15) or (12 $\times$ 3 and 12 $\times$ 5)
Hence, the numbers are (12 and 180) or (36 and 60)
Hence, the correct answer is (36 and 60).

Q. 4 The sum of three numbers is 252. If the first number is thrice the second and third number is $\frac{2}{3}$ rd of the first, then the second number is:

Option 1:
41

Option 2:

Option 2:
21

Option 3:
42

Option 4:
84

Correct Answer:
42

Solution:
Given:
The sum of three numbers $= 252$
Let the second number be x.
Since the first number is thrice the second and the third number is $\frac{2}{3}$rd of the first.
Thus, the first number is $3x$.
The third number is $\frac{2}{3} \times 3x = 2x$
$x + 3x + 2x = 252$
$\Rightarrow 6x = 252$
$\Rightarrow x = \frac{252}{6} = 42$
Hence, the correct answer is 42.

Q. 5 (91 + 92 + 93 + ... + 110) is equal to:

Option 1:
4020

Option 2:
2010

Option 3:
6030

Option 4:
8040

Correct Answer:
2010

Solution:
First term, a = 91
Last term, l = 110
Number of terms, n = 20

The sum of n terms of series = $\frac{n}{2}(a+l)$
The sum of 20 terms of series = $\frac{20}{2}(91+110) = 10(91+110) = 2010$
Hence, the correct answer is 2010.

Q. 6 Given that $\sqrt{3} = 1.732$, the value of $\frac{3+\sqrt{6}}{5\sqrt{3}-2\sqrt{12}-\sqrt{32}+\sqrt{50}}$ is:

Option 1:
4.899

Option 2:
2.551

Option 3:
1.414

Option 4:
1.732

Correct Answer:
1.732

Solution:
Given:
$\sqrt{3} = 1.732$
$\frac{3+\sqrt{6}}{5\sqrt{3}-2\sqrt{12}-\sqrt{32}+\sqrt{50}}$
Now evaluate:
$= \frac{3+\sqrt{6}}{5\sqrt{3}-2\sqrt{4\times3}-\sqrt{16\times2}+\sqrt{25\times2}}$
$= \frac{3+\sqrt{6}}{5\sqrt{3}-4\sqrt{3}-4\sqrt{2}+5\sqrt{2}}$
$= \frac{3+\sqrt{6}}{5(\sqrt{3}+\sqrt{2})-4(\sqrt{3}+\sqrt{2})}$
$= \frac{3+\sqrt{6}}{\sqrt{3}+\sqrt{2}}$
Now multiply and divide with $\sqrt{3}-\sqrt{2}$.
$= \frac{3+\sqrt{6}}{\sqrt{3}+\sqrt{2}} \times \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}$
$= \frac{3\sqrt{3}-3\sqrt{2}+\sqrt{18}-\sqrt{12}}{3-2}$
$= \frac{3\sqrt{3}-3\sqrt{2}+\sqrt{9\times2}-\sqrt{4\times3}}{1}$
$= 3\sqrt{3} - 3\sqrt{2} + 3\sqrt{2} - 2\sqrt{3}$
$= 3\sqrt{3} - 2\sqrt{3}$
$= \sqrt{3}(3-2)$
$= \sqrt{3}$
$= 1.732$
Hence, the correct answer is 1.732.

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
The average of three numbers = 3
According to the question,
Sum of two numbers = 2 × 8 = 16
Sum of three numbers = 3 × 3 = 9
Sum of five numbers = 16 + 9 = 25
Average value = $\frac{\text{Sum of values}}{\text{Number of values}}$
∴ Average of five numbers = $\frac{25}{5}$
Hence, the correct answer is 5.

Q. 8 The average of 15 numbers is 7. If the average of the first 8 numbers is 6.5 and the average of the last 8 numbers is 8.5, then the middle number is:

Option 1:
10

Option 2:
23

Option 3:
13

Option 4:
15

Correct Answer:
15

Solution:
Given:
Average of 15 results = 7
Average of first seven = 6.5
Average of last seven = 7.5
According to the question,
Sum of all results = 15 × 7 = 105
Sum of first seven results = 8 × 6.5 = 52
Sum of last eight results = 8 × 8.5 = 68
Eighth result = Sum of first eight results + Sum of last eight results – Sum of all results
⇒ Eighth result = 52 + 68 – 105 = 15
Hence, the correct answer is 15.

Q. 9 The average of 20 numbers is calculated as 35. It is discovered later on that while calculating the average, one number, 85, was misread as 45. The correct average is:

Option 1:
36

Option 2:
36.5

Option 3:
37

Option 4:
37.5

Correct Answer:
37

Solution:
The average of 20 numbers = 35
The sum of 20 numbers = 20 × 35 = 700
Now add 85 and subtract 45,
Correct sum = 700 – 45 + 85 = 740
∴ Correct average = $\frac{740}{20}$ = 37
Hence, the correct answer is 37.

Q. 10 By selling a bag for Rs. 230, a profit of 15% is made. The selling price of the bag, when sold at 20% profit, would be:

Option 1:
Rs. 250

Option 2:
Rs. 205

Option 3:
Rs. 240

Option 4:
Rs. 200

Correct Answer:
Rs. 240

Solution:
Let the Cost price (CP) be Rs. x.
Selling price (SP) of the bag = Rs. 230 and profit = 15%
SP = $\frac{100+\text{Profit }\%}{100}$ × CP = 230
$\Rightarrow \frac{115x}{100}$ = 230
$\Rightarrow x = \frac{230}{115} \times 100$
$\Rightarrow x$ = 200
For a profit of 20%,
The new selling price of the bag = $\frac{100+20}{100}$ × 200 = $\frac{120}{100}$ × 200 = Rs. 240
Hence, the correct answer is Rs. 240.

Q. 11 The ratio of the present ages of the two boys is $3:4$. After 3 years, the ratio of their ages will be $4:5$. The ratio of their ages after 21 years will be:

Option 1:
$14:17$

Option 2:
$17:19$

Option 3:
$11:12$

Option 4:
$10 : 11$

Correct Answer:
$10 : 11$

Solution:
Let the present age of boys be $3x$ years and $4x$ years respectively.
According to the given condition:
After 3 years,
$\Rightarrow \frac{3x+3}{4x+3} = \frac{4}{5}$
$\Rightarrow 15x + 15 = 16x + 12$
$\therefore x = 3$
So, the present age of boys is 9 years and 12 years respectively.
Therefore, the ratio of their age after 21 years is $= \frac{9+21}{12+21}$
$= \frac{30}{33}$
$= \frac{10}{11}$
Thus, the ratio of the age after 21 years is $10 : 11$.
Hence, the correct answer is $10 : 11$.

Q. 12 The ratio of A's age to B's age is $4 : 3$. A will be 26 years old after 6 years. The age of B now is:

Option 1:
$19\frac{1}{2}$ years

Option 2:
12 years

Option 3:
21 years

Option 4:
15 years

Correct Answer:
15 years

Solution:
Let the present ages of A and B be $4x$ and $3x$ respectively.
According to the question,
$4x + 6 = 26$
$\Rightarrow 4x = 20$
$\therefore x = 5$
So, the present age of B = 3 × 5 = 15 years
Hence, the correct answer is 15 years.

Q. 13 There are 1400 students in a school, 25% of them wear spectacles and $\frac{2}{7}$th of those wearing spectacles are boys. How many girls in the school wear spectacles?

Option 1:
250

Option 2:
100

Option 3:
200

Option 4:
300

Correct Answer:
250

Solution:
Total number of students = 1400
Number of students wearing spectacles $= 1400 \times \frac{25}{100} = 350$
Number of boys wearing spectacles $= 350 \times \frac{2}{7} = 100$
Therefore, the number of girls wearing spectacles $= 350 - 100 = 250$
Hence, the correct answer is 250.

Q. 14 If 60% of the students in a school are boys and the number of girls is 812, how many boys are there in the school?

Option 1:
1128

Option 2:
1218

Option 3:
1821

Option 4:
1281

Correct Answer:
1218

Solution:
Let the total number of students be x.
Boys = 60%
Girls = 40%
According to the question,
$\frac{40x}{100} = 812$
$\therefore x = 2030$
The total number of students = 2030
Now, number of boys = (total number of students – number of girls) = 2030 – 812 = 1218
Hence, the correct answer is 1218.

Q. 15 A boat moves downstream at a rate of 8 km/hr and upstream at 4 km/hr. The speed of the boat in still water is:

Option 1:
4.5 km/hr

Option 2:
5 km/hr

Option 3:
6 km/hr

Option 4:
6.4 km/hr

Correct Answer:
6 km/hr

Solution:
Given: A boat moves downstream at a rate of 8 km/hr and upstream at 4 km/hr.
We know, the speed of the boat in still water
$= \frac{(\text{Downstream speed} + \text{Upstream speed})}{2} = \frac{(8+4)}{2} = \frac{12}{2}$ = 6 km/hr
Hence, the correct answer is 6 km/hr.

Q. 16 A boat goes 4 km upstream and 4 km downstream in an hour. The same boat goes 5 km downstream and 3 km upstream in 55 minutes. What is the speed (in km/hr) of the boat in still water?

Option 1:
6.5

Option 2:
7.75

Option 3:
9

Option 4:
10.5

Correct Answer:
9

Solution:
Let the speed of the boat in still water be a km/hr and the speed of water be b km/hr.
Speed in downstream = $a+b$
Speed in upstream = $a-b$
As per the first given condition:
$\Rightarrow \frac{4}{(a-b)}+\frac{4}{(a+b)}=1$
Let $\frac{1}{(a-b)}=x$ and $\frac{1}{(a+b)}=y$
$\Rightarrow 4x+4y=1$
$\Rightarrow x+y=\frac{1}{4}$ ----------(1)
As per the second given condition:
$\Rightarrow \frac{3}{(a-b)}+\frac{5}{(a+b)}=\frac{55}{60}$
$\Rightarrow 3x+5y=\frac{11}{12}$
By putting the value of y from equation (1) we get:
$\Rightarrow 3x+5(\frac{1}{4}-x)=\frac{11}{12}$
$\Rightarrow 2x=\frac{5}{4}-\frac{11}{12}$
$\Rightarrow x=\frac{1}{6} \Rightarrow (a-b)=6$ ----------(2)
By putting the value of x in equation (1)
$\Rightarrow y=\frac{1}{4}-\frac{1}{6}$
$\Rightarrow y=\frac{1}{12} \Rightarrow (a+b)=12$ ----------(3)
From equation (2) and (3),
$\Rightarrow 2a=18 \Rightarrow a=9$
The speed of the boat in still water is 9 km/hr.
Hence, the correct answer is 9.

Q. 17 Alipta got some money from her father. In how many years will the ratio of the money and the interest obtained from it be 10 : 3 at the rate of 6% simple interest per annum?

Option 1:
7 years

Option 2:
3 years

Option 3:
5 years

Option 4:
4 years

Correct Answer:
5 years

Solution:
Given:
Rate = 6%
$\frac{\text{Principal}}{\text{Interest}} = \frac{10}{3}$
Let Principal be $10k$ and Interest be $3k$.
Simple interest = $\frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$
$\Rightarrow 3k = \frac{10\text{k} \times 6 \times \text{Time}}{100}$
$\Rightarrow$ Time = $\frac{3k \times 100}{10k \times 6}$
$\therefore$ Time = 5 years
Hence, the correct answer is 5 years.

Q. 18 If θ is positive acute angle and $7\cos^2\theta + 3\sin^2\theta = 4$, then the value of θ is:

Option 1:
60°

Option 2:
30°

Option 3:
45°

Option 4:
90°

Correct Answer:
60°

Solution:

$7\cos^2\theta + 3\sin^2\theta = 4$
$\Rightarrow 7\cos^2\theta + 3(1 - \cos^2\theta) = 4$ .....[we know that $\sin^2\theta + \cos^2\theta = 1$]
$\Rightarrow 4\cos^2\theta + 3 = 4$
$\Rightarrow \cos^2\theta = \frac{1}{4}$
$\Rightarrow \cos^2\theta - \frac{1}{4}$ = 0
$\Rightarrow (\cos\theta + \frac{1}{2})(\cos\theta - \frac{1}{2})$ = 0
$\Rightarrow \cos\theta = \frac{1}{2}$ or, $-\frac{1}{2}$
$\Rightarrow \cos\theta = \cos 60^\circ$ or, $\cos 120^\circ$
Since θ is a positive acute angle,
So, $\theta = 60^\circ$
Hence, the correct answer is 60°.

Q. 19 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. 20 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%.

General Awareness

Q. 21 The foreign traveller who visited India during the reign of Shah Jahan was

Option 1:
Thomas Roe

Option 2:
William Hawkins

Option 3:
Ibn Battuta

Option 4:
Manucci

Correct Answer:
Manucci

Solution:
The correct answer is **Niccolao Manucci.**

Niccolao Manucci was a self-taught physician and traveller from Venice and the first person to write accounts of the Mughal Empire. His writings are regarded as one of the most valuable sources of information about India during the Mughal era. During Shah Jahan's rule in India in 1653, he arrived there. He lived in India for a while, working as a doctor and a soldier in the Mughal army.

Q. 22 Abul Fazl was the son of which Sufi saint?

Option 1:
Sheikh Mubarak

Option 2:
Hazrat Khwaja

Option 3:
Nasiruddin Chiragh Dehlavi

Option 4:
Baba Qutbuddin Bakhtiyar Kaki

Correct Answer:
Sheikh Mubarak

Solution:
The answer is **Sheikh Mubarak**

Abul Fazl was the younger brother of Faizi, a well-known poet in the court of Akbar, and the son of Sheikh Mubarak, a renowned Sufi from Persia. Abu'l Fazl, also known as Shaikh Abu al-Fazl ibn Mubarak, served as the vizier of the great Mughal emperor Akbar and wrote the Akbarnama. He also held a prominent position as a minister and political advisor in Akbar's court.

Q. 23 Which dynasty was ruling in the Vijaynagar Empire at the time of the Battle of Talikota?

Option 1:
Sangam

Option 2:
Aravidu

Option 3:
Tuluva

Option 4:
Saluva

Correct Answer:
Tuluva

Solution:
The correct answer is **Tuluva.**

The Vijayanagara Empire and the Deccan sultanates engaged in a pivotal battle at Talikota (23 January 1565) that changed the course of history. At this time, the Tuluva dynasty's Sadashiv Raya was in charge of Vijaynagar.

Q. 24 Sher Shah Suri defeated which Mughal emperor?

Option 1:
Humayun

Option 2:
Timur Lang

Option 3:
Nadir Shah

Option 4:
Ahmad Shah Abdali

Correct Answer:
Humayun

Solution:
The correct option is **Humayun**

Sher Shah Suri, a formidable military strategist, engaged in a series of battles with Humayun during the mid-16th century. The pivotal conflicts occurred between 1537 and 1540, marking a turbulent period in their reigns. Sher Shah's relentless pursuit and tactical brilliance ultimately led to his victory in the Battle of Chausa in 1539 and, subsequently, in the Battle of Kannauj in 1540. The Mughal and Suri empires were engaged in a bitter struggle during this time. These victories helped Sher Shah Suri secure his dominance over northern India while temporarily deposing Humayun.

Q. 25 Which of the following writers had called Akbar's Din-i Ilahi, a monument of his folly, not of wisdom?

Option 1:
Badayuni

Option 2:
Vincent Smith

Option 3:
Barni

Option 4:
W. Haig

Correct Answer:
Vincent Smith

Solution:
The correct answer is **Vincent Smith**.

Akbar founded the Din-i Ilahi religion in 1582. Birbal was reportedly the only Hindu supporter of that initiative, but it failed because the people were not interested in this. Author Vincent Smith referred to the Din-i Ilahi as a monument to his foolishness rather than wisdom in his book '*The Early History of India*'.

Q. 26 Production function explains the relationship between:

Option 1:
initial inputs and ultimate output

Option 2:
input and ultimate consumption

Option 3:
output and consumption

Option 4:
output and exports

Correct Answer:
initial inputs and ultimate output

Solution:
The correct answer is **initial inputs and ultimate output**.

The link between inputs (such as labour, capital and raw materials) and the creation of goods and services is described by a production function. The production function illustrates the various ways that inputs can be combined to produce commodities and services.

Q. 27 Who was the architect of the Taj Mahal?

Option 1:
Ustad Ahmad Lahori

Option 2:
Norman Foster

Option 3:
Henry Irwin

Option 4:
Ustad Ghani Qutbuddin

Correct Answer:
Ustad Ahmad Lahori

Solution:
The correct option is **Ustad Ahmad Lahori**

Taj Mahal is regarded as the highest achievement in all of Indo-Islamic architecture. Shah Jahan of the Mughal Empire ordered the construction of Taj Mahal on the banks of the Yamuna, with Ustad Ahmad Lahori serving as its principal architect. To give Taj Mahal its opulent appearance, the architect tried to combine elements of Persian, Islamic and Mughal architecture. Construction of Taj Mahal took place between 1632 and 1648.

Q. 28 Japanese folk tradition and ritual, with no founder or single sacred scripture, is popularly known as

Option 1:
Taoism

Option 2:
Zoroastrianism

Option 3:
Shintoism

Option 4:
Paganism

Correct Answer:
Shintoism

Solution:
The correct answer is **Shintoism**.

Shintoism is an ethnic Japanese religion. It emphasises ceremonial practices that must be followed religiously to build a link between modern Japan and its ancient past. It is a polytheistic religion that worships kami, spirits found in living and inanimate objects. Shintoism is likewise concerned with keeping nature and the spirits who dwell in it in harmony. Its beliefs and practices are carried down through oral tradition as well as rites and ceremonies.

Q. 29 Amir Khusrau was a

Option 1:
poet

Option 2:
play writer

Option 3:
painter

Option 4:
architect

Correct Answer:
poet

Solution:
The correct answer is a **poet.**

Amir Khusrau was a famous poet, scholar, and musician in the Indian subcontinent during the 13th and 14th centuries. He was originally from Central Asia but spent most of his life in the Delhi Sultanate. Khusrau wrote extensively in Persian and is widely recognised for his contributions to the cultural, and literary heritage of the region.

Q. 30 The Queen who had the nickname "Bloody Mary"?

Option 1:
Elizabeth

Option 2:
Victoria

Option 3:
Mary I

Option 4:
Ruth

Correct Answer:
Mary I

Solution:
The answer is **Mary I.**

Queen Mary I was the Queen of England who ruled by her rights but was known by the name "Bloody Mary" because she pursued Protestant heretics, leading to their execution by burning at the stake in large numbers.

Q. 31 The ideas of Liberty, Equality, and Fraternity, which influenced the Indian National Movement, were taken from ____.

Option 1:
American Revolution

Option 2:
Russian Revolution

Option 3:
Chinese revolution

Option 4:
French Revolution

Correct Answer:
French Revolution

Solution:
The answer is the **French Revolution**.

The Declaration of the Rights of Man and the Citizen was adopted by the French National Assembly in 1789 and contained the principles of Liberty, Equality, and Fraternity. The right to liberty, property, security, and resistance to persecution are among the rights that are guaranteed to all at their birth under the Declaration of Independence.

Q. 32 The speaker of the Lok Sabha has to address his/her letter of resignation to

Option 1:
Prime Minister of India

Option 2:
President of India

Option 3:
Deputy Speaker of Lok Sabha

Option 4:
Minister of Parliamentary Affairs

Correct Answer:
Deputy Speaker of Lok Sabha

Solution:
The correct answer is **Deputy Speaker of Lok Sabha**

Articles 93-96 of the Indian Constitution deal with the powers and functions of the Speaker and Deputy Speaker of the Lok Sabha. As per the convention, the **Speaker of Lok Sabha** is from the ruling party and the Deputy Speaker is from the opposition. The Speaker of Lok Sabha is responsible for the orderly functioning of the Lower House, conducting regular proceedings and maintaining law and order. As per the Constitution, the Speaker of Lok Sabha can resign by addressing his resignation to the Deputy Speaker of Lok Sabha.

Q. 33 In the Indian constitution, the method of election of the President has been taken from which country?

Option 1:
Britain

Option 2:
USA

Option 3:
Ireland

Option 4:
Australia

Correct Answer:
Ireland

Solution:
The correct option is **Ireland.**

The Indian Constitution incorporates several clauses and elements from other constitutions. The **Irish Constitution** inspired two Indian laws: the directive principles and the presidential election. In addition, the Irish Constitution governs the selection of Rajya Sabha members. **Article 55** of the Constitution specifies the process for electing the president.

Q. 34 _____scheme launched by the Central Government aims to improve rural livelihoods, promote rural development, and strengthen the Panchayati Raj across the country.

Option 1:
Pradhan Mantri Fasal Bima Yojana

Option 2:
Gram Uday se Bharat Uday Abhiyan

Option 3:
Stand up India scheme

Option 4:
National RU URBAN Mission

Correct Answer:
Gram Uday se Bharat Uday Abhiyan

Solution:
The correct answer is **Gram Uday se Bharat Uday Abhiyan.**

The comprehensive scheme aims to promote social harmony and empower people in villages by upgrading Panchayati Raj Institutions with basic amenities such as drinking water, sanitation, etc. This nationwide program involves all stakeholders, including the Central Government, State Governments, Panchayats, and the general public.

Q. 35 _____ was launched by Prime Minister Narendra Modi as a part of the Beti Bachao Beti Padhao campaign.

Option 1:
Sukanya Samriddhi Account

Option 2:
Bal Swachhta Mission

Option 3:
Pradhan Mantri Jan Dhan Yojana

Option 4:
Beti Bachao Beti Padhao Yojana

Correct Answer:
Sukanya Samriddhi Account

Solution:
The correct answer is the **Sukanya Samridhi Account.**

Sukanya Samriddhi Account is a government-backed savings scheme designed to encourage parents to save for their girl child's future education and marriage. The Beti Bachao Beti Padhao initiative was spearheaded by Prime Minister Narendra Modi beginning in 2015. It provides a high interest rate and tax benefits, and the account matures after 21 years.

Q. 36 Where is the headquarters of the National Film Archives of India (NFAI) located?

Option 1:
Pune

Option 2:
Chennai

Option 3:
Bangalore

Option 4:
Mumbai

Correct Answer:
Pune

Solution:
The correct option is **Pune**.

As a media division of the Ministry of Information and Broadcasting, the National Film Archive of India (NFAI) was founded in February 1964. It merged with the National Film Development Corporation in March 2022. The NFAI has three regional offices, located in Bengaluru, Calcutta and Thiruvananthapuram, with its headquarters in Pune, Maharashtra.

Q. 37 Which cell organelles are the site of photosynthesis and also contain chlorophyll?

Option 1:
Chloroplast

Option 2:
Vacuole

Option 3:
Cytoplasm

Option 4:
Nucleolus

Correct Answer:
Chloroplast

Solution:
The correct option is **Chloroplast.**

A **chloroplast** is a specialised organelle found in plant and algal cells. It is a **photosynthesis site** where light energy is collected and turned into chemical energy via intricate molecular events. Chloroplasts contain chlorophyll, the green pigment found in plants that allows them to absorb sunlight and perform photosynthesis.

Q. 38 Which among the following will be a negative ion?

Option 1:
If it has more electron than protons

Option 2:
If it has more electrons than neutrons

Option 3:
If it has more protons than electrons

Option 4:
If it has more protons than neutrons

Correct Answer:
If it has more electrons than neutrons

Solution:
The correct answer is **If it has more electrons than neutrons**

Negative ions, or anions, arise when an atom or molecule gains one or more electrons. We call it electron gain. Certain elements are more likely to attract electrons than others due to their electron configuration and position in the periodic table. Elements having nearly whole or half-filled valence electron shells may have a high electron affinity. When these atoms come into contact with electrons, they can easily attract them, resulting in a more stable electron configuration.

Q. 39 Which of the following is a volatile memory of a computer?

Option 1:
Secondary memory

Option 2:
Cache memory

Option 3:
RAM

Option 4:
ROM

Correct Answer:
RAM

Solution:
The correct answer is **RAM.**

RAM is a type of volatile memory. Volatile memory is computer memory that loses data when the computer is switched off. RAM is classified as volatile memory. RAM is an acronym for random access memory.

Q. 40 The Andaman and Nicobar group of Islands are separated from each other by which of the following?

Option 1:
Ten Degree Channel

Option 2:
Great Channel

Option 3:
Bay of Bengal

Option 4:
Andaman Sea

Correct Answer:
Ten Degree Channel

Solution:
The correct option is the **Ten Degree Channel**.

The Ten Degree Channel is a narrow strip of water in the Indian Ocean separating the Andaman and Nicobar Islands. It is a vital maritime channel that connects the two island groups and is a chief shipping route for boats travelling between the Bay of Bengal and the Andaman Sea.

Q. 41 **Directions:** In the following question you have to identify the correct response from the given premises stated according to following symbols:

If '$-$' stands for division '$+$' stands for multiplication, '$\div$' stands for subtraction and '$\times$' stands for addition, which one of the following equations is correct?

Option 1:
$6 \div 20 \times 12 + 7 - 1 = 70$

Option 2:
$6 + 20 - 12 \div 7 \times 1 = 62$

Option 3:
$6 - 20 \div 12 \times 7 + 1 = 57$

Option 4:
$6 + 20 - 12 \div 7 - 1 = 38$

Correct Answer:
$6 \div 20 \times 12 + 7 - 1 = 70$

Q. 42 **Directions:** Which of the following interchange of signs would make the given equation correct?
5 + 3 × 8 – 12 ÷ 4 = 3

Option 1:
– and ÷

Option 2:
+ and ×

Option 3:
+ and ÷

Option 4:
+ and –

Correct Answer:
– and ÷

Solution:
Given:
5 + 3 × 8 – 12 ÷ 4 = 3

Replace the given signs in the options one by one with those in the given equation.
First option: – and ÷
= 5 + 3 × 8 ÷ 12 – 4
= 5 + 2 – 4
= 7 – 4
= 3
Second option: + and ×
= 5 × 3 + 8 – 12 ÷ 4
= 5 × 3 + 8 – 3
= 15 + 8 – 3
= 23 – 3
= 20 ≠ 3
Third option: + and ÷
= 5 ÷ 3 × 8 – 12 + 4
= 1.67 × 8 – 12 + 4
= 13.36 – 12 + 4
= 5.36 ≠ 3
Fourth option: + and –
= 5 – 3 × 8 + 12 ÷ 4
= 5 – 3 × 8 + 3
= 5 – 24 + 3
= –16 ≠ 3

Here, only the first option satisfies the R.H.S. of the given equation. Hence, the **first option** is correct.

Q. 43 **Directions:** In the following question, correct the equation by interchanging two signs.
6 + 8 ÷ 4 – 4 = 8

Option 1:
÷ and =

Option 2:
÷ and +

Option 3:
÷ and –

Option 4:
+ and –

Correct Answer:
+ and –

Solution:
Given:
6 + 8 ÷ 4 – 4 = 8

Let's check the options –
First option: ÷ and =
6 + 8 = 4 – 4 ÷ 8
LHS⟶6 + 8 = 14
RHS⟶4 – 4 ÷ 8
= 4 – 0.5
= 3.5
LHS ≠ RHS
Second option: ÷ and +
6 ÷ 8 + 4 – 4 = 8
LHS⟶6 ÷ 8 + 4 – 4
= 0.75 + 4 – 4
= 0.75
RHS⟶8
LHS ≠ RHS
Third option: ÷ and –
6 + 8 – 4 ÷ 4 = 8
LHS⟶6 + 8 – 4 ÷ 4
= 6 + 8 – 1
= 14 – 1
= 13
RHS⟶8
LHS ≠ RHS
Fourth option: + and –
6 – 8 ÷ 4 + 4 = 8
LHS⟶6 – 8 ÷ 4 + 4
= 6 – 2 + 4
= 10 – 2
= 8
RHS⟶8
LHS = RHS

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

Q. 44 **Directions:** In the following question, select the related word from the given alternatives.
Cytology : Cells :: ? : Birds

Option 1:
Odontology

Option 2:
Mycology

Option 3:
Etymology

Option 4:
Ornithology

Correct Answer:
Ornithology

Solution:
Given:
Cytology : Cells :: ? : Birds

Cytology is the study of cells.
Similarly, Ornithology is the study of birds.

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

Q. 45 **Directions:** In the following question, select the related word from the given alternatives.
Bird : Aeroplane :: Fish : ?

Option 1:
Fishermen

Option 2:
Sofa

Option 3:
Boats

Option 4:
Glasses

Correct Answer:
Boats

Solution:
Given:
Bird : Airplane :: Fish : ?

Both birds and airplanes use air as a means of movement.
Similarly, both fish and boats use water as a means of movement.

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

Q. 46 **Directions:** In the following question, select the related word from the given alternatives.
Magazine : Editor :: Drama : ?

Option 1:
Director

Option 2:
Hero

Option 3:
Heroine

Option 4:
Painter

Correct Answer:
Director

Solution:
Given:
Magazine : Editor :: Drama : ?

A magazine is published by an editor.
Similarly, a drama is directed by a director.

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

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

Option 1:
DAEH

Option 2:
KIMP

Option 3:
HEIL

Option 4:
FCGJ

Correct Answer:
KIMP

Solution:
Let's check the options –
First option: DAEH; D – 3 = A; A + 4 = E; E + 3 = H
Second option: KIMP; K – 2 = I; I + 4 = M; M + 3 = P
Third option: HEIL; H – 3 = E; E + 4 = I; I + 3 = L
Fourth option: FCGJ; F – 3 = C; C + 4 = G; G + 3 = J

So, the difference between the place values of the letters in the second option differs from the other options.
Hence, the **second option** is correct.

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

Option 1:
OMQ

Option 2:
TPR

Option 3:
TRV

Option 4:
VTX

Correct Answer:
TPR

Solution:

Let's check the options
First option: OMQ; O – 2 = M; M + 4 = Q
Second option: TPR; T – 4 = P; P + 2 = R
Third option: TRV; T – 2 = R; R + 4 = V
Fourth option: VTX; V – 2 = T; T + 4 = X

So, the difference between the place values of the letters in the second option differs from the other options.
Hence, the **second option** is correct.

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

Option 1:
CA

Option 2:
FD

Option 3:
KI

Option 4:
TQ

Correct Answer:
TQ

Solution:
Let's check the options –
First option: CA; C – 2 = A
Second option: FD; F – 2 = D
Third option: KI; K – 2 = I
Fourth option: TQ; T – 3 = Q

So, the difference between the place values of the letters in the fourth option differs from the other options.
Hence, the **fourth option** is correct.

Q. 50 **Directions:** Johnson left for his office in his car. He drove 15 km towards the North and then 10 km towards the West. He then turned to the South and covered 5 km. Further, he turned to East and moved 8 km. Finally, he turned right and moved 10 km. How far and in which direction is he from his starting point?

Option 1:
2 km, West

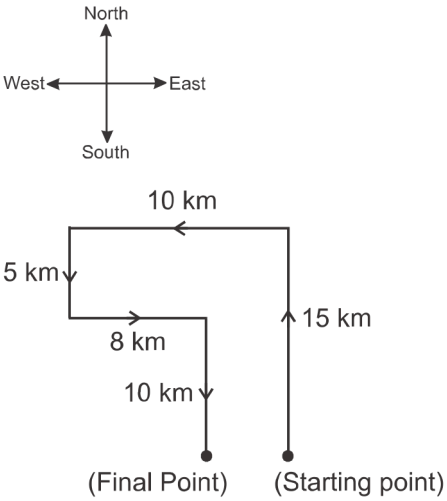
Option 2:
5 km, East

Option 3:
3 km, North

Option 4:
3 km, South

Correct Answer:
2 km, West

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



From the above diagram, the distance between the starting and the end point is 10 km – 8 km = 2 km
The final point is in the West direction from the starting point.

So, Johnson is in the West direction and is at a distance of 2 km from the starting point. Hence, the **first option** is correct.

Q. 51 **Directions:** To attend an exam, Sudhir reached the school by travelling 5 km towards the south, and after a sharp left turn, he travelled for about 10 km. He again made a sharp left turn and reached the school by travelling 5 km more. Which direction is Sudhir's starting point from the school?

Option 1:
East

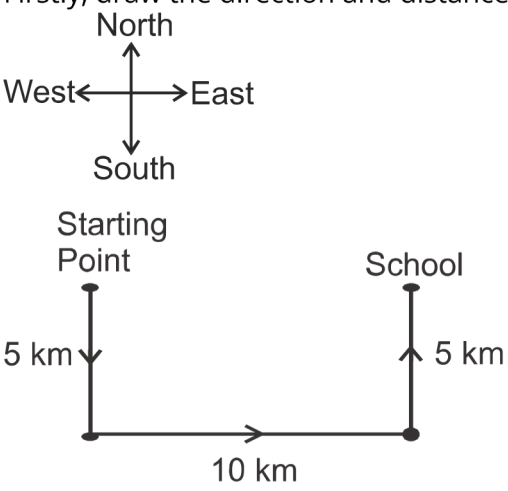
Option 2:
West

Option 3:
North

Option 4:
South

Correct Answer:
West

Solution:
Firstly, draw the direction and distance diagram according to the instructions –



From the above diagram, it is clear that Sudhir's starting point is in the West direction from the school.

Therefore, West is the correct answer. Hence, the **second option** is correct.

Q. 52 **Directions:** P, Q, R and S are playing a game of carrom. P, R and S, Q are partners. S is to the right of R. If R is facing west, then Q is facing which direction?

Option 1:
North

Option 2:
South

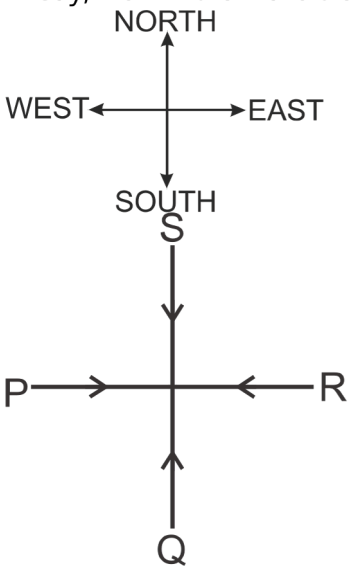
Option 3:
East

Option 4:
West

Correct Answer:
North

Solution:

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



So, Q is facing in the North direction. Hence, the **first option** is correct.

Q. 53 **Directions:** A and B are standing at the same point. They start moving in opposite directions at speeds of 5 kmph and 4 kmph respectively. What will be the distance between them after 3 hours?

Option 1:
3 km

Option 2:
21 km

Option 3:
18 km

Option 4:
27 km

Correct Answer:
27 km

Solution:
Given:
Speed of A = 5 kmph; Speed of B = 4 kmph
Time = 3 hours

According to the instructions given, both A and B are standing at the same point, and from there they start moving in opposite directions at different speeds.
Distance = Speed × Time

So, the distance travelled by A in 3 hours = 5 × 3 = 15 km
Distance traveled by B in 3 hours = 4 × 3 = 12 km
Therefore, the distance between A and B after 3 hours = 15 + 12 = 27 km

So, 27 km will be the distance between A and B after three hours. Hence, the **fourth option** is correct.

Q. 54 **Directions**: Ram leaves his house at 20 minutes to seven in the morning, and reaches Kunal's house in 25 minutes. They finish their breakfast in another 15 minutes and leave for their office which takes another 35 minutes. At what time do they leave Kunal's house to reach their office?

Option 1:
7:40 a.m.

Option 2:
7:20 a.m.

Option 3:
7:45 a.m.

Option 4:
8:15 a.m.

Correct Answer:
7:20 a.m.

Solution:
Here, calculate the time step by step by following the steps –

1. Ram leaves his house at 20 minutes to seven in the morning, which means at 6:40 a.m.
2. Ram reaches Kunal's house in 25 minutes means at 6:40 a.m. + 25 minutes = 7:05 a.m.
3. They finish their breakfast in another 15 minutes means at 7:05 a.m. + 15 minutes = 7:20 a.m.
4. After that takes another 35 minutes, which means at 7:20 a.m. + 35 minutes = 7:55 a.m.

So, they leave Kunal's house to reach their office at 7:20 a.m. Hence, the **second option** is correct.

Q. 55 **Directions:** The present age of A is two times the present age of B. After 8 years, B's age will be four times C's present age. If 9 years ago, C celebrated his fifth birthday, then what is the present age (in years) of A?

Option 1:
88

Option 2:
96

Option 3:
92

Option 4:
84

Correct Answer:
96

Solution:
Let the present age of C be x years.
Since 9 years ago, C celebrated his 5th birthday
⇒ x – 9 = 5
⇒ x = 5 + 9
⇒ x = 14 years
So, C's present age is 14 years.
Also, after 8 years, the B's age will be 4 times that of C's present age.
So, B's present age is –
⇒ (14 × 4) – 8 = 56 – 8 = 48
Since A's present age is twice B's present age, A's present age is 48 × 2 = 96 years.

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

Q. 56 **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. 57 **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 × 8 = 56; 56 × 8 = 448 ≠ 447; 448 × 8 = 3584; 3584 × 8 = 28672

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

Q. 58 **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

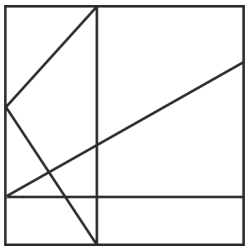
Option 2:
V R H B

Option 3:
U P J B

Option 4:
U P J D

Correct Answer:
V P H B

Q. 59 **Directions:** How many triangles are there in the given figure?



Option 1:
11

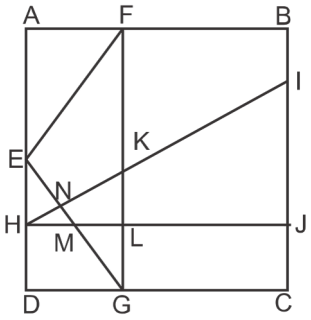
Option 2:
9

Option 3:
10

Option 4:
12

Correct Answer:
10

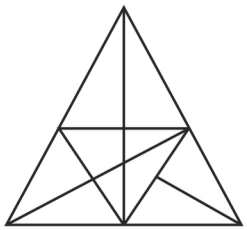
Solution:
The given figure can be labeled as shown below –



There are a total of 10 triangles in the above figure. They are AFE, EDG, EFG, EHN, HNM, EHM, HIJ, GML, GNK, HKL.

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

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



Option 1:
24

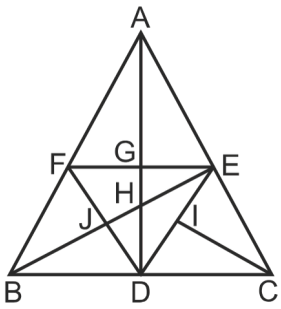
Option 2:
30

Option 3:
28

Option 4:
29

Correct Answer:
28

Solution:
The figure can be labeled as shown below –



There are 28 triangles in the above figure. They are AFG, AEG, AFE, BFJ, BDJ, BFD, CEI, CDI, CED, ABD, ACD, ABC, AHB, AHE, DEF, DEG, DFG, GHE, DEH, JHD, BEC, BHD, AEB, AFD, AED, DJE, FEJ, BDE.

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