RRB NTPC UG CBT-1 Exam Day Based Paper Mock 3

Q.1 Why was the Vernacular Press Act of 1878, often referred to as the "Gagging Act," enacted?

A. Regulate printing costs and tariffs.
B. Promote vernacular education and literacy.
C. Facilitate translation of English literature into regional languages.
D. Suppress Indian-language newspapers that criticized colonial policies.

Answer: D

Sol: The correct answer is **(D) Suppress Indian-language newspapers that criticized colonial policies.**

Explanation:
• The Vernacular Press Act was passed in 1878 by the Viceroy, Lord Lytton.
• It gave the government extensive power to censor reports and editorials in vernacular (local language) newspapers that were deemed 'seditious' or critical of the British Raj.

Information Booster:
• It was called the 'Gagging Act' because it only targeted non-English newspapers.
• The 'Amrita Bazar Patrika' famously changed its language to English overnight to escape the Act.

Additional Knowledge:
• The Act was repealed in 1881 by Lord Ripon.

Q.2 When saving a PowerPoint file with macros, which file format should one choose?

A. .potx
B. .pptm
C. .pdf
D. .pptx

Answer: B

Sol: The correct answer is **(B) .pptm**

Explanation:
• A macro is a series of commands and instructions that you group together as a single command to accomplish a task automatically. In Microsoft Office, macros are written in the VBA (Visual Basic for Applications) language. Because macros can contain code that executes automatically, they pose a potential security risk if used maliciously (e.g., macro-based viruses).
• To address this, Microsoft separated files that contain macros from those that do not. The standard '.pptx' format is strictly 'macro-free'. If you create a macro in a presentation and attempt to save it as a .pptx, PowerPoint will warn you that the macro code will be lost. To preserve the macros, you must select the '.pptm' (PowerPoint Macro-Enabled Presentation) format.
• The '.pptm' extension alerts both the operating system and the user that the file contains embedded code. When a user opens a .pptm file, PowerPoint typically displays a security warning asking the user to 'Enable Content' before the macros are allowed to run. This distinction is vital for maintaining a secure computing environment while still allowing for the powerful automation that macros provide.

Information Booster:
• The 'm' in .pptm, .docm, and .xlsm stands for 'Macro'.
• Macros are often used in presentations for complex interactivity, such as building custom quizzes or automated navigation menus that go beyond standard transitions.
• To create or edit macros, you usually need to enable the 'Developer' tab in the PowerPoint Ribbon settings.

Additional Knowledge:
• **Option A (.potx):** This is the extension for a PowerPoint Template. While templates help maintain consistent design, a .potx file does not store macros (the macro-enabled template version is .potm).
• **Option C (.pdf):** Portable Document Format. Saving as a PDF flattens the file into a static document. It loses all interactivity, animations, and certainly any macro functionality.
• **Option D (.pptx):** As mentioned, this is the default macro-free format. It is used for the vast majority of presentations that only contain text, images, and standard animations.

Q.3 The 2025 World Judo Championships, held in June 2025, took place at which location?

A. Baku, Azerbaijan

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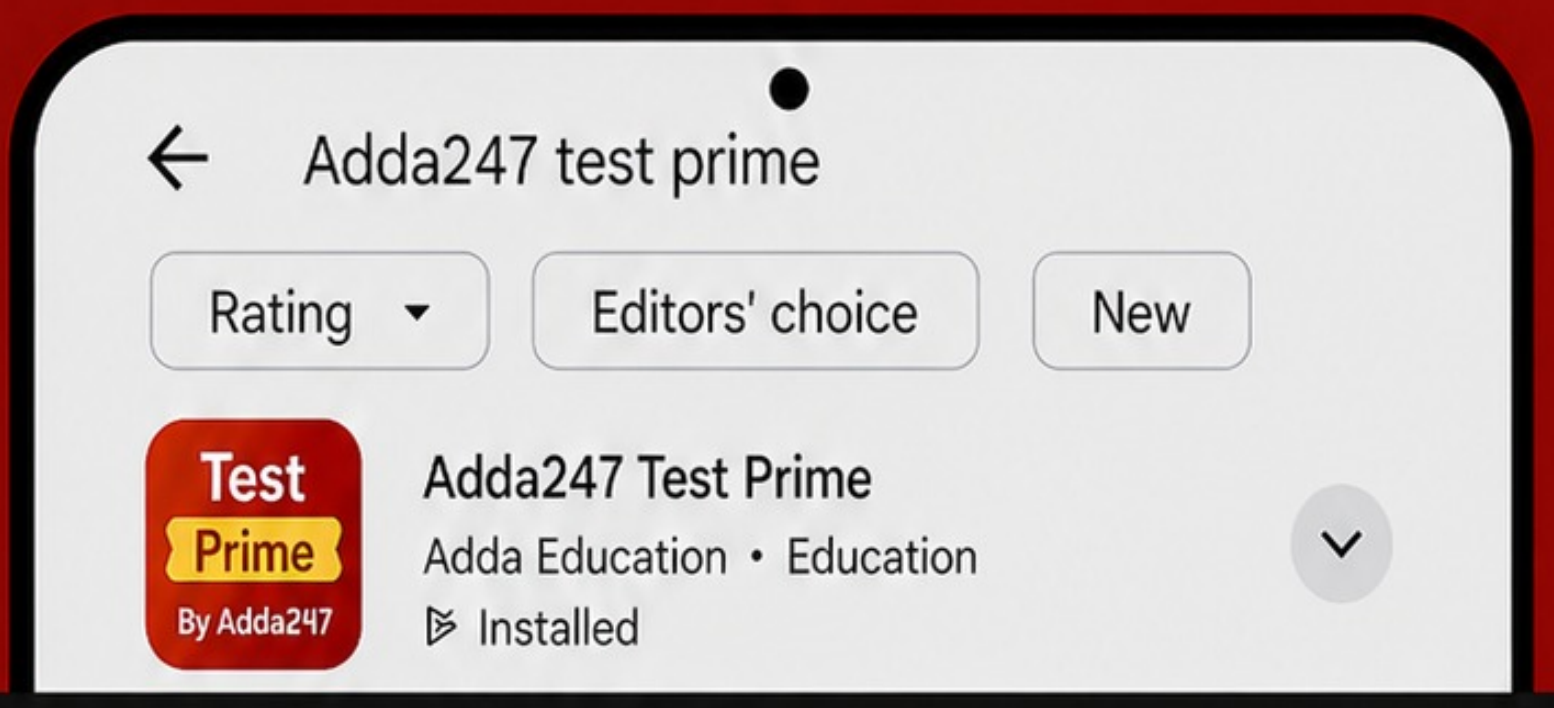

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B. Budapest, Hungary
C. Tokyo, Japan
D. Doha, Qatar

Answer: B

Sol: The correct answer is **(b) Budapest, Hungary**

Explanation:

- The **2025 World Judo Championships** were held in **Budapest, Hungary**, in June 2025.
- Budapest is a major hub for international judo, being the headquarters of the **International Judo Federation (IJF)**.
- The championships featured individual and mixed team events, drawing top athletes from across the globe.
- Japan once again dominated the medal tally, maintaining its status as the birthplace and powerhouse of the sport.
- The event served as a critical platform for world ranking points following the previous Olympic cycle.

Information Booster:

- Judo was founded by **Kano Jigoro** in Japan in 1882.
- The IJF World Championships are the highest level of international judo competition outside of the Olympic Games.

Additional Knowledge:

Baku, Azerbaijan (Option a)

- Hosted the World Judo Championships in 2018 and frequently hosts Grand Slam events.

Tokyo, Japan (Option c)

- The spiritual home of Judo, hosted the 2019 World Championships at the Nippon Budokan.

Doha, Qatar (Option d)

- Hosted the World Judo Championships in 2023.

So the correct answer is (b)

Q.4 Who received the first Rajiv Gandhi Khel Ratna Award, India's highest sporting honor, recognizing outstanding performance and contributions to national sports achievements?

A. Leander Paes
B. Vishwanathan Anand
C. P. T. Usha
D. Karnam Malleswari

Answer: B

Sol: The correct answer is **(B) Vishwanathan Anand**

Explanation:

• The Rajiv Gandhi Khel Ratna (now Major Dhyan Chand Khel Ratna) was instituted in 1991–92.
• Chess Grandmaster Vishwanathan Anand was its first recipient.

Information Booster:

• The award was renamed to Major Dhyan Chand Khel Ratna Award in 2021.

Additional Knowledge:

• Karnam Malleswari (Option D): First woman to receive the Khel Ratna (1994–95).
• Leander Paes (Option A): Received it in 1996–97.

Q.5 After the Jallianwala Bagh massacre, the British government appointed which committee to investigate the incident?

A. Simon Commission
B. Muddiman Committee
C. Hunter Commission
D. Butler Committee

Answer: C

Sol: The correct answer is **(C) Hunter Commission**

Explanation:
• Officially known as the Disorders Inquiry Committee, it was chaired by Lord Hunter.
• It was formed in October 1919 to investigate the disturbances in Punjab, including the Jallianwala Bagh incident.

Information Booster:
• The commission eventually censured Dyer but did not impose any significant legal punishment on him.

Additional Knowledge:
• Simon Commission (Option A): Appointed in 1927 to report on the working of the Indian Constitution.
• Butler Committee (Option D): Formed to examine the relationship between the Paramount Power and the Indian States.

Q.6 **As per the April 2025 monthly Periodic Labour Force Survey (PLFS) data, what was India's unemployment rate in April 2025?**

A. 4.9%
B. 6.4%
C. 5.1%
D. 5.6%

Answer: C

Sol: The correct answer is **(C) 5.1%**

Explanation:
• The Periodic Labour Force Survey (PLFS) data for April 2025 indicated that India's overall unemployment rate stood at 5.1%. This figure reflects the percentage of the labor force that is jobless and actively seeking employment.
• The report highlighted a slight fluctuation compared to previous quarters, attributed to the seasonal transition in the agricultural sector and a boost in urban construction projects. The urban unemployment rate typically remains slightly higher than the rural rate due to the nature of formal job seekers in cities.
• Significant trends observed in the April 2025 data included an increase in the Worker Population Ratio (WPR) and a steady Labour Force Participation Rate (LFPR), suggesting that while more people are entering the market, the creation of high-quality jobs remains a focal challenge for policy.
• Female labor force participation showed a positive upward trend, though it still lags significantly behind male participation. The government's focus on manufacturing through PLI schemes is often cited as a reason for stabilizing these rates.

Information Booster:
• The PLFS is conducted by the National Statistical Office (NSO) under the Ministry of Statistics and Programme Implementation.
• It was launched in April 2017 to provide more frequent (quarterly for urban areas) labor force data compared to the old five-year surveys.
• Definitions: **LFPR** is the percentage of persons in the labor force (working or seeking work) in the population. **WPR** is the percentage of employed persons in the population.

Q.7 **The 'Lead Bank Scheme', introduced in 1969 by the RBI, assigned what responsibility to banks?**

A. To lead protests
B. To act as the main bank for a specific district
C. To lend only to large industries
D. To print currency

Answer: B

Sol: The correct answer is **(B) To act as the main bank for a specific district**

Explanation:
• Under the Lead Bank Scheme, a specific bank is assigned a district to act as the 'Lead Bank'.
• This bank is responsible for surveying resources and banking potential to coordinate credit delivery in that district.

Information Booster:
• The scheme was introduced based on the recommendations of the Gadgil Study Group and the Nariman Committee.
• It aimed to address regional imbalances in banking development.

Additional Knowledge:
• To print currency (Option D): This is the sole prerogative of the RBI and the Government of India, not commercial banks.

Q.8 **What is the primary purpose of the Jammu and Kashmir Reorganisation (Amendment) Bill, 2025?**

A. To reorganise Jammu and Kashmir into two separate states
B. To provide for the removal of Ministers in the Jammu and Kashmir government in case of arrest and detention due to serious criminal offences
C. To remove the status of Jammu and Kashmir as a Union Territory
D. To establish a special constitutional provision for Jammu and Kashmir

Answer: B

Sol:

Correct Answer: (b) To provide for the removal of Ministers in the Jammu and Kashmir government in case of arrest and detention due to serious criminal offences

Explanation:

· The **Jammu and Kashmir Reorganisation (Amendment) Bill, 2025** aims to address the issue of Ministers who are arrested and detained for serious criminal offences. It provides a clear procedure for removing such Ministers from office if they are detained for **30 consecutive days**.

· This amendment aligns with the broader goal of ensuring that individuals holding public office are not involved in activities that compromise governance or public trust.

Information Booster:

· The **Constitution (130th Amendment) Bill, 2025**, introduced alongside the J&K Reorganisation Bill, extends similar provisions to the **central government**, **state governments**, and **Union Territories** like Delhi and Puducherry, establishing a uniform framework for the removal of Ministers under such circumstances.

Q.9 **What is the term for a tax structure where the tax rate increases as the income of the payer increases?**

A. Regressive Tax
B. Proportional Tax
C. Progressive Tax
D. Ad Valorem Tax

Answer: C

Sol: The correct answer is **(C) Progressive Tax**

Explanation:

• A progressive tax is a tax where the tax rate increases as the taxable amount increases.
• It is based on the 'ability to pay' principle, placing a higher burden on higher-income earners.

Information Booster:

• Income Tax in India is a classic example of a progressive tax system with different tax slabs.

Additional Knowledge:

• Regressive Tax (Option A): A tax where the rate decreases as the income increases (e.g., indirect taxes like GST, which take a larger percentage of income from low earners).
• Proportional Tax (Option B): A flat tax where everyone pays the same percentage regardless of income.

Q.10 **What is the main function of the nucleus in a eukaryotic cell?**

A. Digesting waste
B. Storing food
C. Producing energy
D. Controlling cell activities

Answer: D

Sol: The correct answer is **(D) Controlling cell activities**

Explanation:
• The nucleus contains the genetic material (DNA) of the cell.
• It acts as the control center, directing growth, metabolism, and reproduction (cell division).

Information Booster:
• The nucleus is often referred to as the 'brain' of the cell.

Additional Knowledge:
• Digesting waste (Option A): Performed by Lysosomes.
• Producing energy (Option C): Performed by Mitochondria.

Q.11 **Which Constitutional Amendment added "public order", "friendly relations with foreign states", and "incitement to an offence" as grounds for restricting freedom of speech and expression?**

A. Forty-Fourth Constitutional Amendment Act, 1978
B. Sixty-First Constitutional Amendment Act, 1989
C. Forty-Second Constitutional Amendment Act, 1976
D. First Constitutional Amendment Act, 1951

Answer: D

Sol: The correct answer is **(D) First Constitutional Amendment Act, 1951**

Explanation:
• Article 19(1)(a) of the Indian Constitution guarantees the freedom of speech and expression. However, this right is not absolute and is subject to 'reasonable restrictions'.
• The First Constitutional Amendment Act, 1951, significantly expanded the scope of these restrictions under Article 19(2). It added three new grounds for restricting speech: 'public order', 'friendly relations with foreign states', and 'incitement to an offence'.
• Before this amendment, the restrictions were limited to grounds like the security of the State, defamation, contempt of court, and decency or morality. The amendment was brought in response to several judicial decisions (like Romesh Thappar v. State of Madras) that the government felt limited its power to maintain public order and security.
• The inclusion of these terms allowed the State to enact laws to prevent speech that could trigger riots, harm diplomatic efforts, or encourage criminal activities, provided the restrictions are 'reasonable'.

Information Booster:
• The First Amendment also introduced Article 31A and 31B, and the Ninth Schedule to protect land reform laws from judicial review.
• It was moved by then Prime Minister Jawaharlal Nehru.
• The term 'reasonable' was also added before 'restrictions' in this amendment to ensure that the judiciary could still test the validity of any law restricting freedom.

Additional Knowledge:
• **Forty-Fourth Amendment (Option A):** Famous for deleting the Right to Property from the list of Fundamental Rights and changing 'Internal Disturbance' to 'Armed Rebellion' for National Emergency.
• **Sixty-First Amendment (Option B):** Reduced the voting age from 21 to 18 years.
• **Forty-Second Amendment (Option C):** Known as the 'Mini-Constitution'; it added the words Socialist, Secular, and Integrity to the Preamble and introduced Fundamental Duties.

Q.12 **When sorting data in MS-Excel, what should you do first to ensure related data stays together?**

A. Convert data to a table
B. Sort each column individually
C. Sort by the first column only
D. Select the entire data range including headers

Answer: D

Sol: The correct answer is **(D) Select the entire data range including headers**

Explanation:
• Data integrity is the biggest risk when sorting in Excel. If you select only one column and sort it, Excel might only reorder that column, effectively "detaching" the names from their associated phone numbers or prices in the adjacent columns.
• To prevent this, you must select the entire block of related data (the "dataset") before initiating the sort. This tells Excel that Row 5 is a single record and all its elements must move together.
• Including headers is vital because it allows you to sort by descriptive names (like "Last Name" or "Date") rather than generic column letters like "Column A" or "Column B."
• Excel usually detects if your selection has a header row, but you can manually check the "My data has headers" box in the Custom Sort dialog to be

sure.
• Once the range is correctly selected, you can perform multi-level sorts (e.g., Sort by Department, then by Salary within that department).

Information Booster:
• A common mistake is leaving an empty column or row within a dataset; Excel's "Auto-Select" feature (Ctrl + A) will stop at these gaps, leading to partial sorts that ruin the data.
• Using the "Filter" (Ctrl + Shift + L) feature is often safer than basic sorting because the filter buttons automatically treat the entire contiguous range as a single table.
• If you make a mistake while sorting, immediately press Ctrl + Z (Undo) to restore the original order; otherwise, there is no way to "unsort" data once the file is saved.
• You can also sort by cell color, font color, or conditional formatting icons, not just by text or numbers.

Additional Knowledge:
• **Option A:** While converting to a table (Ctrl + T) is excellent practice and makes sorting safer, it is an extra structural step. The fundamental action required for any sort—table or not—is selecting the correct range.
• **Option B:** Sorting columns individually is the fastest way to corrupt a database. It scrambles the relationship between data points in different columns.
• **Option C:** Sorting by the first column only is a choice of criteria, not a preparatory step. You still need the whole range selected even if you only care about the order of the first column.

Q.13 **In the context of India's pre-1991 economic structure, which of the following best characterizes the contradiction between sectoral GDP contribution and employment absorption?**

A. Manufacturing became the primary employment generator
B. Agriculture contributed declining GDP share but absorbed majority employment
C. Industry contributed the most to GDP and employment
D. Services led GDP growth and employment generation equally

Answer: B

Sol: The correct answer is **(B) Agriculture contributed declining GDP share but absorbed majority employment**

Explanation:
• During the pre-1991 era, India experienced a structural paradox where the share of agriculture in GDP declined significantly, but the proportion of the workforce dependent on it did not decrease at the same rate.
• This led to high levels of disguised unemployment in the primary sector.

Information Booster:
• This phenomenon is often cited as a failure of the industrial sector to absorb the surplus labor from agriculture during the license raj era.

Additional Knowledge:
• Manufacturing (Option A): Remained stagnant due to heavy regulations.
• Services (Option D): Started growing rapidly only post-1991 reforms.

Q.14 **Which is the primary source of helium on Earth, accumulating over millions of years?**

A. Radioactive decay of uranium and thorium
B. Mantle convection
C. Photosynthesis
D. Cosmic rays

Answer: A

Sol: The correct answer is **(A) Radioactive decay of uranium and thorium**

Explanation:
• Most of the helium on Earth is a result of the radioactive decay of heavy elements like uranium and thorium found in the Earth's crust.
• Alpha particles released during this decay are essentially helium nuclei, which eventually capture electrons and become helium atoms.

Information Booster:
• Helium is the second most abundant element in the universe, but it is rare on Earth because it is light enough to escape into space.

Additional Knowledge:
• Cosmic rays (Option D): High-energy particles from space, mostly protons, not a primary source of Earth's helium stores.

Q.15 As of July 2025, what is the duration of the Revised Green India Mission (GIM) Plan released in 2025?

A. 2020–2025
B. 2025–2035
C. 2022–2029
D. 2021–2030

Answer: D

Sol: The correct answer is (d) **2021–2030**

Explanation:

- The **National Mission for a Green India (GIM)** is one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**.
- The **Revised GIM Plan**, reviewed and updated in 2025, covers the critical decade from **2021 to 2030**.
- The mission aims at **protecting, restoring, and enhancing** India's diminishing forest cover.
- A primary goal for the 2030 timeline is to create an additional carbon sink of **2.5 to 3 billion tonnes** of CO2 equivalent.
- The plan focuses on a decentralized approach involving **Gram Sabhas** and Joint Forest Management Committees.

Information Booster:

- India's **Nationally Determined Contributions (NDCs)** under the Paris Agreement are aligned with the 2030 GIM targets.
- The mission targets **5 million hectares** of new forest/tree cover and improvement of quality of forest cover on another 5 million hectares.

Additional Knowledge:

2020–2025 (Option a)

- This was the phase for several earlier infrastructure missions, but GIM follows the **UN Decade on Ecosystem Restoration** (2021-2030).

2025–2035 (Option b)

- This might be a future long-term outlook, but the current operational revised plan is anchored to the **2030 global climate goals**.

2022–2029 (Option c)

- An irregular timeframe that does not align with the standard 10-year planning cycle of the mission.

So the correct answer is (d)

Q.16 Which meristem is located near the nodes in some plants?

A. Apical meristem
B. Root meristem
C. Lateral meristem
D. Intercalary meristem

Answer: D

Sol: The correct answer is **(D) Intercalary meristem**

Explanation:

• Intercalary meristems are located at the base of leaves or internodes (near nodes), especially in monocots like grasses.
• They are responsible for the longitudinal growth of the plant parts and help in the regeneration of parts removed by grazing animals.

Information Booster:

• Meristematic tissues are categorized based on their position: Apical, Lateral, and Intercalary.

Additional Knowledge:

• Apical meristem (Option A): Located at growing tips of stems and roots; increases length.
• Lateral meristem (Option C): Located on the sides; increases girth or thickness (secondary growth).

Q.17 Which peak is considered the highest in the Eastern Ghats?

A. Mahendragiri
B. Jindhagada Peak
C. Kolli Hills
D. Shevaroy Hills

Answer: B

Sol: The correct answer is **(B) Jindhagada Peak**

Explanation:
• Jindhagada Peak, located in the Araku Valley of Andhra Pradesh, is the highest peak of the Eastern Ghats with an elevation of 1,690 meters.
• Earlier, Mahendragiri was considered the highest, but newer surveys identified Jindhagada.

Information Booster:
• The Eastern Ghats are a discontinuous range of mountains along India's eastern coast.

Additional Knowledge:
• Anaimudi: The highest peak in the Western Ghats (and South India).

Q.18 **The Kaleshwaram Lift Irrigation Scheme (KLIS), the world's largest multi-stage lift irrigation project, is located in which state?**

A. Karnataka
B. Telangana
C. Andhra Pradesh
D. Maharashtra

Answer: B

Sol: The correct answer is **(B) Telangana**

Explanation:
• The Kaleshwaram Lift Irrigation Scheme is built across the Godavari River in Telangana.
• It is designed to irrigate 45 lakh acres of land and provide drinking water.

Information Booster:
• It holds the record for the world's longest underground irrigation tunnel.
• It lifts water to a height of about half a kilometer.

Additional Knowledge:
• Andhra Pradesh (Option C): Home to the Polavaram Project.
• Karnataka (Option A): Involved in the Almatti Dam project.

Q.19 **Which of the following is true for the plants raised by vegetative propagation?**
Statement A: Vegetatively propagated plant can bear flowers and fruits earlier than those produced from seeds.
Statement B: Vegetatively propagated plants are genetically dissimilar to the parent plant.

A. Statement A is incorrect but statement B is correct
B. Both Statement A and statement B is incorrect
C. Both Statement A and statement B is correct
D. Statement A is correct but statement B is incorrect

Answer: D

Sol: The correct answer is **(D) Statement A is correct but statement B is incorrect**

Explanation:
• Statement A: It is a major advantage of vegetative propagation that plants like roses or bananas grow faster and bear fruit sooner than seed-grown ones.
• Statement B: Since vegetative propagation is asexual, the offspring are genetically identical (clones) to the parent, not dissimilar.

Information Booster:
• Methods include layering, grafting, and cutting.

Additional Knowledge:
• Vegetative propagation is useful for plants that have lost the capacity to produce seeds (e.g., jasmine, orange).

Q.20 **Which economic sector is commonly referred to as the 'industrial sector'?**

A. Primary Sector

B. Secondary Sector
C. Tertiary Sector
D. Service Sector

Answer: B

Sol: The correct answer is **(B) Secondary Sector**

Explanation:
• The Secondary Sector transforms raw materials from the primary sector into finished goods.
• It includes manufacturing, construction, and power generation.

Information Booster:
• This sector is vital for creating physical infrastructure and providing value-added products.

Additional Knowledge:
• Primary Sector (Option A): Focuses on natural resource extraction.
• Service Sector (Option D): Another name for the Tertiary Sector.

Q.21 **Who won the men's singles title at the 2025 French Open, held in June 2025?**

A. Carlos Alcaraz
B. Novak Djokovic
C. Jannik Sinner
D. Alexander Zverev

Answer: A

Sol: The correct answer is **(a) Carlos Alcaraz**

Explanation:
- The Spanish tennis star **Carlos Alcaraz** successfully defended his title to win the **2025 French Open** men's singles.
- He defeated his opponent in a thrilling **five-set match** at **Roland Garros**, Paris.
- This victory marked his **fifth Grand Slam title** overall, solidifying his position as a dominant force on clay courts.
- Alcaraz became one of the youngest players to win multiple titles at the **French Open** in the modern era.
- The tournament is played on **red clay**, which is known for its slower pace and higher bounce.

Information Booster:
- The **French Open** is the second of the four annual **Grand Slam** tournaments, following the Australian Open.
- It is the only Grand Slam tournament currently held on **clay**.

Additional Knowledge:
Novak Djokovic (Option b)
- The legendary player reached the **quarter-finals** but was unable to progress further due to a fitness issue.

Jannik Sinner (Option c)
- The Italian star, who won the **Australian Open** earlier in the year, was the runner-up in the 2025 French Open.

Alexander Zverev (Option d)
- He reached the **semi-finals** but lost to Carlos Alcaraz in a closely contested match.

So the correct answer is (a)

Q.22 **Consider the following statements regarding the Rajasthan International Folk Festival (RIFF), Jodhpur and choose the correct option:**
Statement I: The festival is recognized by UNESCO for promoting creativity and sustainable development.
Statement II: The primary musical focus of RIFF is the exclusive showcasing of Manganiyars and Langas, without international artistic involvement.

A. Statement I is correct, but Statement II is incorrect
B. Statement I is incorrect, but Statement II is correct
C. Both Statement I and Statement II are correct
D. Both Statement I and Statement II are incorrect

Answer: A

Sol: The correct answer is **(a) Statement I is correct, but Statement II is incorrect**.

Explanation:

• **Statement I is correct:** RIFF Jodhpur is a major international event supported by **UNESCO** as a "People's Festival" to promote traditional creative industries and cultural conservation.

• **Statement II is incorrect:** While the festival prominently features the **Manganiyar and Langa** folk musicians of Rajasthan, its hallmark is the **collaboration** between these local artists and **international musicians** from various genres like Jazz, Flamenco, and African folk.

Information Booster:

• The festival is held at the magnificent **Mehrangarh Fort** in Jodhpur.

• It is timed to coincide with the brightest full moon of the year (Sharad Purnima).

Additional Knowledge:

• The Mehrangarh Museum Trust organizes the event under the patronage of Maharaja Gaj Singh II.

Q.23 **Which of the following statements is true about RAM?**

A. RAM retains data even after the computer is turned off.
B. RAM temporarily stores data and instructions currently in use.
C. RAM is used only for storing graphics.
D. RAM is a type of permanent memory.

Answer: B

Sol: The correct answer is **(B) RAM temporarily stores data and instructions currently in use.**

Explanation:

• RAM stands for Random Access Memory. It is the 'working memory' of the computer. Its primary role is to provide the CPU with quick access to the data and instructions that are needed for the programs currently running. When you open an application—like a web browser, a video game, or a document—the computer loads it from the slow permanent storage (HDD or SSD) into the much faster RAM.

• The speed of RAM is its greatest asset. Because the CPU can read and write to RAM almost instantly, it allows for smooth multitasking. However, RAM is 'volatile', meaning it requires electricity to maintain the stored information. As soon as the power is cut or the computer is restarted, all data in the RAM is cleared. This is why you lose unsaved work if your computer crashes.

• The amount of RAM in a computer directly affects its performance. If you have too little RAM, the computer must frequently swap data between the RAM and the hard drive (Virtual Memory), which is much slower and leads to 'lag' or system slowdowns. Therefore, having sufficient RAM is essential for modern computing needs, especially for resource-heavy tasks like video editing or gaming.

Information Booster:

• Modern computers use DDR (Double Data Rate) SDRAM. Currently, DDR4 and DDR5 are the most common standards, with each generation offering higher speeds and lower power consumption.

• 'Random Access' means that any byte of memory can be accessed without touching the preceding bytes, making it much faster than sequential storage like old magnetic tapes.

• RAM is typically installed in slots on the motherboard using modules called DIMMs (Dual In-line Memory Modules).

Additional Knowledge:

• **Option A & D:** These are false because RAM is volatile. 'Permanent' memory refers to ROM or storage drives (Hard Disks/SSDs), which retain data without power.

• **Option C:** While there is specialized 'Video RAM' (VRAM) located on graphics cards specifically for images and textures, system RAM is used for all types of data and program instructions, not just graphics.

Q.24 **Which Constitutional Amendment Act added Bodo, Dogri, Maithili, and Santhali to the Eighth Schedule of the Indian Constitution?**

A. 93rd Amendment Act, 2005
B. 86th Amendment Act, 2002
C. 92nd Amendment Act, 2003
D. 91st Amendment Act, 2003

Answer: C

Sol: The correct answer is **(C) 92nd Amendment Act, 2003**

Explanation:

• The 92nd Amendment Act of 2003 added four languages—Bodo, Dogri, Maithili, and Santhali—to the Eighth Schedule.

• This increased the total number of constitutionally recognized languages in India to 22.

Information Booster:

• The 21st Amendment (1967) added Sindhi, and the 71st Amendment (1992) added Konkani, Manipuri, and Nepali.

Additional Knowledge:
• 91st Amendment (Option D): Deals with limiting the size of the Council of Ministers.
• 86th Amendment (Option B): Made Education a Fundamental Right.

Q.25 **Which organisation released the "Fiscal Health Index (FHI) 2025" in January 2025?**

A. Ministry of Finance
B. NITI Aayog
C. Reserve Bank of India
D. Comptroller & Auditor General of India

Answer: B

Sol: The correct answer is (b) NITI Aayog
Explanation:
● In January 2025, NITI Aayog released the Fiscal Health Index (FHI) to evaluate and rank the financial management and stability of various Indian states.
● The index measures states on parameters like fiscal deficit, debt-to-GSDP ratio, and tax revenue growth.
Information Booster:
● It aims to promote Competitive Federalism among states to improve their financial discipline.
● NITI Aayog acts as the premier policy think tank of the Indian government.
Additional Knowledge:
● Finance Commission: A constitutional body (Article 280) that recommends the distribution of tax proceeds between the Union and States.

Q.26 **The escape velocity from Earth is approximately 11.2 km/s. If Earth's radius were doubled but mass remained the same, what would be the new escape velocity?**

A. 7.9 km/s
B. 11.2 km/s
C. 15.8 km/s
D. 5.6 km/s

Answer: A

Sol: The correct answer is **(A) 7.9 km/s**

Explanation:
• The formula for escape velocity is $v_e = \sqrt{2GM/R}$.
• If the radius (R) is doubled while mass (M) remains constant, the escape velocity becomes $v_e/\sqrt{2}$.
• Therefore, $11.2/1.414 \approx 7.9 km/s$.
Information Booster:
• Escape velocity is independent of the mass of the escaping object.
Additional Knowledge:
• 11.2 km/s (Option B): Is the actual escape velocity from the surface of the Earth.

Q.27 **What was the theme of the 78th World Health Assembly, 2025, held in Geneva in May 2025?**

A. Health for All: Building Resilient Systems
B. Advancing Equity in Global Health
C. One World for Health
D. Universal Health Coverage: A Global Need

Answer: C

Sol: The correct answer is **(c) One World for Health**

Explanation:
- The **78th World Health Assembly (WHA)** was held in **Geneva, Switzerland**, in May 2025.
- The official theme for the 2025 session was '**One World for Health**'.
- The assembly focused on strengthening **global health architecture** and pandemic preparedness.
- Member states discussed the progress of the **Pandemic Treaty** and amendments to the International Health Regulations.
- India's delegation highlighted the importance of **traditional medicine** and digital health tools.

Information Booster:

- The World Health Assembly is the **decision-making body** of the WHO (World Health Organization).
- It is attended by delegations from all WHO Member States and focuses on the **health agenda** prepared by the Executive Board.

Additional Knowledge:

Health for All (Option a)

- 'Health for All' was the **overarching goal** of WHO's 75th anniversary in 2023 but not the specific 2025 theme.

Advancing Equity (Option b)

- Equity is a recurring **sub-theme** in WHO discussions but was not the primary title for the 78th assembly.

Universal Health Coverage (Option d)

- **UHC** is a core objective of the WHO, but 'One World for Health' was the designated 2025 Assembly tagline.

So the correct answer is (c)

Q.28 **What was the highlight of the Athachamayam 2025 procession in terms of a visual spectacle?**

A. A 50-feet statue of Mahabali
B. A 60-feet Athapookkalam (floral carpet)
C. A parade of traditional elephants
D. A 70-feet ceremonial flag

Answer: B

Sol: **Correct Answer: (b) A 60-feet Athapookkalam (floral carpet)**

Explanation:

· The **60-feet Athapookkalam** created with **1,500 kg of flowers** was a major highlight, symbolizing the grandeur of Onam celebrations.

Information Booster:

· The Athapookkalam was crafted by **150 members** of the **Sayahna Souhruda Kootayma** and took place at the **Thekkinkad Maidan**.

· It reflects Kerala's rich floral artistry and tradition.

Q.29 **Who among the following was a prominent disciple of Ramanuja's Sri Vaishnava tradition who played a significant role in spreading its Bhakti teachings to North India?**

A. Ramanujacharya
B. Namdev
C. Madhvacharya
D. Ramananda

Answer: D

Sol: The correct answer is **(D) Ramananda**

Explanation:

• Ramananda was a 14th-century Vaishnava devotional poet-saint who lived in Varanasi.

• He is considered the bridge between the Bhakti movement of South India (Ramanuja tradition) and North India. He was the first to teach in Hindi instead of Sanskrit.

Information Booster:

• Ramananda's disciples included diverse figures like Kabir (a Muslim weaver), Ravidas (a cobbler), and Sena (a barber).

Additional Knowledge:

• Ramanujacharya (Option A): The founder of Vishishtadvaita philosophy based in the South.

• Namdev (Option B): A saint from the Varkari tradition of Maharashtra.

Q.30 **Who inaugurated the Rising North East Investors Summit 2025 in May 2025?**

A. Finance Minister Nirmala Sitharaman
B. Prime Minister Narendra Modi

C. President Droupadi Murmu
D. Home Minister Amit Shah

Answer: B

Sol: The correct answer is **(B) Prime Minister Narendra Modi**

Explanation:
• Prime Minister Narendra Modi inaugurated the 'Rising North East Investors Summit 2025' in May 2025, emphasizing the region's potential as India's gateway to South East Asia (Act East Policy).
• The summit aimed to showcase investment opportunities in various sectors like organic farming, tourism, IT, and clean energy in the eight North-Eastern states.
• The PM highlighted the massive infrastructure development in the region, including the 'Ashta Lakshmi' connectivity projects.

Information Booster:
• **Purpose:** To attract global and domestic investors to the North East and boost the local economy and employment.
• **The 'Ashta Lakshmi' Concept:** Refers to the eight states of North East India as eight forms of prosperity.
• **MDoNER:** The Ministry of Development of North Eastern Region is the primary nodal agency for coordinating development efforts in the region.

Additional Knowledge:
• **Finance Minister (Option A):** While she deals with the financial allocations for the region, the high-level inauguration of such a major investment summit is typically handled by the PM.
• **President (Option C):** The President usually inaugurates national cultural events or addresses joint sessions, whereas economic summits are led by the executive head.
• **Home Minister (Option D):** Amit Shah is deeply involved in the security and peace accords of the NE, but the investor-focused summit falls under the PM's economic leadership.

Q.31 **Which of the following is responsible for the dispersion of white light through a glass prism?**

A. White light contains only one colour
B. Different colours of light travel at different speeds in glass
C. The prism absorbs some colours
D. Different colours of light travel at the same speed in glass

Answer: B

Sol: The correct answer is **(B) Different colours of light travel at different speeds in glass**

Explanation:
• White light consists of seven colours, each having a different wavelength.
• In a medium like glass, the speed of light varies for different wavelengths; therefore, different colours bend at different angles when passing through a prism.

Information Booster:
• In vacuum or air, all colours of light travel at the same speed (approx 3 x 10^8 m/s).
• The refractive index of a material is highest for violet and lowest for red light.

Additional Knowledge:
• Option D is incorrect because if all colours travelled at the same speed in glass, no dispersion would occur.

Q.32 **The 'One Nation, One Ration Card' (ONORC) scheme allows beneficiaries to receive their food grains from where?**

A. Only from their designated ration shop
B. From any Fair Price Shop (FPS) across the country
C. Directly from farmers
D. From any supermarket

Answer: B

Sol: The correct answer is **(B) From any Fair Price Shop (FPS) across the country**

Explanation:
• ONORC is a technology-driven scheme that enables migrant beneficiaries to access their food grain entitlements under NFSA from any FPS in the country.
• It uses biometric authentication on electronic Point of Sale (ePoS) devices.

Information Booster:
• This scheme is particularly beneficial for migrant workers who move across state borders for work.

Additional Knowledge:
• NFSA stands for National Food Security Act, 2013.

Q.33 **Which of the given writs literally means command, i.e. to command a person to do its duty?**

A. Prohibition
B. Certiorari
C. Mandamus
D. Quo warranto

Answer: C

Sol: The correct answer is **(C) Mandamus**

Explanation:
• Mandamus is a Latin term meaning 'we command'.
• It is issued by a court to a public official or body asking them to perform a duty that they have failed or refused to perform.

Information Booster:
• It cannot be issued against a private individual, the President, or Governors.

Additional Knowledge:
• Habeas Corpus: Literally means 'to have the body'.
• Quo warranto (Option D): Means 'by what authority'.

Q.34 **What was the theme of International Day of Democracy 2025, observed in September 2025?**

A. Achieving Gender Equality, Action by Action
B. Strengthening Democracy, Inspiring Participation
C. Democracy for Development
D. Voices for Change

Answer: B

Sol: The correct answer is (b) Strengthening Democracy, Inspiring Participation

Explanation:
• The **International Day of Democracy** is observed annually on **September 15** across the globe.
• The theme for **2025** was '**Strengthening Democracy, Inspiring Participation**', focusing on the importance of inclusive engagement in governance.
• The day was established by a resolution passed by the **United Nations General Assembly** in 2007.
• It serves as an opportunity to **review the state of democracy** in the world and uphold the principles of freedom and human rights.
• The 2025 theme emphasizes that democracy is both a **process and a goal**, which only thrives with full participation from all citizens.

Information Booster:
• The date (September 15) commemorates the adoption of the **Universal Declaration on Democracy** by the Inter-Parliamentary Union in 1997.
• **Article 21(3)** of the Universal Declaration of Human Rights states that the **will of the people** shall be the basis of the authority of government.

Additional Knowledge:
Achieving Gender Equality (Option a)
• While a vital UN goal, this is usually associated with **International Women's Day** themes.
Democracy for Development (Option c)
• This captures the spirit of older themes but was not the official title for the 2025 observance.
Voices for Change (Option d)
• A common slogan for social activism, but the 2025 UN theme specifically highlighted **participation** and **strengthening** institutions.

So the correct answer is (b)

Q.35 **What official post, meaning 'Master of Ceremonies', was Alauddin Khalji appointed to initially, under Jalaluddin Khalji?**

A. Arizi-i-Mumalik
B. Wazir-i-Mumalik
C. Amir-i-Tuzuk
D. Sadr-us-Sudur

Answer: C

Sol: The correct answer is **(C) Amir-i-Tuzuk**

Explanation:
• Before ascending the throne as the Sultan of Delhi, Alauddin Khalji held several important administrative and military positions under his uncle and father-in-law, Sultan Jalaluddin Khalji. One of the earliest prominent posts he was appointed to was that of 'Amir-i-Tuzuk'.
• The title 'Amir-i-Tuzuk' literally translates to 'Master of Ceremonies' or 'Marshal'. The primary responsibility of this official was to oversee the royal court's protocols, organize processions, and ensure that the ceremonies were conducted according to the established traditions and dignity of the Sultanate.
• This role allowed Alauddin to gain intimate knowledge of court politics and the inner workings of the royal administration. His efficiency in this and subsequent roles like the Governor of Kara paved the way for his eventual rise to power.
• His appointment to such a prestigious post also indicated the high trust Jalaluddin placed in him, which Alauddin eventually used to his advantage when he assassinated Jalaluddin in 1296 to seize the throne.

Information Booster:
• Alauddin Khalji later introduced significant reforms, including the 'Dagh' (branding of horses) and 'Huliya' (descriptive roll of soldiers) systems.
• He was the first Sultan of Delhi to establish a large, standing army paid in cash.
• His market control regulations are considered some of the most advanced administrative measures of the medieval period.

Additional Knowledge:
• **Arizi-i-Mumalik (Option A):** The head of the military department (Diwan-i-Arz). He was responsible for the recruitment, training, and maintenance of the army.
• **Wazir-i-Mumalik (Option B):** The Prime Minister or Chief Minister, who headed the finance department (Diwan-i-Wizarat) and held overall charge of civil administration.
• **Sadr-us-Sudur (Option D):** The head of the religious and judicial department. He looked after religious endowments, charities, and the appointment of Qazis.

Q.36 **What is the primary function of system software in a computer?**

A. To manage hardware and provide a platform for application software
B. To perform specific tasks like word processing and web browsing
C. To develop new software applications
D. To create and edit multimedia content

Answer: A

Sol: The correct answer is **(A) To manage hardware and provide a platform for application software**

Explanation:
• System software acts as the critical intermediary between the computer's physical hardware and the user or the applications they run. Its primary job is to control the internal operations of the computer system and manage resources like the Central Processing Unit (CPU), memory (RAM), storage devices, and peripheral hardware (like printers or scanners). Without system software, the hardware would essentially be a collection of useless electronic components.
• The most prominent example of system software is the Operating System (OS), such as Windows, macOS, or Linux. The OS provides the user interface and coordinates how different programs access the hardware. For instance, when you save a file, the application software sends a request to the system software, which then handles the actual writing of data to the hard drive or SSD.
• In addition to the OS, system software includes device drivers (which allow the OS to talk to specific hardware), utility programs (like disk defragmenters or antivirus tools), and language translators (like compilers and interpreters). It ensures that the computer runs efficiently and provides a stable environment for other software to function.

Information Booster:
• System software runs in the background and is usually initialized during the 'Booting' process when the computer is turned on.
• It is generally designed to be hardware-dependent but application-independent, meaning it is built for specific hardware architectures but can support many different types of user programs.
• BIOS (Basic Input/Output System) is a type of low-level system software stored on a chip on the motherboard that starts the computer and loads the operating system.

Additional Knowledge:
• **Option B (Specific tasks):** This describes 'Application Software' (like MS Word or Chrome), which is designed to help the user perform specific end-user tasks.
• **Option C (Develop software):** This refers to 'Programming Software' or 'Development Tools' such as Integrated Development Environments (IDEs), compilers, and debuggers.
• **Option D (Multimedia):** This is a sub-category of Application Software, such as Adobe Photoshop or VLC Media Player, focused on creative or entertainment tasks.

Q.37 **Which of the following is the primary cause of the rain shadow effect in the Western Ghats region of India?**

A. The Himalayas blocking the monsoon winds
B. The Western Ghats intercepting moisture-laden winds from the Arabian Sea
C. The Thar Desert drawing moisture from the monsoon winds
D. The Deccan Plateau blocking winds from the Bay of Bengal

Answer: B

Sol: The correct answer is **(B) The Western Ghats intercepting moisture-laden winds from the Arabian Sea**

Explanation:
• The rain shadow effect is a patch of land that has been forced to become a desert or semi-arid region because mountain ranges blocked all plant-growing, rainy weather.
• In India, the Western Ghats (Sahyadri) run parallel to the western coast. During the Southwest Monsoon, moisture-laden winds from the Arabian Sea hit the windward side (western slopes) of the Ghats.
• As the air is forced to rise over the mountains, it cools and condenses, causing heavy orographic rainfall on the western side.
• By the time the air crosses to the eastern side (leeward side/Deccan Plateau), it has lost most of its moisture and descends as dry, warm air. This results in significantly lower rainfall in regions like Vidarbha and Interior Karnataka.

Information Booster:
• **Windward Side:** Receives heavy rainfall (e.g., Mahabaleshwar, Mangalore).
• **Leeward Side:** The rain shadow area (e.g., Pune, Bijapur).
• **Orographic Rainfall:** Rainfall caused by the physical barrier of mountains forcing air upward.

Additional Knowledge:
• **Himalayas (Option A):** The Himalayas block the cold Siberian winds and force the monsoon winds to shed their moisture over the Indo-Gangetic plains, but they are not responsible for the rain shadow on the Deccan Plateau.
• **Thar Desert (Option C):** The Thar Desert is actually a result of the Aravalli range running parallel to the monsoon winds, meaning the winds do not hit a barrier to rise and condense.
• **Deccan Plateau (Option D):** The Plateau itself is the **region** affected by the rain shadow; it does not block the winds to create the effect.

Q.38 **Under which Article is the Inter-State Council established to promote coordination between the Union and States?**

A. 262
B. 263
C. 280
D. 312

Answer: B

Sol: The correct answer is **(B) 263**

Explanation:
• Article 263 of the Constitution empowers the President to establish an Inter-State Council.
• It serves as a forum for discussing and investigating matters of common interest between the Union and states.

Information Booster:
• It was established on the recommendation of the Sarkaria Commission in 1990.

Additional Knowledge:
• Article 262 (Option A): Deals with the adjudication of disputes relating to waters of inter-state rivers.
• Article 280 (Option C): Provision for the Finance Commission.

Q.39 **Who among the following won the 2025 Pritzker Architecture Prize awarded in May 2025?**

A. Shigeru Ban
B. Liu Jiakun
C. Jeanne Gang
D. David Chipperfield

Answer: B

Sol: The correct answer is (b) Liu Jiakun

Explanation:
- Chinese architect **Liu Jiakun** was announced as the winner of the **2025 Pritzker Architecture Prize**, often referred to as the "Nobel Prize of Architecture."
- He is recognized for his **context-sensitive approach** that blends traditional Chinese aesthetics with modern materials and social responsibility.
- Jiakun is the founder of **Jiakun Architects**, based in Chengdu, and is known for projects that emphasize local craftsmanship.

- His notable works include the **West Village Basis Yard** in Chengdu and the **Suzhou Museum of Imperial Kiln Brick**.
- The jury praised his ability to create spaces that respect the **cultural and geographical environment** while serving the community.

Information Booster:

- The Pritzker Prize was established by the **Pritzker family** in 1979 through the Hyatt Foundation.
- It honors a living architect whose built work demonstrates a combination of talent, vision, and commitment.

Additional Knowledge:

Shigeru Ban (Option a)

- He is a Japanese architect who won the Pritzker Prize in **2014**, known for his innovative use of paper tubes and disaster relief structures.

Jeanne Gang (Option c)

- She is a prominent American architect and founder of Studio Gang, recognized for her sustainable designs like the Aqua Tower.

David Chipperfield (Option d)

- He is a British architect who was the Pritzker Architecture Prize Laureate in **2023**.

So the correct answer is (b)

Q.40 **India's first "Deep Ocean Mission" has strategic relevance mainly for which of the following?**

A. Arctic fisheries
B. Polymetallic nodules near the Central Indian Ocean Basin
C. Adriatic Sea minerals
D. Malacca Strait connectivity

Answer: B

Sol: The correct answer is **(B) Polymetallic nodules near the Central Indian Ocean Basin**

Explanation:

• The Deep Ocean Mission aims to explore the deep ocean for resources, specifically Polymetallic Nodules (PMN).
• India has been allotted a site in the Central Indian Ocean Basin (CIOB) by the International Seabed Authority (ISA) for this purpose.

Information Booster:

• Polymetallic nodules contain valuable minerals like Manganese, Nickel, Cobalt, and Copper.
• The mission is spearheaded by the Ministry of Earth Sciences (MoES).

Additional Knowledge:

• The mission also includes the development of a manned submersible 'Matsya 6000' to reach depths of 6,000 meters.

Q.41 **A bus covers a distance of 30 km in 45 minutes and further it covers double the distance covered earlier in 60 minutes. The average speed of the bus is _____ km/hr (rounded off to two decimal places).**

A. 51.43
B. 55.41
C. 54.31
D. 53.14

Answer: A

Sol: **Given:**

First distance = 30 km, Time = 45 minutes

Second distance = 2 × 30 = 60 km, Time = 60 minutes

Formula Used:

Average speed = Total distance ÷ Total time

1 hour = 60 minutes

Solution:

Total distance = 30 + 60 = 90 km

Total time = 45 + 60 = 105 minutes = $\frac{105}{60}$ = 1.75 hours

Average speed = $\frac{90}{1.75}$ = 51.43 km/hr

Q.42 **Find the mean proportion of 5.76 and 0.88. (rounded off to two decimal places)**

A. 2.25
B. 2.85
C. 2.54
D. 2.34

Answer: A

Sol: **Given:**

Find the mean proportion (geometric mean) of 5.76 and 0.88.

Formula Used:

Mean Proportion = $\sqrt{a \times b}$

Solution:

Mean Proportion = $\sqrt{5.76 \times 0.88}$ = $\sqrt{5.0688}$ ≈ 2.25 (rounded to two decimal places)

Q.43 **Kanchan bought a ring and sold it to Mohan at a profit of 5%. Mohan sold it to Pramod at a loss of 25%. If Pramod paid Rs. 3150, then the cost price (in Rs.) of the ring Kanchan bought is**

A. 4000
B. 3750
C. 3800
D. 4150

Answer: A

Sol: **Given:**

Pramod paid ₹3150.

Kanchan's profit = 5%.

Mohan's loss = 25%.

Formula Used:

$$SP = CP \times \left(1 + \frac{\text{Profit}}{100}\right)$$

$$SP = CP \times \left(1 - \frac{\text{Loss}}{100}\right)$$

Solution:

Pramod's SP = ₹3150.

Mohan's CP = $\frac{3150}{1 - \frac{25}{100}}$ = ₹4200

Kanchan's CP = $\frac{4200}{1 + \frac{5}{100}}$ = ₹4000

Q.44 **What is the highest number between 5000 and 5500, which when divided by 12,16 and 24, would leave a remainder 9?**

A. 5184
B. 5148
C. 5814

D. 5481

Answer: D

Sol: **Given:**
Range: 5000 to 5500
Divisors: 12, 16, 24
Remainder: 9
Formula Used:
LCM of divisors to find the common multiple.
LCM × n + remainder to calculate the number.
Solution:
LCM(12, 16, 24) = 48
Possible numbers: 5000 ≤ (48 × n + 9) ≤ 5500
For n = 104: 48 × 104 + 9 = 5016 + 9 = 5025
For n = 114: 48 × 114 + 9 = 5472 + 9 = 5481
For n = 115: 48 × 115 + 9 = 5520 + 9 = 5529 (Exceeds 5500)
5481 is the correct answer.

Q.45 **Five persons in a group have salaries of Rs. 15,000, Rs. 25,000, Rs. 30,000, Rs. 12,000 and Rs. 18,000, respectively. What is the average salary (in Rs.) per person of the group?**

A. 18,000
B. 20,000
C. 21,000
D. 19,000

Answer: B

Sol: **Formula Used:**
Average salary = (Sum of all salaries) ÷ Total number of persons
Solution:
Sum of all salaries = ₹15,000 + ₹25,000 + ₹30,000 + ₹12,000 + ₹18,000 = ₹100,000
Total number of persons = 5
Average salary = ₹100,000 ÷ 5 = ₹20,000

Q.46 **The LCM of 40, 20, 195 and 160 is:**

A. 6169
B. 6319
C. 6240
D. 6219

Answer: C

Sol: **Formula Used:**
LCM = Lowest Common Multiple of all given numbers
Solution:
Prime factorization of 40 = $2^3 \times 5$
Prime factorization of 20 = $2^2 \times 5$
Prime factorization of 195 = $3 \times 5 \times 13$
Prime factorization of 160 = $2^5 \times 5$
LCM = Highest power of all prime factors = $2^5 \times 3 \times 5 \times 13 = 32 \times 3 \times 5 \times 13 = 6240$

Q.47 **A pipe can fill a water tank in 36 minutes, and another can fill it in 48 minutes, but a third pipe can empty it in 18 minutes. The first two pipes are kept open for 16 minutes at the beginning, and then the third pipe is also opened. How long does it take to empty the tank?**

A. 85 min
B. 112 min
C. 120 min
D. 98 min

Answer: B

Sol: **Given:**

Pipe A fills in 36 minutes

Pipe B fills in 48 minutes

Pipe C empties in 18 minutes

First 16 minutes: A and B open

Then A, B, C open together

Formula Used:

Work = Rate × Time

Net Rate = Sum of individual rates

Solution:

Rate of A = $\frac{1}{36}$ tank/min

Rate of B = $\frac{1}{48}$ tank/min

Work in first 16 minutes = $(\frac{1}{36} + \frac{1}{48}) \times 16 = \frac{7}{9}$ of tank

Net rate of A, B, C = $\frac{1}{36} + \frac{1}{48} - \frac{1}{18} = -\frac{1}{144}$ tank/min

Time to empty = $\frac{\frac{7}{9}}{\frac{1}{144}}$ = 112 minutes

Alternate Solution:

LCM of 36, 48, 18 = 144

So, assume tank capacity = 144 units.

Rate of A = 144 ÷ 36 = 4 units/min

Rate of B = 144 ÷ 48 = 3 units/min

Rate of C = −(144 ÷ 18) = −8 units/min

Work done in one minutes (only A and B open) = A + B = 4 + 3 = 7 units/min

Work done in 16 minutes = 7 × 16 = 112 units

So after 16 minutes, 112 units of water are in the tank.

A + B + C = 4 + 3 − 8 = −1 unit/min

(negative means tank is getting emptied)

Time = Work ÷ Rate = 112 ÷ 1 = 112 minutes

Q.48 **A retailer offers a discount scheme where customers receive a 10% discount on purchases between Rs. 1,000 and Rs. 5,000, and a 20% discount on purchases above Rs. 5,000. If a customer buys goods worth Rs. 6,000, how much will they save (in Rs.) compared to the original price?**

A. 1,000

B. 1,100

C. 1,200

D. 1,300

Answer: C

Sol: **Given:**

Original price of goods = ₹6,000

Discount for purchases above ₹5,000 = 20%

Formula Used:

Discount = Original Price × Discount Rate

Amount saved = Discount

Solution:

Discount = ₹6,000 × $\frac{20}{100}$ = ₹1,200

∴ The correct answer is ₹1,200.

Q.49 **The average weight of Mukund, Sachin and Chetan is 46 kg. If the average weight of Mukund and Sachin be 39 kg and that of Sachin and Chetan be 45 kg, then the weight of Sachin (in kg) is:**

A. 50

B. 45

C. 40

D. 30

Answer: D

Sol: **Given:**
Average weight of Mukund, Sachin and Chetan = 46 kg
Average weight of Mukund and Sachin = 39 kg
Average weight of Sachin and Chetan = 45 kg
Formula Used:
Sum =Average×Number of persons
Solution:
Total weight of Mukund, Sachin, and Chetan = 46 × 3 = 138 kg
Total weight of Mukund and Sachin = 39 × 2 = 78 kg
Total weight of Sachin and Chetan = 45 × 2 = 90 kg
Weight of Sachin = (78 + 90 - 138) = 30 kg

Q.50 **The first and second numbers are, respectively, 35% and 45% less than the third number. The second number is what percentage of the first number?**

A. $64\frac{7}{12}\%$
B. $79\frac{2}{19}\%$
C. $83\frac{8}{13}\%$
D. $84\frac{8}{13}\%$

Answer: D

Sol: **Given:**
First number is 35% less than the third number
Second number is 45% less than the third number
Formula Used:
$$\text{Percentage} = \left(\frac{\text{Second Number}}{\text{First Number}}\right) \times 100$$
Solution:
Let Third number = 100
First number = 100 - 35% of 100 = 65
Second number = 100 - 45% of 100 = 55
Percentage = $\frac{55}{65} \times 100 = 84\frac{8}{13}\%$

Q.51 **Rodney has two grandsons Amit and Gopal. 11 year old Amit gets some money from Rodney's wealth and 12 year old Gopal gets rest of the money. But Amit and Gopal will get money only when they turn 23 years old. Till then the money is in a bank getting interest at rate 10% compounded annually. When both turn 23, they receive the same amount. How much had Rodney given Gopal (in Rs.) initially, if total money with Rodney was Rs. 23100?**

A. 12450
B. 11000
C. 12100
D. 10750

Answer: C

Sol: **Given:**
Total amount = ₹23,100
Rate of compound interest = 10% per annum
Amit's present age = 11 years
Gopal's present age = 12 years
Both will receive the money at age 23 → Amit invests for 12 years and Gopal for 11 years
Both receive the same final amount
Formula Used:
$$\text{Compound Amount } (A) = P \times \left(1 + \frac{R}{100}\right)^T$$
Solution:

Let Amit's initial amount = P_1 and Gopal's initial amount = P_2

$P_1 + P_2 = 23,100$ ...(i)

Final amounts are equal:

$$P_1 \times (1.1)^{12} = P_2 \times (1.1)^{11}$$

=> $P_1 \times 1.1 = P_2$

=> $P_2 = 1.1P_1$

Substitute in (i): $P_1 + 1.1P_1 = 23,100$

$2.1P_1 = 23,100$

$P_1 = 23,100 \div 2.1 = 11,000$

$P_2 = 1.1 \times 11,000 = 12,100$

Q.52 The LCM of 42, 36, 312 and 126 is:

A. 6587
B. 6616
C. 6520
D. 6552

Answer: D

Sol: **Formula Used:**

LCM = The smallest number that is a multiple of all given numbers.

Solution:

Prime factorization of 42 = 2 × 3 × 7

Prime factorization of 36 = $2^2 \times 3^2$

Prime factorization of 312 = 2^3 × 3 × 13

Prime factorization of 126 = 2 × 3^2 × 7

LCM = $2^3 \times 3^2$ × 7 × 13 = 8 × 9 × 7 × 13 = 6552

Q.53 Ravi travels from City A to City B. If Ravi drives his car at $\frac{2}{3}$ of his normal speed, then he reaches City B 47 minutes late. Find the time (in minutes) that Ravi would have taken to travel from City A to City B if he drove at his normal speed.

A. 100
B. 94
C. 84
D. 102

Answer: B

Sol: **Given:**

Ravi travels from City A to City B. If Ravi drives his car at $\frac{2}{3}$ of his normal speed, then he reaches City B 47 minutes late.

Concept Used:

The time taken to travel is inversely proportional to the speed, meaning that if speed decreases, time increases.

Solution:

Let normal time = t minutes.

New time = 3t/2

Extra time = 3t/2 - t = 47

t/2 = 47 → t = 94

Normal travel time = 94 minutes.

Alternate Solution:

For constant distance;

$$\text{Speed} \propto \frac{1}{Time}$$

Speed ratio = 2 : 3

Time ratio = 3 : 2

3- 2 = 47 min.

1 unit = 47 min.

2 unit = 94 min.

time taken by normal speed = 2 × 47 = 94 min.

Q.54 **The simple interest on a principal amount (in Rs.) is Rs. 177 for a period of 5 years at the rate of 2% per annum. The principal amount (in Rs.) is:**

A. 1764
B. 1773
C. 1771
D. 1770

Answer: D

Sol: **Given:**
Simple Interest (SI) = ₹177
Time (T) = 5 years
Rate of interest (R) = 2% per annum
Formula Used:
$\text{Simple Interest (SI)} = \frac{P \times R \times T}{100}$
Solution:
$=> 177 = \frac{P \times 2 \times 5}{100}$

$=> 177 = \frac{10P}{100}$

$=> P = \frac{177 \times 100}{10}$

$=> P = 1770$

Q.55 **Find the volume of a cylinder with radius of base 7 cm and height 10.2 cm. (Use pi = 22/7)**

A. 1570.8 cm^3
B. 1573.8 cm^3
C. 1572.8 cm^3
D. 1571.8 cm^3

Answer: A

Sol: **Given:**
Radius (r) = 7 cm
Height (h) = 10.2 cm
Formula Used:
Volume of a cylinder = π × r^2 × h
Solution:
=> Volume = $\frac{22}{7}$ × 7^2 × 10.2
=> $\frac{22}{7}$ × 49 × 10.2
=> 22 × 7 × 10.2
=> 22 × 71.4 = 1570.8

Q.56 **The price (per litre) of petrol increases by 80%. By what percent should its consumption be reduced such that the expenditure on it increases by 17% only?**

A. 66%
B. 65%
C. 35%
D. 48%

Answer: C

Sol: **Given:**

Percentage increase in price = 80%

Percentage increase in expenditure = 17%

Formula Used:

If the price of a commodity increases by x%, and the expenditure is allowed to increase by y%,

$$\text{Percentage decrease} = \left(\frac{x-y}{x+100}\right) \times 100$$

Solution:

$$\text{Percentage decrease} = \left(\frac{80-17}{80+100}\right) \times 100$$

$$\text{Percentage decrease} = \left(\frac{63}{180}\right) \times 100 = 35\%$$

Alternate Solution:

Let:

Original price = 100

Original consumption = 100

=>Original expenditure = 100 × 100 = 10,000

New price = 100 + 80 = 180

New expenditure = 10,000 × 1.17 = 11,700

New consumption = $\frac{11700}{180}$ = 65

Reduction = 100 - 65 = 35

Required reduction % = $\frac{100-65}{100} \times 100 = 35\%$

Q.57 **The marked price of an article is 30% above the cost price, and the article is sold at 10% less than the marked price. The profit percentage is:**

A. 15%
B. 19%
C. 13%
D. 17%

Answer: D

Sol: **Given:**

Marked Price (MP) is 30% above Cost Price (CP)

Selling Price (SP) is 10% less than MP

Formula Used:

$$\text{Profit \%} = \frac{SP - CP}{CP} \times 100$$

Solution:

Let CP of an article = 100

Marked Price (MP) is 30% above Cost Price (CP)

MP = CP × 1.30 = 100 × 1.30 = 130

Selling Price (SP) is 10% less than MP

SP = MP × 0.90 = 130 × 0.90 = 117

Profit = SP – CP = 117 – 100 = 17

Profit % = $\frac{17}{100}$ × 100 = 17%

Q.58 The rate of advertisement on a TV channel is directly proportional to the duration of the advertisement. If the rate of an advertisement of 20 seconds is Rs. 1,25,000, then the rate of an advertisement of 25 seconds will be Rs. _____.

A. 1,55,620
B. 1,65,250
C. 1,56,250
D. 1,62,550

Answer: C

Sol: **Given:**

Rate is directly proportional to duration

20 seconds advertisement costs ₹1,25,00

Duration required = 25 seconds

Formula Used:

If rate ∝ duration, then $\frac{\text{Rate}_1}{\text{Rate}_2} = \frac{\text{Time}_1}{\text{Time}_2}$

Solution:

$$\frac{R_1}{T_1} = \frac{R_2}{T_2}$$

$$\frac{1,25,000}{20} = \frac{R_2}{25}$$

$$R_2 = \frac{1,25,000 \times 25}{20}$$

$$R_2 = 1,56,250$$

Q.59 The value of $\left(\frac{2}{3} \div \frac{3}{4} \text{ of } \frac{5}{6}\right) \div \left(\frac{2}{3} \div \frac{3}{4} \times \frac{5}{6}\right) - \frac{5}{6} - \frac{11}{25} \times \left(0.\overline{49} \div 0.5\overline{4}\right)$ is:

A. 151/150
B. 31/150
C. 37/30
D. 53/30

Answer: B

Sol: **Formula Used:**

$0.a\bar{b} = \frac{ab - a}{90}$,$0.\bar{ab} = \frac{ab}{99}$

Solution:

$$\left(\frac{2}{3} \div \frac{15}{24}\right) \div \left(\frac{2}{3} \times \frac{4}{3} \times \frac{5}{6}\right) - \frac{5}{6} - \frac{11}{25} \times \left(\frac{49}{99} \div \frac{54 - 5}{90}\right)$$

$$= \left(\frac{2}{3} \times \frac{24}{15}\right) \div \frac{20}{27} - \frac{5}{6} - \frac{11}{25} \times \left(\frac{49}{99} \times \frac{90}{49}\right)$$

$$= \frac{16}{15} \times \frac{27}{20} - \frac{5}{6} - \frac{11}{25} \times \frac{10}{11}$$

$$= \frac{432}{300} - \frac{5}{6} - \frac{10}{25}$$

$$= \frac{36}{25} - \frac{5}{6} - \frac{2}{5}$$

$$= \frac{216}{150} - \frac{125}{150} - \frac{60}{150}$$

$$= \frac{31}{150}$$

Q.60 A shopkeeper gives two successive discounts of 10% and 20% on the marked price of an article and still makes a profit of 8%. By what percent is the marked price greater than the cost price?

A. 30
B. 50
C. 28
D. 38

Answer: B

Sol: **Given:**

Successive discounts = 10% and 20%
Profit = 8%
Find: % by which Marked Price (MP) is more than Cost Price (CP).

Formula Used:

SP in terms of MP (Marked Price)

If successive discounts d_1% and d_2%:

SP = MP$\times \left(1 - \frac{d_1}{100}\right)\left(1 - \frac{d_2}{100}\right)$

SP in terms of CP (Cost Price)

If profit % is given:

SP = CP $\times \left(1 + \frac{\text{Profit }\%}{100}\right)$

Solution:

Successive discount factor:
$(1 - 0.10)(1 - 0.20) = 0.9 \times 0.8 = 0.72$
So,
SP = 0.72 MP

Profit relation:
SP = 1.08 CP
Now,

0.72 MP = 1.08 CP

MP = $\frac{1.08}{0.72}$CP

MP = 1.5 CP

Thus, MP is:

1.5 CP = CP + 0.5 CP

So,
MP is 50% more than CP

Q.61 **The marks scored by 10 students are given below. 13, 20, 15, 13, 19, 12, 12, 11, 13, 10 The mode of the given data is:**

A. 13
B. 15
C. 19
D. 20

Answer: A

Sol: **Given:**
Marks of 10 students:
13, 20, 15, 13, 19, 12, 12, 11, 13, 10

Find the mode.

Concept Used:

Mode = the value that appears most frequently in the data set.

Solution:

Count frequencies:

13 appears 3 times(highest frequency)

12 appears 2 times

Others appear once

Thus, Mode = 13

Q.62 **Kirti starts business with ₹89,000 and after 3 months, Vaishnavi joins Kirti as her partner. After a year, the profit is divided in the ratio 4 : 3. What is Vaishnavi's contribution in the capital?**

A. ₹88,205
B. ₹90,655
C. ₹89,000
D. ₹88,265

Answer: C

Sol: **Given:**
Kirti's investment = ₹89,000

Vaishnavi joins after 3 months

Total time = 12 months

Profit ratio (Kirti : Vaishnavi) = 4 : 3

Find Vaishnavi's investment

Concept Used:

Partnership profit is divided in the ratio of Investment × Time.

Solution:

$$\frac{I_K \times T_K}{I_V \times T_V} = \frac{4}{3}$$

$$I_K = 89000,; T_K = 12,; T_V = 12 - 3 = 9$$

$$\frac{89000 \times 12}{I_V \times 9} = \frac{4}{3}$$

$$3 \times 89000 \times 12 = 4 \times 9 \times I_V$$

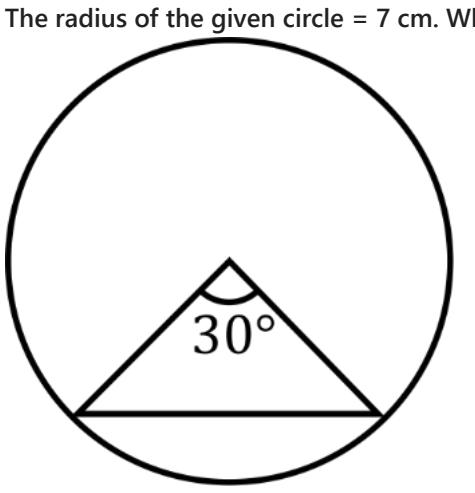
$$3 \times 1068000 = 36 I_V$$

$$3204000 = 36 I_V$$

$$I_V = \frac{3204000}{36} = 89000$$

Thus, Vaishnavi's investment = ₹89,000

Q.63 The radius of the given circle = 7 cm. What is the area of the major segment?



A. 153.42 cm^2
B. 180.25 cm^2
C. 193.41 cm^2
D. 125.58 cm^2

Answer: A

Sol: Given :

Radius r = 7 cm. Central angle for the minor segment is 30°. Find area of the major segment.

Formula Used :

Area of circle = πr^2

Area of sector with angle (θ) (in degrees) = $\frac{\theta}{360}\pi r^2$

Area of isosceles triangle formed by two radii and included angle (θ) : $\frac{1}{2} r^2 \sin\theta$

Minor segment area = sector area - triangle area.

Major segment area = circle area - minor segment area.

Solution :

Area of circle =

$$\pi r^2 = \frac{22}{7} \times 7^2 = 154 \text{cm}^2$$

Minor segment angle = 30°

Area of sector =

$$\frac{30}{360} \times 154 = \frac{1}{12} \times 154 = 12.83\text{cm}^2$$

Area of triangle =

$$\frac{1}{2} \times 7^2 \times \sin 30^\circ = \frac{1}{2} \times 49 \times \frac{1}{2}$$
$$= 12.25\text{cm}^2$$

Area of minor segment =

12.83 - 12.25 $= 0.58\text{cm}^2$

Area of major segment = Area of circle – Area of minor segment

154 - 0.58 = 153.42cm^2

∴ The correct answer is: 153.42 cm^2

Q.64 $\frac{2^3}{3^2} \cdot \frac{3}{2} + (2^3 - 3^2) = \_\_\_\_\_$

A. $\frac{1}{3}$
B. $\frac{27}{11}$
C. $\frac{2^3}{3^3}$
D. $\frac{11}{27}$

Answer: A

Sol: **Given:**

$$\frac{2^3}{3^2} \cdot \frac{3}{2} + (2^3 - 3^2) = \_\_\_\_\_$$

Solution:

$$\frac{8}{9} \times \frac{3}{2} + (8 - 9)$$

$$= \frac{4}{3} - 1$$

$$= \frac{4-3}{3} = \frac{1}{3}$$

Q.65 If $\left(x - \frac{1}{x}\right) = 2\sqrt{3}$, what is the value of $\left(x^3 + \frac{1}{x^3}\right)$, given that x is a positive number?

A. 64
B. 81
C. 52
D. 49

Answer: C

Sol: **Given:**

$$x - \frac{1}{x} = 2\sqrt{3}$$

We need:

$x^3 + \frac{1}{x^3}$

Formula Used:

$$\left(x - \frac{1}{x}\right)^3 = x^3 - \frac{1}{x^3} - 3\left(x - \frac{1}{x}\right)$$

Also, if we know $(x - \frac{1}{x})$, we first find $(x + \frac{1}{x})$ using:

$$(x - \frac{1}{x})^2 = x^2 + \frac{1}{x^2} - 2$$

Then:

$$x^3 + \frac{1}{x^3} = (x + \frac{1}{x})^3 - 3(x + \frac{1}{x})$$

Since x is positive, we use positive roots.

Solution:

$$x - \frac{1}{x} = 2\sqrt{3}$$

Square both sides

$$x^2 + \frac{1}{x^2} - 2 = 12$$

$$x^2 + \frac{1}{x^2} = 14$$

Now,

$$(x + \frac{1}{x})^2 = 14 + 2 = 16$$

$$x + \frac{1}{x} = 4 \quad (\text{positive because } x > 0)$$

Now use cube identity:

$$x^3 + \frac{1}{x^3} = (x + \frac{1}{x})^3 - 3(x + \frac{1}{x})$$

$=4^3 - 3 \times 4$

= 64 - 12 = 52

Q.66 If sin A + cos A = $\sqrt{3}$, then tan A + cot A is equal to:

A. 1
B. 3
C. 0
D. $\frac{1}{3}$

Answer: A

Sol: **Given:**
$\sin A + \cos A = \sqrt{3}$

We need to find:
tan A + cot A

Formula Used:

$\sin^2 A + \cos^2 A = 1$

Solution:

Square both sides of given equation:

$(\sin A + \cos A)^2 = (\sqrt{3})^2$

$\sin^2 A + \cos^2 A + 2\sin A \cos A = 3$

$1 + 2\sin A \cos A = 3$

$2\sin A \cos A = 2$

sin A cos A = 1

Now:

tan A + cot A

$= \frac{\sin^2 A + \cos^2 A}{\sin A \cos A} = \frac{1}{\sin A \cos A}$

$= \frac{1}{\sin A \cos A} = \frac{1}{1} = 1$

Q.67 **A sum of ₹ 14,000 was invested partly at 6% and partly at 7% per annum at simple interest. If the interest received after one year is ₹ 940, what was the ratio of the amounts invested at 6% and 7%?**

A. 3 : 4
B. 5 : 2
C. 4 : 3
D. 2 : 5

Answer: D

Sol: **Given:**

Total investment = ₹14,000

1 Part invested at 6%, 1 part at 7%

Total simple interest received after 1 year = ₹940

Formula Used:

SI = $\frac{P \times R \times T}{100}$

Solution:

Let:

Amount invested at 6% = ₹x

Amount invested at 7% = ₹(14000 − x)

Since time T = 1 year, we calculate interest from both parts and equate the total to ₹940.

$\frac{6x}{100} + \frac{7(14000 - x)}{100} = 940$

6x + 7(14000 - x) = 94000

6x + 98000 - 7x = 94000

$=> -x + 98000 = 94000$

$=> x = 98000 - 94000 = 4000$

So,

Amount at 6% = ₹4000

Amount at 7% = ₹14000 – ₹4000 = ₹10000

Ratio = 4000 : 10000 **= 2 : 5**

Thus, the correct option is **(d) 2 : 5**

Q.68 **The mode and median of a data is 26.7 and 71, respectively. What is the mean of the data? (Use empirical formula.)**

A. 95.1
B. 93.2
C. 94.6
D. 94.3

Answer: B

Sol: **Given:**
Mode = 26.7
Median = 71

Formula Used:

Mode = 3 × Median - 2 × Mean

Solution:

Substituting values:

26.7 = 3 × 71 - 2 × Mean

26.7 = 213 - 2 × Mean

2 × Mean = 213 - 26.7 = 186.3

Mean = $\frac{186.3}{2}$ = 93.15 = 93.2(approx)

Q.69 **The average age of 20 workers in a factory is 30 years. If 5 new workers join the factory, reducing the average by 2 years, the average age of the new workers is-**

A. 20 years
B. 22 years
C. 24 years
D. 26 years

Answer: A

Sol:

Total age sum = 30 years × 20 = 600 years.
New total age sum = 28 years × 25 = 700 years.
Total age of 5 new workers = 700 - 600 = 100 years.
Average age of new workers = 100/5 = 20 years.

Q.70 **A can finish a job in 16 days, and B can finish it in 12 days. If A starts the job and works for 4 days, and then B takes over and A leaves. In how many days will B take to finish the remaining work?**

A. 4 days
B. 5 days
C. 6 days
D. 9 days

Answer: D

Sol:

Total work = LCM of 16 and 12 = 48 unit
Efficiency of A = 48/16 =3 unit/day
Efficiency of B =48/12= 4 unit/day
Work done by A in 4 days = 3×4 = 12 unit
Remaining work = 48 – 12 = 36 unit
B complete the remaining work = $\frac{36}{4}$ = 9 days

Q.71 **What was the day of the week on 15 July 2012?**

A. Saturday
B. Sunday
C. Monday
D. Tuesday

Answer: B

Sol: **Information Given:**
Date = 15 July 2012

Logic:
Use odd days method.

Explanation:
1 Jan 2012 = Sunday
Days from Jan to June:
31 + 29 + 31 + 30 + 31 + 30 = 182
July 15 => +14 days
Total days = 182 + 14 = 196
196 ÷ 7 = remainder 0
So, day remains Sunday.

Final Answer:
Sunday

Final Correct Option:
B

Q.72 **Rajesh ranked 38th from the top and 27th from the bottom in his class. How many students are there in his class?**

A. 62
B. 63
C. 64
D. 65

Answer: C

Sol: **Given**:
Rajesh ranked 38th from the top and 27th from the bottom in his class.
Formula:
Total students = Top rank + Bottom rank − 1
Total = 38 + 27 − 1
Total = 64
So, **64** students are there in his class.
Thus, correct option is (c).

Q.73 **Select the set in which the numbers are related in the same way as are the numbers of the following sets. (NOTE : Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding / subtracting / multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)**
(44, 968, 22)

(26, 650, 25)

A. (34, 173, 5)
B. (18, 108, 6)
C. (15, 348, 23)
D. (23, 210, 9)

Answer: B

Sol: **Information Given:**
Sets: (44, 968, 22), (26, 650, 25)

Logic:
middle = first × third

Explanation:
Logic: Multiply first and third → gives middle

Check:
44 × 22 = 968 ✔
26 × 25 = 650 ✔

Apply to options:

A: 34 × 5 = 170 ≠ 173 ✘
B: 18 × 6 = 108 ✔
C: 15 × 23 = 345 ≠ 348 ✘
D: 23 × 9 = 207 ≠ 210 ✘

Final Answer:
(18, 108, 6)

Final Correct Option:
B

Q.74 **In this question, a group of numbers and symbols is coded using the letter codes given in the table below. After that, it is coded according to the given conditions. You have to select the correct combination of codes according to the conditions. If a condition is not followed, then the codes given in the table will be used for that number/symbol.**

Number/Symbol2@95$&3%#7 + 4 8 6

Code A F L J Z E K Q D P W B N M

Conditions:
i) If the first element is an odd number and the last element is an even number, then both the first and last elements will be encoded as '©'.
ii) If both the second and third elements are perfect squares, then the second element will be encoded with the code of the third element.
Code for: 7@%46?

A. P F Q B M

B. © Q B © F
C. © F Q B ©
D. © B Q F ©

Answer: C

Sol: **Given:**

Number/Symbol2@95$&3%#7 + 48 6

Code A F L J Z E K Q D P W B N M

Conditions:
i) If the first element is an odd number and the last element is an even number, then both the first and last elements will be encoded as '©'. →
Condition satisfied → First and last elements = ©
ii) If both the second and third elements are perfect squares, then the second element will be encoded with the code of the third element. →
Condition NOT satisfied
Code for: **7@%46**
Step-by-step:
First = 7 (odd), Last = 6 (even) => condition (i) satisfied → both become ©
Second = @, Third = % => not perfect squares → condition (ii) not applied
Remaining follow table: **@→F, %→Q, 4→B**
Final Code: © F Q B ©
Final Answer:
© F Q B ©
Final Correct Option:
(C)

Q.75 **Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group?**
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

A. QL – UJ
B. KP – ON
C. RD – VB
D. BM – FJ

Answer: D

Sol:

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

Logic: 1st letter + 4 and 2nd letter - 2 place.
Now, we check each options.
Option (a): QL – UJ
Q + 4 = U, L - 2 = J
Option (b): KP – ON
K + 4 = O, P - 2 = N
Option (c): RD – VB
R + 4 = V, D - 2 = B
Option (d): BM – FJ
B + 4 = F, M - 2 $\neq$ J
Thus, correct option is (d).

Q.76 **What will come in place of the question mark (?) in the following equation if '+' and '÷' are interchanged and '×' and '–' are interchanged?**
3 ÷ 9 × 17 + 1 – 2 = ?

A. 11
B. 10
C. –33
D. –22

Answer: D

Sol: **Given**: 3 ÷ 9 × 17 + 1 – 2 = ?

Given Sign + ×

Interchanged Sign ÷ -

Using **BODMAS** rule.

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

New equation: 3 + 9 - 17 ÷ 1 × 2 = ?

3 + 9 - 17 × 2 = ?

3 + 9 - 34 = ?

12 - 34 = ?

? = **- 22**

Thus, correct option is (d).

Q.77 **Which of the following pairs of signs, when their positions are interchanged, will correctly solve the given mathematical equation?**
12 + 16 – 22 ÷ 2 × 5 = 186

A. ÷ and ×
B. ÷ and +
C. + and ×
D. + and –

Answer: C

Sol: **1. Information Given:**
Expression: 12 + 16 – 22 ÷ 2 × 5
Required result: 186
2. Formula Used:
BODMAS Rule:
Brackets → Orders → Division → Multiplication → Addition → Subtraction

3. Explanation:
Check option C (interchange + and ×):
New expression:
12 × 16 – 22 ÷ 2 + 5

Now solve step by step:
= 12 × 16 – (22 ÷ 2) + 5
= 192 – 11 + 5
= 192 – 6
= 186 ✔
Hence, equation becomes correct.
Other options do not give 186.

Final Answer:
+ and ×

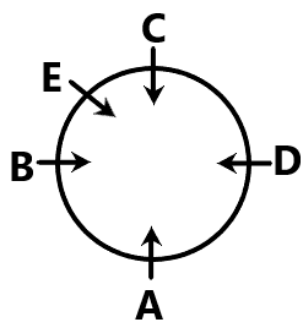
✔ **Final Correct Option:**
C

Q.78 **Five persons A, B, C, D and E are sitting around a circular table facing the centre. C is second to the right of A. B is second to the right of C. E is not an immediate neighbour of A. Who is sitting third to the right of B?**

A. A
B. C
C. D
D. E

Answer: B

Sol: **Given**:
Five persons A, B, C, D and E are sitting around a circular table facing the centre.
C is second to the right of A.
B is second to the right of C.
E is not an immediate neighbour of A.
From the given information seating arrangement will be.



C is sitting third to the right of B.
Thus, correct option is (b).

Q.79 A group of numbers and symbols can be coded according to the code given below and the conditions that follow. It is encrypted using . The correct combination of codes following the conditions is your answer. If If none follows, then select the direct code for the concerned number/symbol as given in the table. Use.

Numbers/Symbols 9 % 4 + 8 $ # 2 & 1 @ 5 7 3

Code QWD F VB J KOU T ZCS

Conditions
I. If the first element is an even number and the last element is an odd number, then the ratio of these two (first and last elements) is The codes should be interchanged.
II. If the first element is an odd number and the last element is a symbol, then combine the first and last elements with ©.
III. If both the first and third elements are symbols, then the third element is coded as the code for the first element.
What will be the code for the following group?
8 $ 2 + 7

A. VBKFC
B. ZBKFV
C. CBKFV
D. CBKFC

Answer: C

Sol: **Given:**

Numbers/Symbols 9 % 4 + 8 $ # 2 & 1 @ 5 7 3

Code QWD F VB J KOU T ZCS

8 $ 2 + 7
Conditions
I. If the first element is an even number and the last element is an odd number, then the ratio of these two (first and last elements) is The codes should be interchanged. → **interchange codes**
II. If the first element is an odd number and the last element is a symbol, then combine the first and last elements with ©. → **not applicable**
III. If both the first and third elements are symbols, then the third element is coded as the code for the first element. → **not applicable**
Let's check code:
8 (even), 7 (odd) → swap their codes (V & C)
So, 8→C and 7→V
Final coding: **8 $ 2 + 7**
8→C, $→B, 2→K, +→F, 7→V
→ **C B K F V**
Thus, the correct option is: (c)

Q.80 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

A. HZ - FD
B. TL - RP
C. LD - JH
D. XV - AY

Answer: D

Sol: **Information Given:**

Pairs:
A) HZ - FD
B) TL - RP
C) LD - JH
D) XV - AY

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

Logic:
Check shift pattern (first → second)

Explanation:
Logic: Same pattern = (−2, +4)

A: H − 2 = F ; Z + 4 = D
B: T − 2 = R ; L + 4 = P
C: L − 2 = J ; D + 4 = H
D: X + 3 = A ; V + 3 = Y ✗

Only D does not follow pattern

Final Answer:
XV - AY

Final Correct Option:
D

Q.81 A series is given with one term missing.
TO, ?, ZT, CX, FC, IL, LP, OX

A. WQ
B. ZQ
C. WR
D. UN

Answer: A

Sol: **Given**: TO, ?, ZT, CX, FC, IL, LP, OX

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

Logic: 1st letter + 3 and 2nd letter is increasing natural number from 2.
For, 1st letter
T + 3 = W, W + 3 = Z, Z + 3 = C, C + 3 = F, F + 3 = I, I + 3 = L, L + 3 = O
For, 2nd letter
O + 2 = Q, Q + 3 = T, T + 4 = X, X + 5 = C, C + 6 = I, I + 7 = P, P + 8 = X
So, the missing term is **WQ**.
Thus, correct option is (a).

Q.82 Select the pair which follows the same pattern as that followed by the two set of pairs given below. Both pairs follow the same pattern.
AEA−XBX
LPL−IMI

A. KNI−GKG
B. KNI−HLH
C. KOK−HLH
D. KOK−GLG

Answer: C

Sol: **Given**:
AEA−XBX
LPL−IMI

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

Logic: Letters are decreasing - 3 place.
For, AEA−XBX
A - 3 = X, E - 3 = B, A - 3 = X
For, LPL−IMI
L - 3 = I, P - 3 = M, L - 3 = I
Now, we check each options.
Option (a): KNI−GKG
K - 3 ≠ G, N - 3 = K, I - 3 ≠ G
Option (b): KNI−HLH
K - 3 = H, N - 3 ≠ L, I - 3 ≠ H
Option (c): KOK−HLH
K - 3 = H, O - 3 = L, K - 3 = H
Option (d): KOK−GLG
K - 3 ≠ G, O - 3 = L, K - 3 ≠ G
Thus, correct option is (c).

Q.83 If CLOCK is coded as 34235 and TIME as 8679, what will be the code for MOLEK?

A. 62495
B. 62945
C. 72495
D. 72945

Answer: C

Sol: **Given**: If CLOCK is coded as 34235 and TIME as 8679.
Logic: Direct coding is given.
For, CLOCK = 34235
C = 3, L = 4, O = 2, C = 3, K = 5
For, TIME = 8679
T = 8, I = 6, M = 7, E = 9
Similarly,
MOLEK = ?
M = 7, O = 2, L = 4, E = 9, K = 5
So, MOLEK is coded as **72495**.
Thus, correct option is (c).

Q.84 What should come in place of the question mark (?) in the given series?
0, ?, 12, 24, 40, 60

A. 10
B. 4
C. 8
D. 2

Answer: B

Sol: **1. Information Given:**
Series: 0, ?, 12, 24, 40, 60
2. **Formula Used**:
Increasing difference pattern

3. **Explanation**:
Step 1: Find differences

Let missing number = x

0 → x = (x − 0)
x → 12 = (12 − x)
12 → 24 = 12
24 → 40 = 16
40 → 60 = 20

Step 2: Identify pattern
Differences:
?, ?, 12, 16, 20

Pattern: increasing by +4
So differences should be:
4, 8, 12, 16, 20

Step 3: Find missing number
0 + 4 = 4
4 + 8 = 12 ✔
So, x = 4

. Final Answer:

4
✔ **Correct Option: B**

Q.85 **A series is given with one term missing.**
RU, TW, XZ, ?, DE, FG, JJ, LL

A. BB
B. CY
C. ZC
D. ZB

Answer: D

Sol: **Given**: RU, TW, XZ, ?, DE, FG, JJ, LL

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

Logic: 1st letter + 2 and + 4 place alternately and 2nd letter + 2 and + 3 place alternately.
For, 1st letter
R + 2 = T, T + 4 = X, X + 2 = Z, Z + 4 = D, D + 2 = F, F + 4 = J, J + 2 = L
For, 2nd letter
U + 2 = W, W + 3 = Z, Z + 2 = B, B + 3 = E, E + 2 = G, G + 3 = J, J + 2 = L
So, the missing term is **ZB**.
Thus, correct option is (d).

Q.86 **What should come in place of the question mark (?) in the given series?**
7, 14, 28, 56, 112, ?

A. 192
B. 216
C. 232
D. 224

Answer: D

Sol: **Information Given:**
Series: 7, 14, 28, 56, 112, ?

Logic:
Pattern: Multiply by 2 each step

Explanation:
Logic: Each term = previous × 2

Step-by-step:
7×2=14
14×2=28
28×2=56
56×2=112
112×2=224

Final Answer:
224

Final Correct Option:
D

Q.87 **Select the option that represents the correct order of the given words as they would appear in an English dictionary.**
Builder
Building
Built
Bulk

A. 1,2,3,4
B. 1,3,2,4
C. 3,1,2,4
D. 1,2,4,3

Answer: A

Sol: **Given**: Builder, Building, Built, Bulk
Arrange the words in alphabetical (dictionary) order:
Builder comes before Building (build er < build ing)
Building comes before Built (build... < built)
Built comes before Bulk (bui... < bul...)
So, the correct order is: Builder → Building → Built → Bulk → **1, 2, 3, 4**
Thus, correct option is (a).

Q.88 **Ram and Mohan are brothers. Shweta and Anu are sisters. Dinesh is husband of Manju, who is daughter of Manoj. Ram is son Manoj and Anu is daughter of Dinesh. How Ram is related to Anu?**

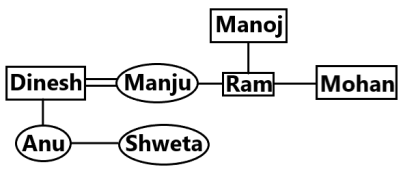
A. Uncle
B. Brother
C. Father
D. Brother in law

Answer: A

Sol: **Given**:
Ram and Mohan are brothers.
Shweta and Anu are sisters.
Dinesh is husband of Manju, who is daughter of Manoj.
Ram is son Manoj and Anu is daughter of Dinesh.

Symbol in Diagram	Meaning
- / O	Female
+/ □	Male
=	Married Couple
—	Siblings
|	Difference Of Generation

From the given information blood relation diagram will be.



So, Ram is the **Uncle** of Anu.
Thus, correct option is (a).

Q.89 If M + N means that M is the father of N
M − N means that M is the mother of N
M × N means that M is the brother of N
M ÷ N means that M is the sister of N

Then, which of the following means that P is the grandfather of R?

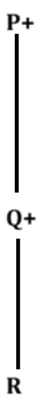
A. P – Q + R
B. P + Q × R
C. P + Q + R
D. R × S + P

Answer: C

Sol: **Given** - If M + N means that M is the father of N
M − N means that M is the mother of N
M × N means that M is the brother of N
M ÷ N means that M is the sister of N
Then, which of the following means that P is the grandfather of R?

Symbol in Diagram	Meaning
- / O	Female
+/ □	Male
═	Married Couple
—	Siblings
|	Difference Of Generation

Checking option c - P + Q + R



P is the grandfather of R.

Q.90 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
1. Some shirts are ties.
2. No pant is a coat.
3. All ties are pants.
Conclusions:

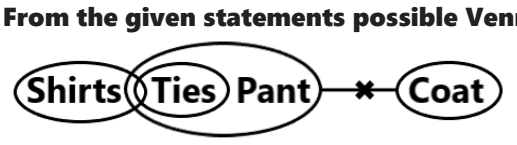
I. Some coats may be shirts.
II. All shirts are pants.

A. Only conclusion (I) follows
B. Neither conclusion (I) nor conclusion (II) follows
C. Both conclusions (I) and (II) follow
D. Only conclusion (II) follows

Answer: A

Sol: **Statements**:
1. Some shirts are ties.
2. No pant is a coat.
3. All ties are pants.

From the given statements possible Venn diagram will be.



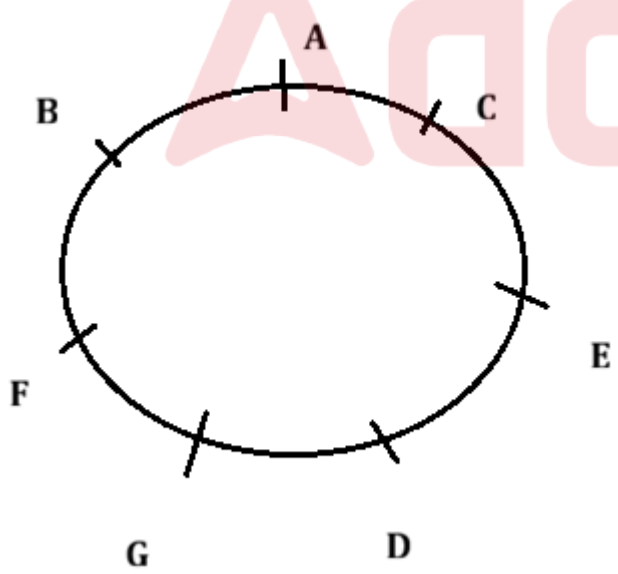
Conclusions:
I. Some coats may be shirts. (**True**, there is be possibility between some coats may be shirts).
II. All shirts are pants. (**False**, some shirts are ties and all ties are pants, so that means all shirts are not pants).
So, **Only conclusion (I) follows.**
Thus, correct option is (a).

Q.91 **A, B, C, D, E, F and G are sitting around a circular table facing the centre. C sits second to the right of D. Only one person sits between B and C. F is the immediate neighbour of G and B. A sits third to the left of G. How many people sit between E and B when counted from the left of B?**

A. Four
B. Two
C. Three
D. One

Answer: B

Sol: **Given** - A, B, C, D, E, F and G are sitting around a circular table facing the centre.
C sits second to the right of D.
Only one person sits between B and C.
F is the immediate neighbour of G and B.
A sits third to the left of G.



Two (A, C) people sit between E and B when counted from the left of B.

Q.92 **Each of the digits in the number 7123458 is arranged in ascending order from left to right. What will be the sum of the digits which are second from the left and second from the right in the new number thus formed?**

A. 6
B. 11
C. 9
D. 8

Answer: C

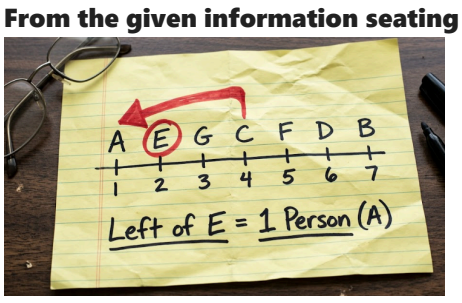
Sol: **Given**: 7123458
Arrange digits in ascending order:
Digits → 7, 1, 2, 3, 4, 5, 8
Ascending order: 1 2 3 4 5 7 8
Second from left = 2
Second from right = 7
Sum: 2 + 7 = 9
So, **9** will be the sum of the digits which are second from the left and second from the right in the new number thus formed.
Thus, correct option is (c).

Q.93 **A,B,C,D,E,F and G are sitting in a straight line facing North. No one sits to the right of B. Only three people sit between B and G. Only two people sit between G and D. A sits third to the left of C. F sits to the immediate right of C. How many people sit to the left of E?**

A. 1
B. 3
C. 2
D. 4

Answer: A

Sol: **Given:**
A,B,C,D,E,F and G are sitting in a straight line facing North.
No one sits to the right of B.
Only three people sit between B and G.
Only two people sit between G and D.
A sits third to the left of C.
F sits to the immediate right of C.
From the given information seating arrangement will be:



So, **One** person sits to the left of E.
Final Correct Option:
(a) 1

Q.94 **In the question a statement is given, followed by three conclusions I, II and III. You have to consider the statement to be true even if it seems to be at variance with commonly known facts and decide which of the given conclusions, if any, follow from the statement.**
Statement: Ministers arrive at the public function in their cars.
Conclusions:
I. All ministers are rich.
II. Ministers have cars.
III. Ministers attend public functions.

A. Only conclusion I follows
B. Only conclusion II follows
C. Only conclusions II and III follow
D. Only conclusions I and II follow

Answer: C

Sol: **Given:**

Statement: Ministers arrive at the public function in their cars.

Explanation:

I. All ministers are rich.

Conclusion I **does not** follow because arriving in cars does not prove that all ministers are rich.

II. Ministers have cars.

Conclusion II **follows** because the statement clearly mentions that ministers arrive in their cars.

III. Ministers attend public functions.

Conclusion III **follows** because arriving at a public function means that ministers attend public functions.

Thus, correct option is (C).

Q.95 **What will come in place of the question mark (?) in the following equation if '+' and '−' are interchanged and '×' and '÷' are interchanged?**
44 × 11 − 15 ÷ 17 + 16 = ?

A. 253
B. 243
C. 223
D. 233

Answer: B

Sol: **Given**: 44 × 11 − 15 ÷ 17 + 16 = ?

Given Sign +×

Interchanged Sign - ÷

Using **BODMAS** rule.

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

New equation: 44 ÷ 11 + 15 × 17 - 16 = ?

4 + 15 × 17 - 16 = ?

4 + 255 - 16 = ?

259 - 16 = ?

? = **243**

Thus, correct option is (b).

Q.96 **Each of G, H, I, J, L, M and N has a holiday on a different day of a week, starting from Monday and ending on Sunday of the same week. M has a holiday on Thursday. H has a holiday immediately before J. N has a holiday on one of the days after I. L has a holiday immediately after J. Only one person has a holiday after G. How many people have a holiday between N and L?**

A. One
B. Four
C. Three
D. Two

Answer: C

Sol: **Given**:

Each of G, H, I, J, L, M and N has a holiday on a different day of a week, starting from Monday and ending on Sunday of the same week.

M has a holiday on Thursday.

H has a holiday immediately before J.

N has a holiday on one of the days after I.

L has a holiday immediately after J.

Only one person has a holiday after G.

From the given information arrangement will be.

Days	Persons
Monday	H

Tuesday	J
Wednesday	L
Thursday	M
Friday	I
Saturday	G
Sunday	N

So, **three** people have a holiday between N and L.
Thus, correct option is (c).

Q.97 **Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.**
Statements:
1. Some dices are cubes.
2. All dices are rectangles.
3. No rectangle is a hexagon
Conclusions:
I. No dice is a hexagon.
II. At least some cubes are rectangles.

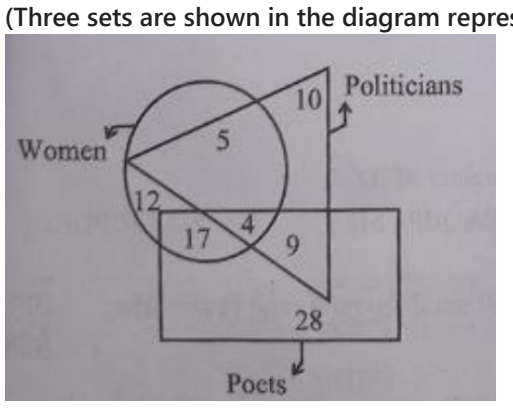
A. Neither conclusion (I) nor (II) follows
B. Only conclusion (I) follows
C. Both conclusions (I) and (II) follow
D. Only conclusion (II) follows

Answer: C

Sol: **Statements**:
1. Some dices are cubes.
2. All dices are rectangles.
3. No rectangle is a hexagon
From the given statements possible Venn diagram will be.

Conclusions:
I. No dice is a hexagon. (**True**, there is no relation between dice and hexagon).
II. At least some cubes are rectangles. (**True**, some dices are cubes and all dices are rectangles, so that means some cubes are rectangles).
So, **Both conclusions (I) and (II) follow.**
Thus, correct option is (c).

Q.98 **Study the given diagram carefully and answer the question. The numbers in different sections indicate the number of persons.**
(Three sets are shown in the diagram representing Women, Politicians, and Poets.)



How many women poets are politicians?

A. 5

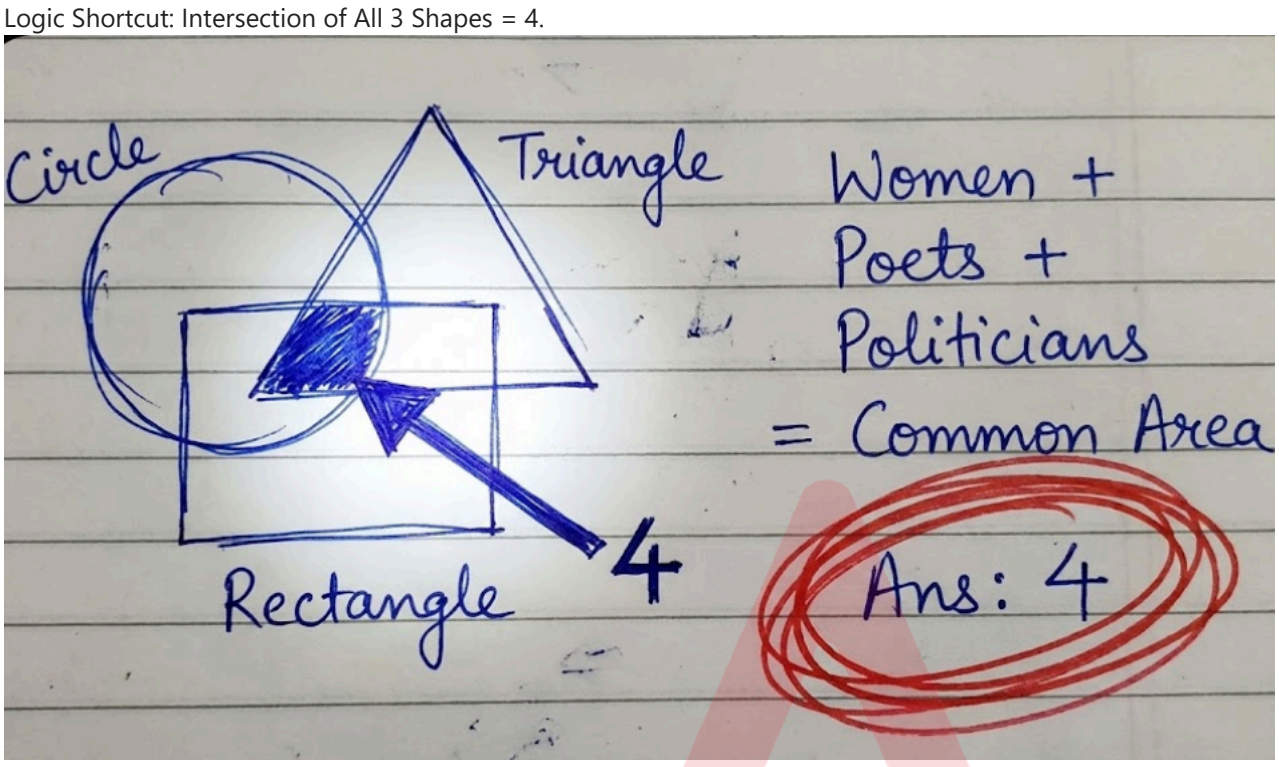
B. 4
C. 9
D. 17

Answer: B

Sol: The Map:
Circle = Women
Rectangle = Poets
Triangle = Politicians

The Logic: You need to find the single number that is trapped inside the Circle, the Rectangle, AND the Triangle all at the same time.

Visual Check: Look at the diagram.
The number 5 is only in the Circle and Triangle (Women + Politicians).
The number 9 is only in the Triangle and Rectangle (Politicians + Poets).
The number 4 is the only one sitting in the exact center where all three shapes overlap.
Logic Shortcut: Intersection of All 3 Shapes = 4.



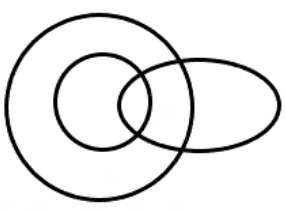
Q.99 More heavy the Balls more costlier they are. Rahul's Ball is heavier than Virat's and costlier than Rohit's. Dhoni's ball is costlier than Rahul's but lighter than Kedhar's. Rohit's ball is costlier than Virat's. So who is the owner of the costliest ball?

A. Virat
B. Rahul
C. Kedhar
D. Rohit

Answer: C

Sol: **Given**:
More heavy the Balls more costlier they are.
Rahul's Ball is heavier than Virat's and costlier than Rohit's.
Dhoni's ball is costlier than Rahul's but lighter than Kedhar's.
Rohit's ball is costlier than Virat's.
From the given information arrangement will be.
Kedhar > Dhoni > Rahul > Rohit > Virat
So, **Kedar** is the owner of the costliest ball.
Thus, correct option is (c).

Q.100 The Venn diagram given below best represents the relationship among which of the classes given in the options?



A. Nucleus, Protons, Neutrons
B. Circles, Squares, Triangles

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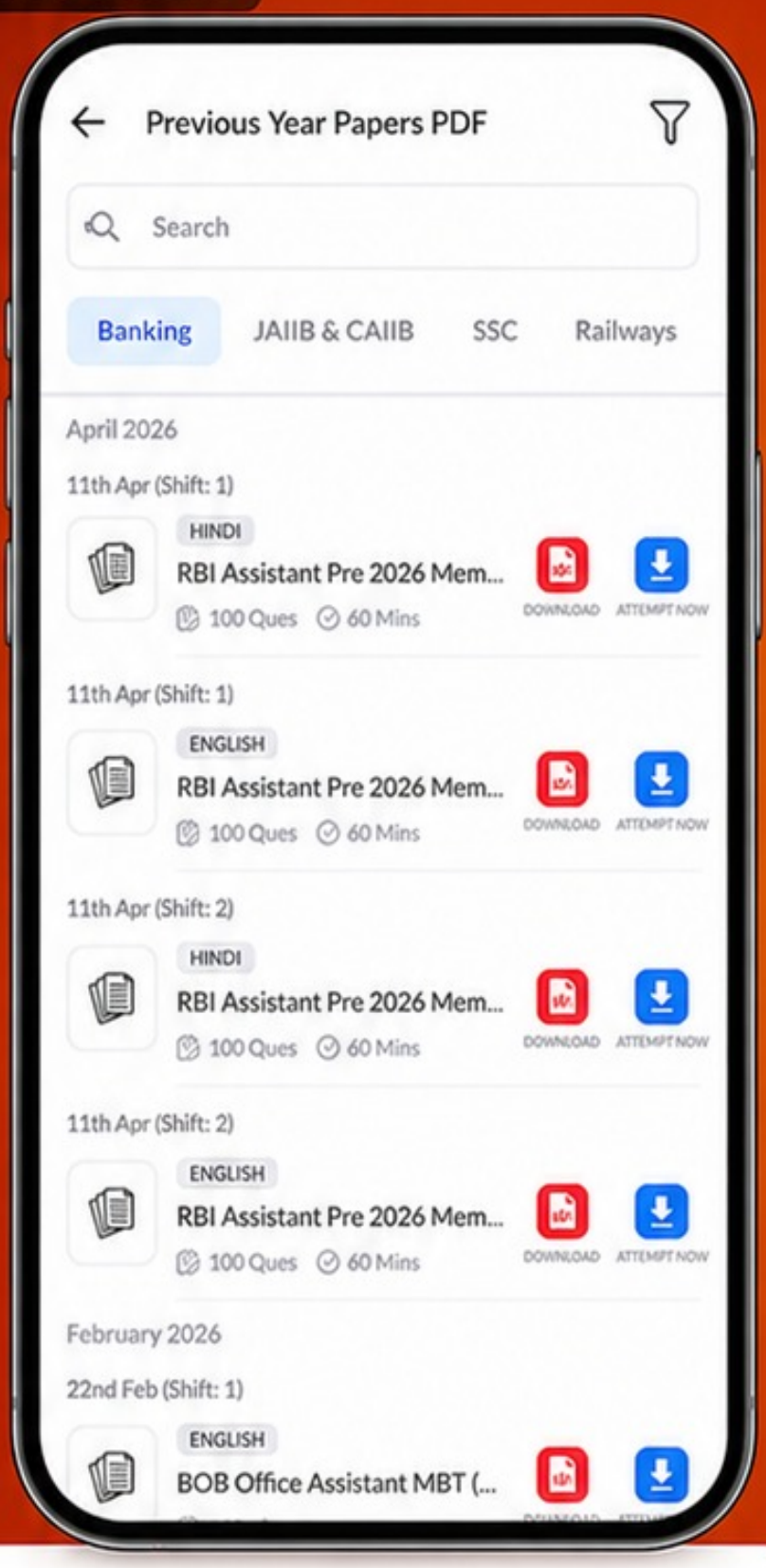

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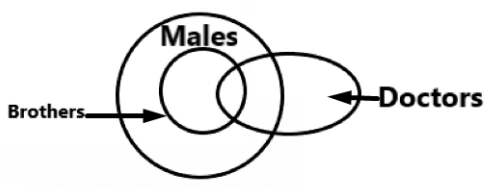
C. Mammals, Reptiles, Lizards
D. Brothers, Doctors, Males

Answer: D

Sol: All brothers are males, because a brother is by definition a male sibling.
Doctors can be male or female, so only some doctors are males.



Thus, correct option is (d).