

Answers

1. Answer: c

Explanation:

C295 Airbus Company Country Association

This question asks to identify the country associated with the C295 Airbus Company. The C295 is a specific aircraft model produced under the Airbus umbrella.

Airbus Corporate Structure and Nationality

Airbus SE is a prominent European multinational aerospace corporation. It's important to understand that Airbus is not a company belonging to a single country but rather a consortium formed from the aerospace industries of several European nations.

Key points regarding Airbus's origin and structure:

- Airbus was founded through a merger of French, German, Spanish, and British aerospace manufacturers.
- The company's headquarters are officially in Leiden, Netherlands, with its main operational headquarters and registered office in Toulouse, France.
- Given its multinational foundation, Airbus has significant industrial facilities and operations spread across Europe.

The C295 Aircraft Program's Links

Focusing specifically on the C295 aircraft, its history and development are closely tied to one of the founding members of the Airbus consortium.

The C295 aircraft was developed by CASA (Construcciones Aeronáuticas S. A.), a Spanish aerospace company. CASA became part of EADS (European Aeronautic Defence and Space Company), which subsequently rebranded as Airbus Group.

The primary design, development, and much of the manufacturing for the C295 and its variants have historically been based in Spain. This makes **Spain** the country most strongly associated with the C295 Airbus Company product line.

2. Answer: a

Explanation:

The Chandrayaan mission marked a historic achievement for India's space program, successfully landing its Vikram lander on the Moon's surface. The specific location where the Chandrayaan-3 lander made its historic touchdown has been officially named.

Chandrayaan Lander's Lunar Landing Site Name

The point on the Moon where India's Chandrayaan-3 lander successfully touched down has been given a significant name. This memorable location is now officially known as **Shiv Shakti Point**.

Details of the Landing Site

- The successful landing occurred on August 23, 2023.
- The location is near the Moon's south pole, a region of great scientific interest.
- The name **Shiv Shakti Point** was announced by the Indian Prime Minister, Shri Narendra Modi, following the mission's success.
- The term 'Shiv' represents the destructive and regenerative aspect of the cosmic functions according to Hindu traditions, while 'Shakti' symbolizes the power and strength of the divine feminine.

Identifying the Correct Option

Based on the official announcement and the mission's achievements, the correct name for the Chandrayaan lander's landing spot is **Shiv Shakti Point**. This corresponds to the first option provided.

Therefore, the name of the point where the Chandrayaan lander landed on the Moon is Shiv Shakti Point.

3. Answer: d

Explanation:

Measuring Celestial Distances: Choosing the Right Unit

When we talk about the vastness of space, we often need specific units to measure the immense **distance between celestial bodies**. Celestial bodies include stars, planets, galaxies, and other objects in space. The distances involved are so large that using everyday units like metres, miles, or kilometres quickly becomes impractical because the numbers become incredibly large and difficult to manage.

Why Standard Units Fall Short

- **Metres (m)**: While the base unit of length in the International System of Units (SI), the metre is far too small for interstellar distances. For example, the distance to the nearest star system, Alpha Centauri, is about 4.1×10^{16} metres.
- **Miles (mi)**: Although larger than a metre, a mile is also insufficient for astronomical scales. It's roughly equal to 1,609 metres. The distance to Alpha Centauri would be approximately 2.5×10^{13} miles, still a very large number.
- **Kilometres (km)**: Similar to miles, kilometres (equal to 1,000 metres) are commonly used for distances on Earth but are not practical for the vast **distance between celestial bodies**. The distance to Alpha Centauri is about 4.1×10^{13} kilometres.

The Astronomical Unit: Light Year

To accurately and conveniently measure the **distance between celestial bodies**, astronomers use a specialized unit called the **light-year**.

- **Definition:** A light-year is defined as the total distance that light travels in vacuum during the course of one Julian year (which is exactly 365.25 days).
- **Calculation:** Light travels at a constant speed of approximately 299,792,458 metres per second (often approximated as 3×10^8 m/s). Using this speed, we can calculate the distance covered in one year.
 - Speed of light (c): $\approx 3 \times 10^8$ m/s
 - Seconds in a Julian year: $365.25 \text{ days} \times 24 \text{ hours/day} \times 60 \text{ minutes/hour} \times 60 \text{ seconds/minute} = 31,557,600 \text{ seconds}$
 - Distance (1 light-year): $c \times (\text{seconds in a year})$
 - 1 light-year $\approx (3 \times 10^8 \text{ m/s}) \times (3.15576 \times 10^7 \text{ s}) \approx 9.461 \times 10^{15} \text{ metres}$
- **Significance:** Using light-years, the distance to Alpha Centauri is about 4.37 light-years. This is a much more manageable number compared to trillions of kilometres or miles. It effectively simplifies the scale when discussing the **distance between celestial bodies**, especially stars and galaxies.

Comparing Distance Units

To illustrate the scale, here's a comparison:

Unit	Approximate Value in Metres
Metre (m)	1 m
Kilometre (km)	10^3 m
Mile (mi)	$\approx 1.609 \times 10^3$ m
Light Year (ly)	$\approx 9.461 \times 10^{15}$ m

Conclusion

Given the vast nature of the universe, the most appropriate and commonly used unit for measuring the **distance between celestial bodies**, particularly stars and galaxies, is the **light-year**. It provides a convenient scale for astronomical measurements, making vast distances easier to comprehend and work with.

4. Answer: c

Explanation:

Understanding Iseismic Lines on Earthquake Maps

When studying earthquakes, understanding how the shaking affects different areas is crucial. Scientists use maps to show this information. The question asks for the specific name given to lines drawn on a map that connect locations where the earthquake shaking intensity was the same.

Defining Iseismic Lines

- The correct term for these lines is **Iseismic Lines**.
- The prefix 'iso-' originates from Greek and signifies 'equal'.
- The word 'seismic' pertains to earthquakes and the resulting ground shaking.
- Thus, **iseismic lines** are geographical lines that link places reporting the same level of earthquake intensity. These lines are valuable tools for visualizing how the effects of shaking are distributed across different regions.

Analysis of Incorrect Options

- **Seismic Markings:** While the term 'seismic' is related to earthquakes, 'markings' is a very broad description. It does not specifically denote lines connecting areas of equal intensity.
- **Richter Lines:** This option is incorrect because the Richter scale is designed to measure the *magnitude* of an earthquake – essentially, the energy released from the earthquake's source. It does not measure the *intensity* of shaking felt at various locations on the Earth's surface. Consequently, 'Richter Lines' is not the standard terminology for mapping earthquake intensity.
- **Tremor Connections:** 'Tremor' is a synonym for shaking, but the phrase 'tremor connections' is not a recognized scientific term within the field of seismology. It inaccurately describes the specific concept of lines drawn to connect areas of equal shaking intensity.

In conclusion, the lines drawn on a map to connect points that experienced the same level of shaking intensity due to an earthquake are correctly identified as **Isoseismic Lines**.

5. Answer: d

Explanation:

Understanding the Anti-defection Law in the Indian Constitution

The Anti-defection law is a crucial piece of legislation in the **Indian Constitution** aimed at preventing political defections by Members of Parliament (MPs) and Members of State Legislatures. Defection refers to shifting allegiance from the party under whose ticket a person was elected to a different party. This law was introduced to bring stability to governments by discouraging legislators from changing parties for personal or political gains.

The Tenth Schedule and the Anti-defection Law

The provisions regarding the Anti-defection law are laid down in the **Tenth Schedule** of the Indian Constitution. This schedule was added to the Constitution by the 52nd Amendment Act of 1985. The Tenth Schedule specifies the circumstances under which a Member of Parliament or a Member of a State Legislature can be disqualified on the grounds of defection.

The primary objective of incorporating the Anti-defection law into the Tenth Schedule was to curb the practice of 'Aaya Ram Gaya Ram' politics, where legislators frequently switched parties, leading to political instability and undermining the democratic process.

Other Schedules of the Indian Constitution

While the Tenth Schedule deals with the Anti-defection law, the other schedules mentioned in the options cover different aspects of the **Indian Constitution**:

- **Seventh Schedule:** Deals with the distribution of powers between the Union and State Governments, listing the Union List, State List, and Concurrent List.
- **Eighth Schedule:** Lists the official languages of India.
- **Ninth Schedule:** Contains acts and regulations that are immune to judicial review (though this has been subject to court scrutiny).

Therefore, among the given options, only the Tenth Schedule contains the Anti-defection law provisions. Understanding the specific contents of each **schedule** helps clarify why the Anti-defection law is found in the Tenth Schedule and not others.

6. Answer: c

Explanation:

Operation Zindagi: Correctness of Statements

This explanation focuses on verifying the details provided about Operation Zindagi and the **Silkyara tunnel**. We will analyze each statement to determine their accuracy.

Analyzing Statement 1: Purpose of Operation Zindagi

The first statement concerns the objective of **Operation Zindagi**. It states that the operation was a **rescue operation** launched to save **workers trapped** in an under-construction tunnel at **Silkyara**.

- **Verification:** Operation Zindagi refers to the real-life rescue mission conducted in November 2023.
- The mission's goal was to safely evacuate 41 construction workers who were trapped inside the Silkyara-Barkot tunnel following a landslide and subsequent

collapse.

- The operation involved complex engineering and rescue efforts over several days.
- **Conclusion:** Statement 1 is accurate as it correctly describes the nature and purpose of Operation Zindagi.

Analyzing Statement 2: Location of Silkyara Tunnel

The second statement specifies the geographical location of the **Silkyara tunnel**, stating it is in **Uttarakhand**.

- **Verification:** The Silkyara-Barkot tunnel is a significant infrastructure project in the hilly terrain of India.
- This tunnel is situated in the Uttarkashi district, which is part of the state of Uttarakhand.
- The tunnel is part of the connectivity project aimed at improving access to pilgrimage sites.
- **Conclusion:** Statement 2 is factually correct regarding the location of the Silkyara tunnel.

Overall Assessment of Statements

After evaluating both statements:

- Statement 1 correctly identifies Operation Zindagi as a rescue mission for trapped workers at the Silkyara tunnel.
- Statement 2 correctly places the Silkyara tunnel within the state of Uttarakhand.

Since both individual statements are factually correct, the option that includes both statements is the correct one.

Determining the Correct Option

Based on the analysis, both Statement 1 and Statement 2 are correct. Therefore, the option stating 'Both 1 and 2' accurately reflects the verified information.

7. Answer: a

Explanation:

Discovery of India: Nehru's Jailhouse Masterpiece

Pandit Jawaharlal Nehru, a central leader of the Indian National Congress and the first Prime Minister of India, penned the famous book **Discovery of India** during his time imprisoned by the British. This influential book delves into India's extensive history, its diverse culture, philosophical traditions, and the political currents shaping the nation.

Context of Nehru's Imprisonment

The question asks for the specific jail location where Pandit Nehru wrote **Discovery of India**. Nehru was incarcerated multiple times due to his active participation in the Indian freedom struggle. The period of writing this book corresponds to a specific phase of his imprisonment following the launch of the Quit India Movement.

Ahmednagar: The Correct Jail Location

Pandit Nehru wrote the book **Discovery of India** while imprisoned in the jail located at **Ahmednagar**. He was arrested in August 1942 as part of the Quit India Movement and subsequently held at the Ahmednagar Fort. He remained detained there until his release in March 1945. It was during this confinement, specifically between August 1942 and September 1944, that Nehru conceptualized and wrote *Discovery of India*. The book reflects his deep reflections on India's heritage and his hopes for its future, developed during this period of isolation.

Examining Other Jail Locations

To understand why Ahmednagar is the correct answer, let's briefly look at the other options:

- **Ahmedabad:** This city was a significant hub for nationalist activities, but Nehru did not write *Discovery of India* while jailed here.
- **Allahabad:** Known as the ancestral home of the Nehru family (now Prayagraj), it was not the location of his writing of this particular book during imprisonment.
- **Yerwada:** Yerwada Jail, located in Pune, Maharashtra, was a place of significant historical importance during the freedom struggle and housed many prominent leaders, including Nehru and Gandhi at various times. However, the specific writing of *Discovery of India* did not occur here.

8. Answer: a

Explanation:

Alaknanda and Bhagirathi River Confluence

The question asks for the location in India where the Alaknanda River and the Bhagirathi River meet. These two rivers are significant tributaries in the upper reaches of the Ganges river system.

Understanding the Rivers and Their Confluence

The **Alaknanda River** originates from the Satopanth Glacier in Uttarakhand.

The **Bhagirathi River**, considered the other main source stream of the Ganges, originates from the Gangotri Glacier, near Gaumukh.

The meeting point of these two rivers is a significant event in the geography of Uttarakhand and the formation of the River Ganges.

Identifying the Confluence Point: Devprayag

The confluence of the Alaknanda and Bhagirathi rivers occurs at a town named Devprayag.

- Devprayag is a town and a Nagar Panchayat in the Tehri Garhwal district of the state of Uttarakhand, India.
- It is one of the five sacred river confluences (Panch Prayag) in the Garhwal region.
- After the confluence at Devprayag, the combined river is known as the Ganges (Ganga).
- The Bhagirathi is generally considered the stream that, after the confluence, gives rise to the main Ganges river.

Analysis of Options

Let's examine the provided options:

- **Devprayag:** This is the correct location where the Alaknanda and Bhagirathi rivers meet to form the Ganges.
- **Dehradun:** Dehradun is the capital city of Uttarakhand, located in the Doon Valley, west of the main confluence point. It is not where the Alaknanda and Bhagirathi join.
- **Prayagraj:** Also known as Allahabad, Prayagraj is a major city in Uttar Pradesh where the Ganges meets the Yamuna River and the mythical Saraswati River. This is much further downstream from the Alaknanda-Bhagirathi confluence.
- **Champawat:** Champawat is a district and town in Uttarakhand, located in the eastern part of the Kumaon division, far from the confluence of the Alaknanda and Bhagirathi.

Conclusion on River Meeting

Therefore, the specific location where the Alaknanda river joins the Bhagirathi river in India is **Devprayag**. This is a vital point in understanding the Ganges river's origin.

9. Answer: c

Explanation:

Vajra Prahar Joint Military Exercise Overview

This question requires identifying the country that participates in the joint military exercise named "Vajra Prahar" with India.

Understanding Vajra Prahar

Vajra Prahar is a prominent and specialized bilateral defense cooperation exercise. It specifically focuses on enhancing the capabilities of the special forces from both participating nations.

- The exercise name, "Vajra Prahar," means "Thunderbolt Strike" in English.
- It serves as a platform for joint training in counter-terrorism operations, counter-insurgency tactics, and other special warfare drills.
- The primary goal is to improve synergy, interoperability, and mutual understanding between the elite special forces units.

Identifying the Partner Nation

The "Vajra Prahar" exercise is a collaborative effort between India and the **United States (USA)**.

- This joint military exercise has been conducted regularly between the Indian Army's special forces and the U.S. Army's special forces.

Evaluating the Options

Let's examine the provided options in relation to the Vajra Prahar exercise:

- **Australia:** India engages in military exercises like 'AUSINDEX' with Australia, but "Vajra Prahar" is not among them.
- **Saudi Arabia:** While India maintains defense ties with Saudi Arabia, "Vajra Prahar" is not a joint exercise conducted with them.
- **USA:** This is the correct partner country for the "Vajra Prahar" military exercise.
- **France:** India conducts exercises such as 'VARUNA', 'GARUDA', and 'SHAKTI' with France, but "Vajra Prahar" is exclusively held with the USA.

Significance for India-USA Defense Relations

The **Vajra Prahar** exercise is vital for strengthening the defense partnership between India and the USA.

- It facilitates the exchange of best practices and experiences in tackling complex security challenges.
- The training enhances the combined operational effectiveness and preparedness of both nations' special forces.
- It fosters deeper trust and coordination, crucial for achieving shared security objectives in the Indo-Pacific region and beyond.

10. Answer: b

Explanation:

August 2023 Railway Board Chairman and CEO Appointment

In August 2023, a significant appointment was made within the Indian bureaucratic structure concerning the nation's railway system. **Jaya Varma Sinha** took charge as the Chairman and Chief Executive Officer (CEO) of the Railway Board.

Understanding the Role of Chairman and CEO, Railway Board

The Chairman and CEO of the Railway Board is the apex position in the management of Indian Railways. This role involves overseeing the entire network, policy formulation, strategic planning, and ensuring the smooth operation of one of the world's largest railway systems. The appointment signifies a key leadership position responsible for driving the future direction of the railways.

Key Appointment Details

- **Appointee:** Jaya Varma Sinha

- **Position:** Chairman and Chief Executive Officer (CEO), Railway Board
- **Month of Appointment:** August 2023

Reviewing the Options

The question asks to identify the individual appointed as Chairman and CEO of the Railway Board in August 2023. Let's examine the provided options:

- Anil Kumar Lahoti
- Jaya Varma Sinha
- Vinod Kumar Yadav
- VK Tripathi

Based on the information, Jaya Varma Sinha is the correct individual who assumed this prestigious position in August 2023.

11. Answer: c

Explanation:

Determining Non-SAARC Member: Indonesia

This question requires identifying the country that is not a member of the South Asian Association for Regional Cooperation (SAARC) from the given options. To find the correct answer, we need to review the membership status of Bhutan, Maldives, Indonesia, and Afghanistan concerning SAARC.

Understanding SAARC Membership Criteria

SAARC is a regional intergovernmental organization comprising South Asian states. Its primary objective is to foster economic growth, social progress, and cultural development within the South Asian region. Membership is generally limited to countries geographically located in South Asia or having strong regional ties.

Analysis of SAARC Member Options:

- **Bhutan:** Bhutan is one of the founding members of SAARC, having joined the organization in 1985. It actively participates in SAARC activities.
- **Maldives:** The Maldives became a member of SAARC on November 12, 2010, during the 16th SAARC Summit.
- **Afghanistan:** Afghanistan joined SAARC as its eighth member state on April 3, 2007.
- **Indonesia:** Indonesia is a country located in Southeast Asia. It is not geographically part of South Asia and therefore is not a member of SAARC.

List of Current SAARC Member States

The eight member states of SAARC are:

Member State
Afghanistan
Bangladesh
Bhutan
India
Maldives
Nepal
Pakistan
Sri Lanka

Identifying the Non-Member

By comparing the given options with the official list of SAARC member states, it is clear that while Bhutan, Maldives, and Afghanistan are members, Indonesia is not. Indonesia's geographical location in Southeast Asia excludes it from SAARC membership.

12. Answer: b

Explanation:

Japan Challenge Tour Association with Sports

The question asks us to identify the specific sport that the **Japan Challenge Tour** is associated with. This involves understanding the nature of this tour within the competitive sports landscape.

Understanding the Japan Challenge Tour

The **Japan Challenge Tour** is a professional developmental circuit primarily focused on **Golf**. It functions as a significant pathway for upcoming golfers in Japan, offering them opportunities to compete, gain experience, and improve their rankings. Success on the Challenge Tour often provides a route to the main professional golf tours in Japan, such as the Japan Golf Tour Organization (JGTO).

Connecting the Tour to Golf

- The primary objective of the **Japan Challenge Tour** is to foster talent in professional **Golf**.
- Events are held at various golf courses, following the standard rules and formats of competitive **Golf**.
- Players compete against each other over several rounds, aiming to achieve the lowest score, which is the core objective in **Golf**.

Analysis of Other Sport Options

Let's look at why the other sports mentioned are not related to the **Japan Challenge Tour**:

- **Tennis**: This is a racquet sport played on a court. Professional tennis tours (like the ATP and WTA) are separate circuits with different event structures and venues.

- **Soccer:** This team sport involves a ball and two goals. Professional soccer in Japan is organized under leagues like the J.League, which is distinct from the **Japan Challenge Tour**.
- **Swimming:** This is an aquatic sport performed in pools or open water. Major swimming events are typically part of international federations like World Aquatics (formerly FINA) and national championships, not developmental tours like the one mentioned.

Final Determination

Considering the structure, purpose, and common knowledge about sports tours, the **Japan Challenge Tour** is unequivocally linked to the sport of **Golf**. It plays a vital role in the development ecosystem of professional **Golf** in Japan.

13. Answer: b

Explanation:

Ropar: Harappan Site Location on the Sutlej River

The Harappan civilization, also widely known as the Indus Valley Civilization, represents one of the world's earliest urban cultures. This ancient civilization thrived in the northwestern part of the Indian subcontinent. Numerous archaeological sites have been unearthed, providing invaluable information about its people, cities, and way of life. Among these significant sites is **Ropar**.

Details About the Harappan Site Ropar

Ropar, whose archaeological site is also known as Rupnagar, is a key settlement belonging to the Harappan period. Its discovery after India's partition was particularly important, marking a significant Harappan presence in modern-day India. The site offers evidence of the Harappan culture's eastward expansion.

Identifying the River Banks of Ropar

A crucial aspect of understanding archaeological sites is their geographical context, especially the river systems they were associated with. The question specifically asks which river flowed near the Harappan settlement of **Ropar**.

- Archaeological findings and historical records confirm that the Harappan site of **Ropar** was situated on the banks of the river **Sutlej**.
- The Sutlej is a major river that forms part of the larger Indus river system and has historically been vital to the regions where the Harappan civilization flourished.

Evaluating the River Options for Ropar

To accurately answer the question, we can consider the geographical locations of the given rivers in relation to Ropar:

- **Chenab**: This river is significant in the Punjab region but is not the primary river associated with Ropar.
- **Sutlej**: This is the correct river. Ropar's location is well-documented as being on the banks of the Sutlej River.
- **Indus**: The Indus River is central to the civilization's core but Ropar is located geographically east of the main Indus valley, on the Sutlej.
- **Ravi**: While the Ravi River is important and associated with major Harappan sites like Harappa itself, it is not the river adjacent to Ropar.

In conclusion, the historical and geographical evidence strongly supports that the Harappan site of **Ropar** was located on the banks of the **Sutlej** river.

14. Answer: c

Explanation:

Understanding the Ball Bounce Phenomenon

The question asks us to identify the physical principle behind a common event: a ball bouncing when it hits the floor. This involves understanding the forces acting

during the impact.

Explaining the Ball Bounce using Newton's Third Law

The phenomenon of a **ball bouncing** off the floor is best explained by **Newton's third law of motion**. This law is often stated as: "For every action, there is an equal and opposite reaction."

- **Action:** When the ball collides with the floor, the ball exerts a force downwards onto the floor.
- **Reaction:** In response, the floor exerts an equal force upwards on the ball.

This upward force exerted by the floor on the ball is what causes the ball to reverse its direction and move upwards, resulting in the bounce. The ball's ability to bounce depends on its elasticity and the floor's properties, as these allow the force interaction to occur efficiently, but the fundamental principle governing the interaction itself is the action-reaction pair described by Newton's third law.

Analyzing Alternative Explanations

Let's examine why the other options are less suitable as the primary explanation:

- **Newton's first law of motion:** This law deals with inertia – an object at rest stays at rest, and an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force. While inertia affects the ball's motion, it doesn't directly explain the **cause** of the upward bounce force.
- **Newton's second law of motion:** This law relates force, mass, and acceleration ($F = ma$). While the upward force causes the ball to accelerate upwards, this law describes the **effect** of a force, not the interaction that generates the force in the first place.
- **The ball is elastic:** Elasticity is a property of the ball (and the floor) that allows it to deform under stress and then return to its original shape, storing and releasing energy. This property is essential for a bounce to occur; without it, the ball would likely just deform permanently or stop. However, elasticity describes **why** the ball can rebound, while Newton's third law describes the **interaction**.

forces that make the rebound happen. The bounce is a result of the force interaction (action-reaction) enabled by the ball's elasticity.

Principle Governing the Ball's Bounce

In summary, while the elasticity of the ball is a necessary condition for bouncing, the immediate physical principle governing the interaction between the ball and the floor that causes the upward motion is **Newton's third law of motion**.

15. Answer: b

Explanation:

This question focuses on identifying the specific **city in Gujarat** where a **New Greenfield Airport** is being planned for development. Greenfield airports are new airport projects built on undeveloped land, distinct from expanding existing airports.

Gujarat Greenfield Airport Project Location

The development of a **New Greenfield Airport** is a significant infrastructure project for the state of **Gujarat**. Among the options provided, the city chosen for this particular airport development is **Dholera**.

Dholera's Role in Airport Development

- **Dholera** is a rapidly developing region in **Gujarat**, envisioned as a major industrial hub and a smart city.
- The establishment of an international airport in **Dholera** is a crucial part of its master plan to enhance connectivity and support economic growth.
- This airport aims to serve the Dholera Special Investment Region (SIR) and surrounding areas, facilitating business and tourism.

Analysis of Options

While cities like Surat, Ahmedabad, and Jamnagar are major urban centers in **Gujarat** with existing or planned airport facilities, the specific project for a **New Greenfield Airport** discussed in the context of major upcoming infrastructure is located in **Dholera**.

Therefore, **Dholera** is the correct city in **Gujarat** for the development of this particular **New Greenfield Airport**.

16. Answer: a

Explanation:

Understanding the Establishment of Tasvir Khana

The question asks to identify the ruler who established the 'Tasvir Khana'. The term 'Tasvir Khana' refers to the imperial atelier or studio dedicated to painting within the Mughal administration. This was the hub for the creation of illustrated manuscripts, portraits, and various forms of fine art during the Mughal era.

Akbar's Role in Founding the Tasvir Khana

Historical consensus points towards Emperor **Akbar** (reigned 1556-1605) as the founder of the organized imperial painting studio, the 'Tasvir Khana'. While his father Humayun initiated the introduction of Persian artistic influence, it was Akbar who institutionalized and greatly expanded this artistic enterprise.

- **Patronage:** **Akbar** was a significant patron of the arts and humanities. He gathered artists from Persia, India, and other regions to work under his direct supervision.
- **Studio Organization:** He established a formal workshop where artists worked on various projects, including the illustration of major historical and literary texts. This systematic approach marked the formal beginning of the 'Tasvir Khana'.
- **Development of Mughal Style:** Under **Akbar's** patronage, the distinct Mughal painting style began to flourish, characterized by a blend of Persian traditions

with indigenous Indian styles (like Rajput painting) and realistic details.

- **Key Projects:** Major illustrated works like the *Hamzanama* (Tales of Amir Hamza) and the *Akbarnama* were produced by the artists of the 'Tasvir Khana' during his reign.

Context of Other Mughal Emperors

It is useful to understand the contributions of the other options in relation to the 'Tasvir Khana':

- **Humayun:** Akbar's father, Humayun, brought Persian artists like Mir Sayyid Ali and Abdus Samad to India. They are credited with laying the initial groundwork for Mughal painting, but the formal establishment and scale occurred under Akbar.
- **Jahangir:** Emperor Jahangir (reigned 1605–1627) was also a passionate art collector and patron. The Mughal painting style matured significantly during his reign, with an emphasis on naturalism, court scenes, and individual portraits. However, he inherited and built upon the foundation laid by Akbar.
- **Shahjahan:** Emperor Shahjahan (reigned 1628–1658) continued the tradition of art patronage, but the style evolved towards greater ornateness and decorative elegance. The focus shifted somewhat from the narrative intensity seen earlier.

Conclusion on Tasvir Khana Establishment

Considering the institutionalization and large-scale organization of the imperial painting studio, Emperor **Akbar** is recognized as the founder of the 'Tasvir Khana'. His reign marked a pivotal period for the development and flourishing of Mughal painting.

17. Answer: a

Explanation:

Indian Navy Kalvari Class Submarine Commissioning Details

The question asks to identify the specific Kalvari class submarine that was commissioned into the Indian Navy on **23 January 2023**. The Kalvari class submarines are diesel-electric attack submarines, representing a significant advancement in India's naval capabilities. These submarines are based on the Scorpène class submarine design.

Key Commissioning Event: 23 January 2023

The Indian Navy commissioned the fifth Kalvari class submarine, **INS Vagir**, on **23 January 2023**. This event marked a crucial milestone in the 'Make in India' initiative within the defence sector, as the submarine was built by Mazagon Dock Shipbuilders Limited (MDL) in collaboration with Naval Group of France.

Kalvari Class Submarine Fleet Status

To provide context, here is a summary of the commissioning status of the Kalvari class submarines:

Submarine Name	Commissioning Date
INS Kalvari	8 December 2017
INS Khanderi	28 September 2019
INS Karanj	10 March 2021
INS Vela	25 February 2021
INS Vagir	23 January 2023
INS Vagsheer	24 April 2024

Based on the official commissioning dates, INS Vagir was the submarine inducted into service on 23 January 2023.

Conclusion on Commissioned Submarine

The submarine from the Kalvari class that entered service with the Indian Navy on the specified date of 23 January 2023 is **INS Vagir**.

18. Answer: b

Explanation:

Indian Air Force: Unveiling the First Aircraft Induction in 1932

The question asks to identify the very first aircraft that was inducted into the Indian Air Force (IAF) when it was established in 1932. The IAF, initially known as the Royal Indian Air Force, began its journey on October 8, 1932. Understanding the initial equipment is crucial to tracing the history of this important defense force. Let's examine the aircraft mentioned in the options.

Historical Context of IAF's Formation

The establishment of the Indian Air Force in 1932 marked a significant milestone in India's military history. The British authorities established it as a force operating under the British Crown. The initial operations and equipment were fundamental to its early development.

Analyzing the Aircraft Options

- **Westland Wapiti:** This aircraft was a British-made, two-seater, general-purpose biplane. It served various roles, including army co-operation, reconnaissance, and training. Historical records confirm that the Westland Wapiti was indeed

the first aircraft type to be operated by the IAF. The very first flight of the IAF, No. 1 Squadron, was formed on April 1, 1933, and equipped with Westland Wapiti aircraft. Therefore, it is considered the inaugural aircraft inducted in 1932, marking the beginning of air power for India.

- **Havilland Tiger Moth:** While the de Havilland Tiger Moth became an iconic training aircraft for the IAF and many other air forces globally, it was introduced into service later than 1932. It primarily served as a basic trainer.
- **Supermarine Spitfire:** The Supermarine Spitfire is a legendary British fighter aircraft famous for its role in World War II. It was inducted into the IAF much later, significantly after its formation in 1932, primarily during the WWII era for combat roles.
- **Fairchild Packet:** The Fairchild C-119 Flying Boxcar (often referred to generally by aircraft families like Fairchild Packet) was a transport and troop transport aircraft used by various air forces. Its induction into the IAF occurred much later in the post-World War II era.

Conclusion: The Inaugural IAF Aircraft

Based on the historical timeline and the initial equipping of the Indian Air Force upon its formation in 1932, the **Westland Wapiti** stands out as the first aircraft inducted. It formed the backbone of the nascent air force during its early years, playing a vital role in its operational beginnings.

Therefore, the correct option is the **Westland Wapiti**.

19. Answer: d

Explanation:

Option 4 is correct i.e. **Dhruvastra**.

★ Key Points

- **Dhruvastra ATGM** stands for "Dhruvastra Anti-Tank Guided Missile."

- It is an anti-tank guided missile developed by the **Defence Research and Development Organisation (DRDO)** of India.
- Dhruvastra is designed to be launched from helicopters and ground-based platforms.
- The missile is equipped with state-of-the-art guidance systems to accurately engage and destroy enemy tanks and armoured vehicles.
- It features **fire-and-forget and top-attack capabilities**, enhancing its effectiveness against armoured targets.
- Dhruvastra is part of India's efforts to indigenously develop advanced defense technologies to strengthen its armed forces.
- The development of Dhruvastra contributes to India's goal of achieving self-reliance in defense manufacturing and reducing dependence on imported weapon systems.

20. Answer: a

Explanation:

X-Ray Discovery: Pinpointing the Discoverer

This section focuses on identifying the scientist credited with the groundbreaking discovery of X-rays, a significant event in the field of physics and medicine.

Understanding the Discovery of X-Ray

The discovery of X-rays marked a pivotal moment in scientific history, leading to advancements in various fields, especially medical imaging. X-rays are a form of electromagnetic radiation with very short wavelengths, enabling them to pass through many substances that are opaque to visible light.

- The discovery occurred in the year 1895.
- It was an accidental finding during experiments involving cathode rays.

Identifying Wilhelm Roentgen as the Discoverer of X-Ray

The scientist credited with discovering X-Ray is **Wilhelm Roentgen**.

- **Wilhelm Roentgen**, a notable German physicist, stumbled upon this new type of radiation while working with cathode ray tubes.
- He observed that an unknown ray emanated from the tube, capable of passing through various materials.
- Roentgen's famous experiment involved placing his hand in the path of these rays, producing an image of his bones and ring on a photographic plate, demonstrating the penetrating power of X-rays.
- He designated this radiation as 'X-rays' because their nature was initially a mystery.
- His pioneering work in discovering X-rays earned him the distinction of being the first recipient of the Nobel Prize in Physics in 1901.

Contributions of Other Scientists Mentioned

It is helpful to distinguish Roentgen's discovery from the contributions of the other scientists listed:

- **Michael Faraday**: An English scientist renowned for his foundational work in electromagnetism and electrochemistry. His key contributions include the discovery of electromagnetic induction and the laws of electrolysis.
- **John Napier**: A Scottish mathematician celebrated for his invention of logarithms and the Napier's bones, a mechanical calculating device.
- **James Chadwick**: A British physicist who made a significant contribution to nuclear physics by discovering the neutron in 1932.

Based on these scientific achievements, **Wilhelm Roentgen** is recognized as the discoverer of X-Ray.

21. Answer: b

Explanation:

G20 India 2023 Summit Theme Explained

India had the significant responsibility of hosting the **G20 2023 summit**. This major international gathering brings together leaders from the world's largest economies to discuss critical global issues. A key aspect of any G20 presidency is the selection of a theme that shapes the agenda and reflects the host country's priorities for the year.

Identifying India's G20 2023 Presidency Theme

The theme adopted by India for its G20 presidency in **2023** was **"One Earth One Family One Future"**. This theme draws inspiration from the ancient Indian philosophy of '*Vasudhaiva Kutumbakam*', which translates to 'the world is one family'.

This choice of theme highlights several important global concepts:

- **Interconnectedness:** It underscores the idea that all nations and people are linked and share a common destiny.
- **Collective Responsibility:** It emphasizes the need for countries to work together to address shared challenges, such as climate change, economic stability, and public health.
- **Sustainable Future:** It focuses on creating a better future for everyone, promoting growth that is both inclusive and environmentally conscious.

Analyzing the Options for G20 2023

To confirm the correct theme for the **G20 2023** summit hosted by India, let's consider the options provided:

- **"It's Time for Wetlands Restoration":** While environmental issues like wetland restoration are important global concerns often discussed, this specific phrase was not the designated theme for the G20 2023 summit.
- **"One Earth One Family One Future":** This option correctly represents the theme chosen by India for its G20 presidency, reflecting its philosophical and policy focus for the year.
- **"Today's Era Is Not an Era of War":** This statement, while impactful and spoken by India's Prime Minister during the summit, served as a significant message on

international relations rather than the official overarching theme of the G20 2023 summit itself.

- **"Uniting the World against Terrorism":** Counter-terrorism is a vital agenda item for many international forums, including the G20, but it was not the specific theme guiding the 2023 summit under India's leadership.

The central message guiding India's successful hosting of the **G20 2023 summit** was indeed **"One Earth One Family One Future"**.

22. Answer: c

Explanation:

Determining the Location of the Indian Space Research Organisation's Headquarters

This question asks to identify the specific city in India that serves as the headquarters for the **Indian Space Research Organisation (ISRO)**. ISRO is India's national space agency and is responsible for space exploration and research.

About ISRO Headquarters

The **Indian Space Research Organisation's headquarter** is the central administrative and operational hub for all of ISRO's activities. Finding this location is crucial for understanding the organizational structure of India's space program.

Evaluating the Options for ISRO's Headquarter Location

Let's look at each provided option in relation to the location of the **Indian Space Research Organisation's headquarter**:

- **New Delhi:** Often the location for national administrative centers, New Delhi houses many government headquarters. However, it is not the base for ISRO's space operations and research management.

- **Mumbai:** Known as India's financial capital, Mumbai hosts significant commercial and economic activities but is not the location of ISRO's central office.
- **Bengaluru:** This city, the capital of Karnataka, is a major hub for science, technology, and aerospace in India. The headquarters of the **Indian Space Research Organisation** is situated in Bengaluru. It is from here that ISRO coordinates its various missions, research, and development activities.
- **Kolkata:** A major city in Eastern India, Kolkata is known for its cultural and historical significance, but it does not host the **ISRO headquarters**.

Finalizing the Location

The analysis confirms that Bengaluru is the correct location. The city serves as the primary center for the **Indian Space Research Organisation**, managing its vast network of facilities and ambitious space exploration projects.

23. Answer: b

Explanation:

Brahmo Samaj Founder Identification

The question asks to identify the founder of the Brahmo Samaj, a significant socio-religious reform movement in India during the 19th century. Understanding the origins of such movements is crucial for grasping India's social and religious history.

Key Figure in Brahmo Samaj Founding

The Brahmo Samaj was established in 1828 in Kolkata (then Calcutta). The principal founder and driving force behind this reform movement was **Raja Rammohan Roy**. He was a prominent social reformer and religious thinker, often regarded as the 'Father of Modern India'. His efforts aimed at reforming Hinduism, combating practices like Sati, and promoting monotheism and rationalism.

Analysis of Options Provided

Let's examine the options in relation to the founding of the Brahmo Samaj:

- **Keshab Chandra Sen:** While Keshab Chandra Sen was a prominent leader of the Brahmo Samaj and played a crucial role in its expansion, particularly after Raja Rammohan Roy's time, he was not the original founder. He later led a faction known as the Brahmo Samaj of India.
- **Raja Rammohan Roy:** Recognized as the primary founder of the Brahmo Samaj. His vision and initiative led to the establishment of this influential movement.
- **Devendranath Tagore:** Devendranath Tagore, father of the famous poet Rabindranath Tagore, was a key figure who joined the Brahmo Samaj and revitalized it, becoming its leader after Roy's death. However, he was not the initial founder.
- **Dayananda Saraswathi:** Dayananda Saraswathi was the founder of the Arya Samaj, another important socio-religious reform movement. The Arya Samaj had different objectives and principles compared to the Brahmo Samaj, focusing on a return to Vedic principles and opposing idol worship and caste distinctions, but through a different framework than the Brahmo Samaj.

Conclusion on Brahmo Samaj Founder

Based on historical records, **Raja Rammohan Roy** is credited with founding the Brahmo Samaj. His pioneering work laid the foundation for religious and social reform in India, influencing subsequent generations of reformers and movements.

24. Answer: a

Explanation:

Cricket

Based on the analysis of the terms and their usage in various sports, it is clear that Fine leg, Gully, and Midwicket are terms used in Cricket

25. Answer: a

Explanation:

Railway stations often feature platforms of varying lengths to accommodate different types of trains. Understanding the infrastructure supporting these stations can be interesting, especially when discussing records.

World's Longest Railway Station Platform Details

The record for the **world's longest railway station platform** belongs to a station located in **India**. This impressive piece of railway infrastructure is designed to handle extremely long trains efficiently.

Identifying the Location and Features

The platform that holds the title of the world's longest is situated at the Shri Siddharoodha Swamiji Hubballi Junction, formerly known as Hubli Junction. Key details include:

- **Country:** India
- **Station:** Shri Siddharoodha Swamiji Hubballi Junction
- **State:** Karnataka
- **Platform Length:** Approximately 1,505 meters (which is about 4,938 feet).

Significance of the Hubballi Platform

The considerable length of this platform in **India** is a testament to railway engineering and operational planning. Its dimensions allow multiple passenger trains to be stationed or managed simultaneously, contributing to smoother railway operations within the region. This makes the Hubballi station a notable landmark in the country's vast railway network.

Therefore, when considering the location of the **world's longest railway station platform**, the country is **India**.

26. Answer: a

Explanation:

Fraction Ratio Calculation

The problem asks us to find a specific **fraction**. This fraction needs to have a particular proportional relationship, known as a **ratio**, with

$$\frac{1}{27}$$

. This **ratio** must be identical to the **ratio** between

$$\frac{3}{11}$$

and

$$\frac{5}{9}$$

. We need to identify this fraction from the given multiple-choice options.

Understanding the Ratio Problem

Let's denote the unknown **fraction** we need to find as ' x '. The question states that the **ratio** of ' x ' to

$$\frac{1}{27}$$

is the **same** as the **ratio** of

$$\frac{3}{11}$$

to

$$\frac{5}{9}$$

We can express this equality of ratios using the following mathematical equation:

$$\frac{x}{\frac{1}{27}} = \frac{\frac{3}{11}}{\frac{5}{9}}$$

Calculating the Known Ratio

First, we need to compute the value of the known ratio, which is

$$\frac{\frac{3}{11}}{\frac{5}{9}}$$

To divide one fraction by another, we multiply the first fraction by the reciprocal (inverse) of the second fraction:

$$\frac{3}{11} \div \frac{5}{9} = \frac{3}{11} \times \frac{9}{5}$$

Now, we multiply the numerators together and the denominators together:

$$\frac{3 \times 9}{11 \times 5} = \frac{27}{55}$$

So, the calculated value for the known ratio is

$$\frac{27}{55}$$

Setting Up the Equation for the Unknown Fraction

Next, let's simplify the left side of our original equation:

$$\frac{x}{\frac{1}{27}}$$

Similar to the previous step, dividing ' x ' by

$$\frac{1}{27}$$

is the same as multiplying ' x ' by the reciprocal of

$$\frac{1}{27}$$

, which is

$$\frac{27}{1}$$

or simply 27:

$$x \div \frac{1}{27} = x \times 27 = 27x$$

Now, we can equate the simplified left side with the calculated value of the right side:

$$27x = \frac{27}{55}$$

Solving for the Unknown Fraction

Our goal is to find the value of ' x '. To isolate ' x ', we divide both sides of the equation by 27:

$$x = \frac{27}{55} \div 27$$

Again, dividing by 27 is the same as multiplying by its reciprocal,

$$\frac{1}{27}$$

.

$$x = \frac{27}{55} \times \frac{1}{27}$$

Notice that 27 appears in both the numerator and the denominator. We can cancel these out:

$$x = \frac{27^1}{55} \times \frac{1}{27^1} = \frac{1}{55}$$

Therefore, the unknown fraction ' x ' is

$$\frac{1}{55}$$

.

Final Answer Verification

The calculated fraction is

$$\frac{1}{55}$$

. Comparing this result with the given options, we find that it matches option 1.

27. Answer: b

Explanation:

Understanding Probability for Two Dice Sums

This solution explains how to find the probability when two dice are thrown, specifically focusing on the event where the sum of the numbers shown is either 3 or 5. We'll break down the problem step-by-step.

Identifying the Total Possible Outcomes (Sample Space)

When Mohit throws one dice and Rohit throws another dice, each dice has 6 possible outcomes: {1, 2, 3, 4, 5, 6}. To find the total number of combined outcomes, we multiply the number of outcomes for each dice.

- Total Outcomes = (Outcomes for Mohit's dice) $\times$ (Outcomes for Rohit's dice)
- Total Outcomes = $6 \times 6 = 36$

This means there are 36 possible combinations when two dice are thrown. We can list them systematically, but knowing the total count (36) is essential for calculating probability.

Finding Favorable Outcomes for Sum = 3

We need to find the pairs of numbers from the two dice that add up to 3. Let's list these combinations:

- (1, 2) – Mohit gets 1, Rohit gets 2
- (2, 1) – Mohit gets 2, Rohit gets 1

There are 2 outcomes where the sum is 3.

Finding Favorable Outcomes for Sum = 5

Next, we find the pairs of numbers from the two dice that add up to 5:

- (1, 4) – Mohit gets 1, Rohit gets 4
- (4, 1) – Mohit gets 4, Rohit gets 1
- (2, 3) – Mohit gets 2, Rohit gets 3
- (3, 2) – Mohit gets 3, Rohit gets 2

There are 4 outcomes where the sum is 5.

Calculating Combined Favorable Outcomes

The question asks for the probability that the sum is 3 OR 5. Since the event 'sum is 3' and the event 'sum is 5' cannot happen at the same time (they are mutually exclusive), we can simply add the number of favorable outcomes for each event.

- Total Favorable Outcomes = (Outcomes for Sum=3) + (Outcomes for Sum=5)
- Total Favorable Outcomes = $2 + 4 = 6$

So, there are 6 combinations where the sum of the numbers on the dice is either 3 or 5.

Calculating the Probability

The probability of an event is calculated using the formula:

$$P(\text{Event}) = \frac{\text{Number of Favorable Outcomes}}{\text{Total Number of Possible Outcomes}}$$

In this case, the event is getting a sum of 3 or 5.

- Number of Favorable Outcomes = 6
- Total Number of Possible Outcomes = 36

Therefore, the probability is:

$$P(\text{Sum is 3 or 5}) = \frac{6}{36}$$

Simplifying the Probability

We can simplify the fraction $\frac{6}{36}$ by dividing both the numerator and the denominator by their greatest common divisor, which is 6.

$$\frac{6 \div 6}{36 \div 6} = \frac{1}{6}$$

Thus, the probability that the sum of the numbers appearing on the tops of the two dice is 3 or 5 is $\frac{1}{6}$.

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28. Answer: c

Explanation:

Solving Clock Accuracy Problems

This question asks us to find the specific time when a faulty clock, which is sometimes slow and sometimes fast, showed the correct time. We need to analyze its rate of change.

Understanding the Clock's Initial and Final States

We are given two conditions about the clock's accuracy:

- **Initial State:** On Sunday at 2 p.m., the clock was 3 minutes late. This means the clock's time was 3 minutes behind the actual time.
- **Final State:** On Tuesday at 2 p.m., the clock was 5 minutes fast. This means the clock's time was 5 minutes ahead of the actual time.

Calculating the Total Time Elapsed

The time interval between the initial state (Sunday 2 p.m.) and the final state (Tuesday 2 p.m.) needs to be calculated. This period covers exactly two full days.

The duration is:

Total Time = 48 hours

Calculating the Total Change in the Clock's Error

During the 48 hours, the clock's error changed from being 3 minutes behind to 5 minutes ahead. The total change in the clock's deviation is the sum of the initial lag and the final lead.

Total Deviation Change = (Initial Lag) + (Final Lead)

Using LaTeX notation:

Total Deviation Change = 3 minutes + 5 minutes = 8 minutes

This means that over the 48-hour period, the clock effectively corrected its time by 8 minutes (it moved from being 3 minutes slow to 5 minutes fast).

Determining the Clock's Rate of Gain

We can now find the average rate at which the clock gains time per hour during this period.

Rate of Gain = $\frac{\text{Total Deviation Change}}{\text{Total Time}}$

Substituting the values using LaTeX:

$$\text{Rate of Gain} = \frac{8 \text{ minutes}}{48 \text{ hours}} = \frac{1}{6} \text{ minutes per hour}$$

This tells us the clock gains $\frac{1}{6}$ of a minute every hour.

Calculating the Time Needed to Show the Correct Time

The clock started 3 minutes late on Sunday at 2 p.m. To show the correct time, it needs to gain these 3 minutes. We can calculate the time required using the rate of gain we just found.

$$\text{Time Needed} = \frac{\text{Minutes the clock was late}}{\text{Rate of Gain per hour}}$$

Using LaTeX for the calculation:

$$\text{Time Needed} = \frac{3 \text{ minutes}}{\frac{1}{6} \text{ minutes/hour}} = 3 \times 6 \text{ hours} = 18 \text{ hours}$$

Determining the Final Correct Time

The clock showed the correct time 18 hours after the starting point (Sunday 2 p.m.).

Starting Time: Sunday 2 p.m.

Adding 18 hours to the starting time:

- Sunday 2 p.m. + 12 hours = Monday 2 a.m.
- Monday 2 a.m. + 6 hours = Monday 8 a.m.

So, the clock showed the correct time on Monday at 8 a.m.

Conclusion

The calculation shows that the clock would display the correct time 18 hours after Sunday 2 p.m., which corresponds to Monday 8 a.m. This matches one of the options provided.

29. Answer: a

Explanation:

Given -

Sugar costing Rs. 45 per kg be mixed with sugar costing Rs. 52 per kg

Profit = 15%, selling price = Rs. 55.20

Formula used -

Selling price = $(100 + \text{profit}) \times \text{cost price} / 100$

Solution -

Let the cost price of the whole mixture be Rs. x.

$$\Rightarrow x = 55.2 \times 100 / 115$$

$$\Rightarrow x = \text{Rs. } 48$$

$$\text{Ratio} = (52 - 48) : (48 - 45)$$

$$\Rightarrow 4 : 3$$

$\therefore$ The ratio is 4 : 3.

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30. Answer: a**Explanation:**

Given:

The marked price of an article is 50% more than its cost price.

Formula used:

Selling Price(S.P) = Marked Price $\times$ $(100 - \text{Discount\%}) / 100$

Calculation:

Let the Cost price be Rs. 150

The marked price of an article is 100% more than its cost price.

$$\Rightarrow \text{Marked price} = 150 \times 200/100$$

$$\Rightarrow \text{Rs. 300}$$

$$\text{SP} = 300 \times 100/150 = 200$$

$$\text{Profit} = 200 - 150 = 50$$

$$\text{New SP} = 200 \times 120/100 = 240$$

$$\text{Profit} = 240 - 150 = 90$$

$$\text{Difference of profit} = 90 - 50 = 40$$

$$40 \rightarrow 2000$$

$$150 \rightarrow 2000/40 \times 150 = 7500$$

The answer is 7500

31. Answer: b

Explanation:

Understanding Partnership Profit Distribution

This problem involves calculating the share of profit for a partner in a business, considering their initial capital investment and subsequent changes in capital over time. We need to determine the effective capital contributed by each partner (A and B) throughout the year and use this to find their profit-sharing ratio.

Calculating Initial Capital Ratio

First, we simplify the initial capital ratio given for partners A and B:

- The ratio is given as $\frac{4}{3} : \frac{5}{6}$.
- To simplify this ratio, we find the least common multiple (LCM) of the denominators (3 and 6), which is 6.
- Multiply both parts of the ratio by 6:
 - For A: $(\frac{4}{3}) \times 6 = \frac{24}{3} = 8$
 - For B: $(\frac{5}{6}) \times 6 = 5$
- Thus, the initial capital ratio between A and B is **8:5**.

Let's assume their initial capitals were $8x$ and $5x$ respectively.

Calculating Effective Capital Contribution

The partnership lasts for one year (12 months). Changes in capital occur after 6 months. We need to calculate the total weighted capital for each partner.

Partner A's Effective Capital

- For the first 6 months, A's capital was $8x$.
- After 6 months, A reduced his capital by 25%.
 - Reduction amount = 25% of $8x = 0.25 \times 8x = 2x$.
 - A's new capital = $8x - 2x = 6x$.
- For the remaining 6 months (from month 7 to 12), A's capital was $6x$.
- A's total effective capital contribution over the year = (Capital for first 6 months $\times 6$) + (Capital for next 6 months $\times 6$)
 - A's effective capital = $(8x \times 6) + (6x \times 6)$
 - A's effective capital = $48x + 36x = 84x$ (in units of capital $\times$ months).

Partner B's Effective Capital

- For the first 6 months, B's capital was $5x$.
- After 6 months, B increased his capital by 50%.
 - Increase amount = 50% of $5x = 0.50 \times 5x = 2.5x$.
 - B's new capital = $5x + 2.5x = 7.5x$.
- For the remaining 6 months, B's capital was $7.5x$.
- B's total effective capital contribution over the year = (Capital for first 6 months $\times 6$) + (Capital for next 6 months $\times 6$)

- B's effective capital = $(5x \times 6) + (7.5x \times 6)$
- B's effective capital = $30x + 45x = 75x$ (in units of capital $\times$ months).

Determining the Profit-Sharing Ratio

The profit-sharing ratio is determined by the ratio of the effective capital contributions of the partners.

- Ratio of A's effective capital : B's effective capital = $84x : 75x$.
- Simplifying the ratio by dividing both sides by $3x$:
 - A's share ratio = $\frac{84x}{3x} = 28$
 - B's share ratio = $\frac{75x}{3x} = 25$
- The profit-sharing ratio is **28:25**.

Calculating B's Share of Profit

The total profit is Rs. 63.6 lakhs. We use the profit-sharing ratio (28:25) to calculate B's share.

- Total parts in the profit-sharing ratio = $28 + 25 = 53$.
- B's share of the profit is calculated as:

$$\text{B's Profit Share} = \left(\frac{\text{B's Ratio Part}}{\text{Total Ratio Parts}} \right) \times \text{Total Profit}$$

- Substituting the values:

$$\text{B's Profit Share} = \left(\frac{25}{53} \right) \times 63.6 \text{ lakhs}$$

- Calculation:

$$\text{B's Profit Share} = \frac{25 \times 63.6}{53} \text{ lakhs}$$

$$\text{B's Profit Share} = \frac{1590}{53} \text{ lakhs}$$

$$\text{B's Profit Share} = 30 \text{ lakhs}$$

Final Answer

The share of B in the profit of Rs. 63.6 lakhs is Rs. 30 lakhs.

32. Answer: d

Explanation:

Understanding Successive Discounts

This question asks us to find a single discount percentage that has the same effect as applying three separate discounts one after another. These are called successive discounts. The key idea is that each subsequent discount is calculated on the reduced price, not the original price.

Calculating the Equivalent Single Discount

Let's break down how to find the single equivalent discount. We can assume an initial price to make the calculation straightforward. A common choice is 100.

Step-by-Step Calculation:

1. **Assume Initial Price:** Let the original marked price be 100.
2. **Apply the First Discount (20%):**

The first discount is 20%. The amount of discount is:

$$\text{Discount Amount} = 20\% \text{ of } 100 = \frac{20}{100} \times 100 = 20.$$

The price after the first discount is:

$$\text{Price after 1st discount} = 100 - 20 = 80.$$

3. **Apply the Second Discount (15%):**

The second discount of 15% is applied to the new price, which is 80.

$$\text{Discount Amount} = 15\% \text{ of } 80 = \frac{15}{100} \times 80 = \frac{15 \times 8}{10} = \frac{120}{10} = 12.$$

The price after the second discount is:

$$\text{Price after 2nd discount} = 80 - 12 = 68.$$

4. Apply the Third Discount (10%):

The third discount of 10% is applied to the price after the second discount, which is 68.

$$\text{Discount Amount} = 10\% \text{ of } 68 = \frac{10}{100} \times 68 = \frac{68}{10} = 6.8.$$

The final selling price is:

$$\text{Final Price} = 68 - 6.8 = 61.2.$$

5. Calculate the Total Discount Amount:

The total discount is the difference between the original price and the final price.

$$\text{Total Discount} = \text{Original Price} - \text{Final Price} = 100 - 61.2 = 38.8.$$

6. Find the Equivalent Single Discount Percentage:

The single equivalent discount is calculated as the total discount amount divided by the original price, multiplied by 100.

$$\text{Equivalent Single Discount} = \frac{\text{Total Discount}}{\text{Original Price}} \times 100$$

$$\text{Equivalent Single Discount} = \frac{38.8}{100} \times 100 = 38.8\%.$$

Alternative Method Using Multiplicative Factors

We can also solve this by finding the final remaining percentage after all discounts.

- Remaining percentage after 20% discount = $100\% - 20\% = 80\% = 0.80$.
- Remaining percentage after 15% discount = $100\% - 15\% = 85\% = 0.85$.
- Remaining percentage after 10% discount = $100\% - 10\% = 90\% = 0.90$.

To find the final remaining percentage after all successive discounts, we multiply these remaining percentages:

$$\text{Final Remaining Percentage} = 0.80 \times 0.85 \times 0.90$$

$$\text{Final Remaining Percentage} = 0.68 \times 0.90 = 0.612.$$

This means the final price is 0.612 times the original price. The total discount is the difference from the original 1 (or 100%).

$$\text{Equivalent Single Discount} = (1 - 0.612) \times 100 = 0.388 \times 100 = 38.8\%.$$

Conclusion

Both methods show that the single discount equivalent to successive discounts of 20%, 15%, and 10% is 38.8%.

33. Answer: b

Explanation:

CALCULATIONS:

$$\sqrt[3]{1331} = (11 \times 11 \times 11)^{(1/3)} = 11$$

$$\sqrt[4]{4096} = (8 \times 8 \times 8 \times 8)^{(1/4)} = 8$$

$$\frac{\sqrt[3]{1331}}{\sqrt[4]{4096}} \times \frac{4}{33} \times 48 = \frac{11}{8} \times \frac{4}{33} \times 48$$

$$\Rightarrow (1/6) \times 48 = 8$$

∴ The simplified value is 8



Confusion Points $\sqrt[4]{4096} = (8 \times 8 \times 8 \times 8)^{(1/4)} = 8$

34. Answer: b

Explanation:

Understanding the Average Weight Change Problem

This problem involves calculating changes in the average weight of a group when some members leave and others join. We need to determine the average weight of a subset of the new members based on the overall change in average weight.

Calculating Initial Total Weight

We start with 100 residents having an average weight of 51 kg. The total weight of these 100 residents can be calculated as:

$$\text{Initial Total Weight} = \text{Number of Residents} \times \text{Average Weight}$$

$$\text{Initial Total Weight} = 100 \times 51 \text{ kg} = 5100 \text{ kg}$$

Weight of Departing Residents

Five residents left the colony. Their average weight was the same as the colony's average, which is 51 kg.

$$\text{Weight of 5 Leaving Residents} = 5 \times 51 \text{ kg} = 255 \text{ kg}$$

Weight After Departure

After these 5 residents left, the total weight of the remaining 95 residents is:

$$\text{Weight of 95 Residents} = \text{Initial Total Weight} - \text{Weight of 5 Leaving Residents}$$

$$\text{Weight of 95 Residents} = 5100 \text{ kg} - 255 \text{ kg} = 4845 \text{ kg}$$

Calculating New Average Weight

The average weight of the 100 residents (after the replacement) decreased by 225 g. First, we convert the decrease to kilograms:

$$\text{Decrease in Average Weight} = 225 \text{ g} = \frac{225}{1000} \text{ kg} = 0.225 \text{ kg}$$

The new average weight of the 100 residents is:

$$\text{New Average Weight} = \text{Initial Average Weight} - \text{Decrease}$$

$$\text{New Average Weight} = 51 \text{ kg} - 0.225 \text{ kg} = 50.775 \text{ kg}$$

Calculating New Total Weight

With the new average weight, the new total weight of the 100 residents is:

$$\text{New Total Weight} = 100 \times \text{New Average Weight}$$

$$\text{New Total Weight} = 100 \times 50.775 \text{ kg} = 5077.5 \text{ kg}$$

Determining the Total Weight of New Residents

The difference between the new total weight and the weight of the 95 residents (before the new family arrived) represents the total weight of the 5 new residents who joined.

$$\text{Total Weight of 5 New Residents} = \text{New Total Weight} - \text{Weight of 95 Residents}$$

$$\text{Total Weight of 5 New Residents} = 5077.5 \text{ kg} - 4845 \text{ kg} = 232.5 \text{ kg}$$

Calculating the Weight of the Remaining 3 New Residents

We know the average weight of 2 of the new residents is 63 kg. Their combined weight is:

$$\text{Weight of 2 New Residents} = 2 \times 63 \text{ kg} = 126 \text{ kg}$$

To find the weight of the remaining 3 new residents, we subtract the weight of the 2 residents from the total weight of the 5 new residents:

Weight of Remaining 3 New Residents = Total Weight of 5 New Residents – Weight of 2 New Residents

Weight of Remaining 3 New Residents = 232.5 kg – 126 kg = 106.5 kg

Final Calculation: Average Weight of Remaining Residents

Finally, we calculate the average weight of the remaining 3 new residents:

Average Weight of Remaining 3 = $\frac{\text{Weight of Remaining 3 New Residents}}{\text{Number of Remaining Residents}}$

Average Weight of Remaining 3 = $\frac{106.5 \text{ kg}}{3} = 35.5 \text{ kg}$

Conclusion

The average weight of the remaining 3 new residents is **35.5 kg**.

35. Answer: d

Explanation:

Given:

The current population of the town = 60500

Growth rate of 10% compounded every year for the past few years.

Concept used:

Population after two years = Present population $\times (100\% + P\%)^n$

Where,

P = Percentage increase

n = number of years

Calculation:

Let 'P' be the population of the town two years ago.

According to the question,

$$\Rightarrow P \times (100\% + 10\%)^2 = 60500$$

$$\Rightarrow P \times (100\% + 10\%) \times (100\% + 10\%) = 60500$$

$$\Rightarrow P \times 110\% \times 110\% = 60500$$

$$\Rightarrow P \times \frac{110}{100} \times \frac{110}{100} = 60500$$

$$\Rightarrow P \times 11 \times 11 = 60500 \times 100$$

$$\Rightarrow P = 50000$$

Therefore, "50000" is the required answer.

36. Answer: d

Explanation:

Calculating the Train Crossing Time

This solution explains how to determine the exact time when two trains, starting from different locations and at different times, will cross each other. We will analyze the speeds and travel times of the trains to find the meeting point.

Information Provided

- Train 1: Leaves Meerut at 5:00 a.m. and arrives in Delhi at 9:00 a.m.
- Train 2: Leaves Delhi at 7:00 a.m. and arrives in Meerut at 10:30 a.m.

Step 1: Calculate Travel Durations

- **Train 1 Duration:** From 5:00 a.m. to 9:00 a.m. is 4 hours.
- **Train 2 Duration:** From 7:00 a.m. to 10:30 a.m. is 3 hours and 30 minutes, which is equal to 3.5 hours or $\frac{7}{2}$ hours.

Step 2: Define Speeds Relative to Distance

Let the distance between Meerut and Delhi be denoted by D . We can express the speed of each train using this distance and their respective travel times.

- **Speed of Train 1 (S_1):**

$$S_1 = \frac{\text{Distance}}{\text{Time}} = \frac{D}{4} \text{ km/hr}$$

- **Speed of Train 2 (S_2):**

$$S_2 = \frac{\text{Distance}}{\text{Time}} = \frac{D}{3.5} = \frac{D}{7/2} = \frac{2D}{7} \text{ km/hr}$$

Step 3: Analyze the Situation at 7:00 a.m.

Train 2 starts its journey at 7:00 a.m. We need to determine the position of Train 1 at this exact moment.

- Train 1 starts at 5:00 a.m. By 7:00 a.m., it has been traveling for 2 hours (7:00 a.m. – 5:00 a.m.).
- **Distance covered by Train 1 by 7:00 a.m.:**

$$\text{Distance} = S_1 \times \text{Time} = \left(\frac{D}{4} \right) \times 2 = \frac{2D}{4} = \frac{D}{2}$$

- At 7:00 a.m., Train 1 is $\frac{D}{2}$ distance away from Meerut, heading towards Delhi.
- At 7:00 a.m., Train 2 is at Delhi, just starting its journey towards Meerut.
- Therefore, the distance remaining between the two trains at 7:00 a.m. is the distance Train 1 still needs to cover, which is $D - \frac{D}{2} = \frac{D}{2}$.

Step 4: Calculate the Relative Speed

Since the trains are moving towards each other from 7:00 a.m. onwards, their speeds add up. This is their relative speed.

- Relative Speed (S_{rel}):

$$S_{rel} = S_1 + S_2 = \frac{D}{4} + \frac{2D}{7}$$

- To add these fractions, we find a common denominator, which is 28:

$$S_{rel} = \frac{7D}{28} + \frac{8D}{28} = \frac{7D + 8D}{28} = \frac{15D}{28} \text{ km/hr}$$

Step 5: Calculate the Time to Meet After 7:00 a.m.

The time it takes for the trains to meet can be calculated using the distance between them at 7:00 a.m. and their relative speed.

- Time to meet = Distance between trains / Relative Speed

$$\text{Time} = \frac{D/2}{15D/28}$$

- Simplifying the expression:

$$\text{Time} = \frac{D}{2} \times \frac{28}{15D} = \frac{28}{2 \times 15} = \frac{28}{30} = \frac{14}{15} \text{ hours}$$

Step 6: Convert Time to Minutes and Find the Crossing Time

We need to convert the calculated time from hours to minutes.

- Time in minutes:

$$\text{Time} = \frac{14}{15} \times 60 \text{ minutes} = 14 \times 4 \text{ minutes} = 56 \text{ minutes}$$

- This means the trains will meet 56 minutes after 7:00 a.m.
- Actual Crossing Time:

$$7 : 00 \text{ a.m.} + 56 \text{ minutes} = 7 : 56 \text{ a.m.}$$

Conclusion

Based on the calculations, the two trains will cross each other at **7:56 a.m.**

37. Answer: a

Explanation:

Determining Rectangle Area from Fencing Cost

This explanation details how to calculate the approximate area of a rectangle using the provided fencing costs.

Understanding the Fencing Cost Information

To solve this problem, we need to identify the key financial details related to the fencing:

- **Cost per Hectare:** The expense for fencing one hectare is given as ₹152.
- **Total Fencing Cost:** The total budget allocated for fencing the rectangle is ₹900,000.

The objective is to find the total land area, measured in hectares, that could be fenced with the given budget.

Calculation Method for Area

The area of the rectangle can be found by dividing the total amount spent on fencing by the cost incurred for fencing each hectare. This gives us the total number of hectares covered by the fencing project.

The formula is expressed as:

$$\text{Area (in hectares)} = \frac{\text{Total Cost of Fencing}}{\text{Cost of Fencing per Hectare}}$$

Applying Values to the Formula

We substitute the known values into the formula:

—

$$\text{Area} = \frac{\text{₹}900,000}{\text{₹}152 \text{ per hectare}}$$

Calculating the Result

Performing the division gives us:

$$\text{Area} = \frac{900,000}{152}$$

Calculating this value:

$$\text{Area} \approx 5921.05 \text{ hectares}$$

Finding the Closest Area Option

The calculated area is approximately 5921.05 hectares. We now need to compare this result to the options provided to find the best approximation.

Here is a comparison with the given choices:

Calculation Result	Available Options
Approximately 5921.05 hectares	• 5920 hectares • 6000 hectares • 5950 hectares • 6020 hectares

Comparing 5921.05 hectares with the options, we see that 5920 hectares is the closest value.

Final Conclusion on Area

Based on the calculations, the approximate area of the rectangle that requires fencing is 5920 hectares.

38. Answer: c

Explanation:

Solution: $80\% A = 50\% B \Rightarrow B = 1.6 A$. So $x = 160$.

$\therefore 160$

39. Answer: b

Explanation:

Understanding the Question: Average of Multiples

The question asks us to find the average value of the first 17 numbers that are multiples of 13. Finding the average involves summing up all the numbers in a set and then dividing by the count of numbers in that set.

Listing the First 17 Multiples of 13

The multiples of 13 are the numbers you get when you multiply 13 by consecutive positive integers (1, 2, 3, and so on). We need the first 17 multiples.

The sequence starts like this:

- 1st multiple: $13 \times 1 = 13$
- 2nd multiple: $13 \times 2 = 26$
- 3rd multiple: $13 \times 3 = 39$
- ...
- 17th multiple: $13 \times 17 = 221$

So, the set of numbers we are considering is: 13, 26, 39, ..., 221. This is a sequence of 17 numbers.

Methods to Calculate the Average

There are a couple of ways to find the average of these multiples:

Method 1: Using the Arithmetic Progression Formula

The sequence of multiples of 13 (13, 26, 39, ..., 221) forms an arithmetic progression (AP). An AP is a sequence where the difference between consecutive terms is constant (in this case, the difference is 13).

For an arithmetic progression, the average can be calculated easily using the first and the last term.

The formula for the average of an AP is:

$$\text{Average} = \frac{\text{First Term} + \text{Last Term}}{2}$$

In this case:

- First Term (a) = 13
- Last Term (l) = 221
- Number of terms (n) = 17

Applying the formula:

$$\text{Average} = \frac{13+221}{2} \quad \text{Average} = \frac{234}{2} \quad \text{Average} = 117$$

Method 2: Identifying the Middle Term

When you have an arithmetic progression with an odd number of terms, the average is simply the middle term of the sequence.

We have 17 terms. The position of the middle term is found by:

$$\text{Middle Term Position} = \frac{n+1}{2} \quad \text{Middle Term Position} = \frac{17+1}{2} = \frac{18}{2} = 9$$

So, the average is the 9th multiple of 13.

Calculating the 9th multiple:

$$9\text{th Multiple} = 13 \times 9 = 117$$

Both methods confirm that the average is 117.

Conclusion

The average of the first 17 multiples of 13 is 117.

40. Answer: a

Explanation:

Explaining the Train Crossing Problem

This problem involves two trains moving in opposite directions. We are given the time each train takes to pass a stationary man and the time they take to pass each other. The goal is to find the ratio of their speeds.

Core Concepts in Train Problems

To solve this, we need to understand a few key concepts related to trains:

- **Distance, Speed, and Time:** The fundamental relationship is $\text{Distance} = \text{Speed} \times \text{Time}$.
- **Crossing a Stationary Point (Man):** When a train crosses a stationary point like a man or a pole, the distance the train covers is equal to its own length.
- **Crossing Each Other (Opposite Directions):** When two trains move in opposite directions, their relative speed is the sum of their individual speeds. The total distance they cover while crossing each other is the sum of their lengths.

Calculating Train Lengths Based on Speed

Let's define the variables for the two trains:

- Let S_1 be the speed of the first train.

- Let L_1 be the length of the first train.
- Let S_2 be the speed of the second train.
- Let L_2 be the length of the second train.

We are given the times taken to cross a stationary man:

- The first train takes 28 seconds to cross the man.
- The second train takes 10 seconds to cross the man.

Using the concept of crossing a stationary point (Distance = Length):

- For the first train: $L_1 = S_1 \times 28$.
- For the second train: $L_2 = S_2 \times 10$.

Deriving the Ratio of Speeds

We are also given that the two trains cross each other in 24 seconds while moving in opposite directions.

For trains crossing each other in opposite directions:

- Relative Speed = $S_1 + S_2$.
- Total Distance = $L_1 + L_2$.

Using the time taken to cross each other:

$$\text{Time} = \frac{\text{Total Distance}}{\text{Relative Speed}}$$

Substituting the values:

$$24 = \frac{L_1 + L_2}{S_1 + S_2}$$

Now, substitute the expressions for L_1 and L_2 that we found earlier:

$$24 = \frac{(S_1 \times 28) + (S_2 \times 10)}{S_1 + S_2}$$

Let's solve this equation for the ratio $\frac{S_1}{S_2}$:

1. Multiply both sides by $(S_1 + S_2)$: $24(S_1 + S_2) = 28S_1 + 10S_2$
2. Distribute the 24 on the left side: $24S_1 + 24S_2 = 28S_1 + 10S_2$

3. Now, rearrange the terms to group speeds S_1 on one side and S_2 on the other:

$$24S_2 - 10S_2 = 28S_1 - 24S_1$$

4. Simplify both sides: $14S_2 = 4S_1$

5. To find the ratio $\frac{S_1}{S_2}$, divide both sides by S_2 and then by 4: $\frac{14}{4} = \frac{S_1}{S_2}$

6. Simplify the fraction: $\frac{S_1}{S_2} = \frac{7}{2}$

Final Ratio Confirmation

The calculation shows that the ratio of the speed of the first train to the speed of the second train ($S_1 : S_2$) is 7:2.

41. Answer: a

Explanation:

Given:

In 56 liters,

The ratio of milk to water is 9: 5

Calculation:

The ratio of milk to water is 9: 5

Milk in the total mixture = $\frac{9}{14}$ of the total mixture

Quantity of Milk = $\frac{9}{14} \times 56$

Quantity of Milk = 36 liters

Quantity of Water = Total mixture – Quantity of Milk

Quantity of Water = $56 - 36$

Quantity of Water = 20 liters

$\Rightarrow \frac{36}{(20 + x)} = \frac{9}{16}$

$$\Rightarrow x = 64 - 20 = 44 \text{ litres}$$

The answer is 44 litres.

42. Answer: c

Explanation:

Given:

Length of string: 40 cm

Concept:

Circumference of a circle: $C = 2\pi r$

Calculation:

Since the length of the string is equal to the circumference of the circle, we can rearrange the formula to solve for the radius:

$$r = C / 2\pi$$

$$r = 40 \text{ cm} / 2\pi$$

$$r \approx 6.37 \text{ cm}$$

$\therefore$ The radius of the circle is approximately 6.37 cm.

43. Answer: c

Explanation:

Understanding Average Salary Calculation for Employees

This problem involves calculating the average salary of female employees given information about male employees and the overall average salary. We need to determine the specific average salary for the female staff based on the provided data.

Breakdown of the Problem

- We are given the number of **male employees** and their average salary.
- We are given the number of **female employees**.
- We are given the average salary of **all employees** (both male and female combined).
- The goal is to find the average salary specifically for the **female employees**.

Step-by-Step Solution

Let's denote:

- N_M = Number of Male Employees
- N_F = Number of Female Employees
- Avg_M = Average Salary of Male Employees
- Avg_F = Average Salary of Female Employees
- Avg_{All} = Average Salary of All Employees
- $TotalSal_M$ = Total Salary of Male Employees
- $TotalSal_F$ = Total Salary of Female Employees
- $TotalSal_{All}$ = Total Salary of All Employees

Step 1: Calculate the Total Salary of Male Employees

The total salary for male employees is found by multiplying the number of male employees by their average salary.

Using the given values:

- $N_M = 20$
- $Avg_M = ₹36500$

Calculation:

$$TotalSal_M = N_M \times Avg_M$$

$$TotalSal_M = 20 \times 36500 = 730000$$

So, the total salary of all male employees is ₹730,000.

Step 2: Calculate the Total Salary of All Employees

First, find the total number of employees, and then multiply by the average salary of all employees.

Using the given values:

- $N_M = 20$
- $N_F = 15$
- $Avg_{All} = ₹35300$

Calculation:

$$\text{Total Employees } (N_{All}) = N_M + N_F = 20 + 15 = 35$$

$$TotalSal_{All} = N_{All} \times Avg_{All}$$

$$TotalSal_{All} = 35 \times 35300 = 1235500$$

Therefore, the total salary of all 35 employees is ₹1,235,500.

Step 3: Calculate the Total Salary of Female Employees

The total salary of all employees is the sum of the total salaries of male and female employees. We can find the total salary of female employees by subtracting the total salary of male employees from the total salary of all employees.

Calculation:

$$TotalSal_F = TotalSal_{All} - TotalSal_M$$

$$TotalSal_F = 1235500 - 730000 = 505500$$

The combined total salary of all female employees is ₹505,500.

Step 4: Calculate the Average Salary of Female Employees

Finally, to find the average salary of female employees, divide their total salary by the number of female employees.

Using the values calculated:

- $TotalSal_F = 505500$
- $N_F = 15$

Calculation:

$$Avg_F = \frac{TotalSal_F}{N_F}$$

$$Avg_F = \frac{505500}{15} = 33700$$

Thus, the average salary of the female employees is ₹33,700.

Final Answer Summary

The average salary of the female employees is determined to be ₹33,700. This is derived by calculating the total salaries for males and all employees and then isolating the females' total salary to find their average.

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44. Answer: c

Explanation:

Understanding the Salary Ratio and Increments

This question asks us to find the new ratio of salaries after applying percentage **increments** to the initial salaries. The initial salaries are provided in a specific **ratio** format. Key terms to focus on are **salary**, **ratio**, and **increment**.

The initial salary distribution among A, B, and C is in the ratio **5 : 3 : 2**.

Calculating New Salaries After Increments

To solve this, we can represent the initial salaries using a common multiplier, let's call it k . This makes it easier to track the amounts.

- Initial Salary of A = $5k$
- Initial Salary of B = $3k$
- Initial Salary of C = $2k$

Step-by-Step Calculation for Each Salary

Calculating A's New Salary with Increment

A's salary gets an **increment** of 20%.

The amount of increment for A is calculated as: Increment Amount = $20\% \times 5k = \frac{20}{100} \times 5k = \frac{1}{5} \times 5k = 1k$.

The new salary for A is the initial salary plus the increment: New Salary of A = $5k + 1k = 6k$.

A simpler way to calculate the new salary directly is: New Salary of A = $5k \times (1 + \frac{20}{100}) = 5k \times (1 + 0.20) = 5k \times 1.20 = 6k$.

Calculating B's New Salary with Increment

B's salary receives an **increment** of 25%.

The increment amount for B is: Increment Amount = $25\% \times 3k = \frac{25}{100} \times 3k = \frac{1}{4} \times 3k = \frac{3k}{4}$.

B's new salary is: New Salary of B = $3k + \frac{3k}{4} = \frac{12k}{4} + \frac{3k}{4} = \frac{15k}{4}$.

Using the direct calculation method: New Salary of B = $3k \times (1 + \frac{25}{100}) = 3k \times (1 + 0.25) = 3k \times 1.25 = 3.75k$. (Note that $\frac{15k}{4}$ is equal to $3.75k$)

Calculating C's New Salary with Increment

C's salary gets an **increment** of 30%.

The increment amount for C is: Increment Amount = $30\% \times 2k = \frac{30}{100} \times 2k = \frac{3}{10} \times 2k = \frac{6k}{10} = \frac{3k}{5}$.

C's new salary is: New Salary of C = $2k + \frac{3k}{5} = \frac{10k}{5} + \frac{3k}{5} = \frac{13k}{5}$.

Using the direct calculation method: New Salary of C = $2k \times (1 + \frac{30}{100}) = 2k \times (1 + 0.30) = 2k \times 1.30 = 2.6k$. (Note that $\frac{13k}{5}$ is equal to $2.6k$)

Determining the New Salary Ratio

Now we have the new salaries for A, B, and C as $6k$, $\frac{15k}{4}$, and $\frac{13k}{5}$.

The **new ratio** of their salaries is found by comparing these amounts:

New Ratio = $6k : \frac{15k}{4} : \frac{13k}{5}$

We can remove the common multiplier k from the ratio:

Ratio = $6 : \frac{15}{4} : \frac{13}{5}$

To express this ratio using only whole numbers, we eliminate the fractions. This is done by multiplying each part of the ratio by the Least Common Multiple (LCM) of the denominators (4 and 5).

The LCM of 4 and 5 is 20.

Multiply each term in the ratio by 20: New Ratio = $(6 \times 20) : (\frac{15}{4} \times 20) : (\frac{13}{5} \times 20)$

Calculating the products: New Ratio = $120 : (15 \times 5) : (13 \times 4)$

New Ratio = $120 : 75 : 52$

Final Result of the Ratio Calculation

After applying the specified percentage **increments** to the initial salaries, the **new ratio** of the salaries for A, B, and C is **120 : 75 : 52**.

45. Answer: a

Explanation:

Understanding the Idiom: "Blow His Own Trumpet"

The phrase "**blow his own trumpet**" is a common English idiom. It describes a person who likes to boast about their own accomplishments, skills, or qualities. Essentially, it means someone frequently praises themselves, highlighting their successes and abilities, often in a way that might seem immodest.

Analyzing the Options

We need to determine which option best reflects the meaning of the idiom "**blow his own trumpet**":

- **Option 1: Ramesh likes to praise his own abilities and achievements.**

This option directly aligns with the idiomatic meaning. Praising one's own abilities and achievements is exactly what it means to "**blow his own trumpet**." It captures the essence of self-promotion.

- **Option 2: Ramesh blows his trumpet on winning.**

This option is partially related but too narrow. While someone who boasts might talk about winning, the idiom refers to a general tendency to self-praise, not just specifically when they win. It also takes the phrase too literally.

- **Option 3: Ramesh blows his nose.**

This is an incorrect interpretation based on a literal meaning of the word "blows." It has no connection to the actual meaning of the idiom, which is about boasting.

- **Option 4: Ramesh is ecstatic when the wind blows.**

This option plays on the word "blows" but relates it to the weather (wind). This interpretation is irrelevant to the idiom's meaning, which concerns personal behaviour, not environmental conditions.

Final Interpretation

Based on the analysis, the idiom "**blow his own trumpet**" clearly implies that the person tends to praise their own abilities and achievements. Option 1 is the most accurate reflection of this meaning.

46. Answer: d

Explanation:

Understanding the Meaning of "Waspish"

The question asks for the word that is closest in meaning to the term "**Waspish**". To find the correct answer, we first need to understand what "**Waspish**" means. A person described as **waspish** is easily annoyed, irritable, and tends to speak in a sharp or cross manner, much like the stinging behavior associated with wasps.

Exploring the Options for "Waspish"

Let's examine each option provided to see which one best matches the meaning of "Waspish":

- **Patient:** This word means enduring delays or difficulties without becoming upset or complaining. It is essentially the opposite of being easily irritated, making it an incorrect match for "**Waspish**".
- **Contented:** This means being happy, satisfied, and at ease with one's situation. It describes a state of peace and satisfaction, which is very different from the irritability associated with being "**Waspish**".
- **Subservient:** This term describes someone who is obedient or subordinate to another person, often in an excessively humble way. This meaning has no relation to the irritable nature implied by "**Waspish**".
- **Fretful:** This word means agitated, uncomfortable, or annoyed. Someone who is fretful is prone to worry and complaint, often displaying irritability. This aligns closely with the definition of "**Waspish**".

Identifying the Nearest Synonym for "Waspish"

Comparing the definitions, the word "**Fretful**" is the most similar in meaning to "**Waspish**". Both words describe someone who is easily annoyed, irritable, and prone to complaining or showing anger in a sharp way.

Therefore, the word nearest in meaning to "Waspish" is "Fretful".

47. Answer: d

Explanation:

Anathema Meaning: Exploring Synonyms

The question asks to identify the word that has the nearest meaning to the given word, **Anathema**.

Understanding the Word "Anathema"

The word **Anathema** has a couple of related meanings:

- It can refer to a person or thing that is *detested* or *disliked* intensely.
- It can also mean a formal curse, ban, or the utterance of condemnation, often in a religious context.

Essentially, it signifies something that is strongly opposed, condemned, or hated.

Analyzing the Options

Let's examine the meaning of each option provided:

- **Religious Chant:** This refers to a repetitive song or recitation used in religious worship. It does not relate to hatred or condemnation.
- **Pun:** A pun is a form of wordplay that exploits multiple meanings of a term or similar-sounding words, usually for humorous or rhetorical effect. This is

unrelated to the meaning of **Anathema**.

- **Musical Subject:** This refers to the theme or topic of a musical composition. It has no connection to the meaning of **Anathema**.
- **Curse:** A curse is an expression of ill will or the invocation of a supernatural power to inflict harm or misfortune. It can also signify a formal ban or condemnation. This meaning aligns closely with the strong negative connotation of **Anathema**, representing condemnation and intense dislike or opposition.

Determining the Nearest Meaning

Comparing the options with the definition of **Anathema**:

- Options 1, 2, and 3 (Religious Chant, Pun, Musical Subject) are unrelated concepts.
- Option 4 (Curse) shares the core meaning of condemnation and intense aversion found in **Anathema**. Both words denote something strongly disapproved of or cursed.

Therefore, the word nearest in meaning to **Anathema** among the given choices is **Curse**.

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48. Answer: d

Explanation:

Understanding the Meaning of 'Wan'

The question asks us to find a word that has a similar meaning to the highlighted word '**wan**' in the sentence: "The woman looked **wan** and fragile."

The word '**wan**' describes someone who looks pale and unhealthy. It often suggests a lack of energy or vitality, which fits well with the description '**fragile**'. Someone who is **wan** might appear weak or lacking color in their face.

Analyzing Options for Synonyms of 'Wan'

Let's look at each option to see which one best matches the meaning of 'wan':

- Option 1: agile

'Agile' means able to move quickly and easily. This describes physical ability, not appearance or health, so it is not similar in meaning to 'wan'.

- Option 2: blooming

'Blooming' means looking healthy, fresh, and full of life. This is the opposite of looking pale and fragile. Therefore, 'blooming' is not a synonym for 'wan'.

- Option 3: flushed

'Flushed' describes having a reddish or pinkish color on the face, often due to heat, exertion, or emotion. This is different from the paleness suggested by 'wan'.

- Option 4: pallid

'Pallid' means pale, typically because of poor health or lack of vitality. This description is very close to the meaning of 'wan'. Both words suggest a lack of color and a potentially unwell appearance.

Conclusion: Identifying the Correct Synonym

Comparing the meanings, 'pallid' is the word most similar in meaning to 'wan'. Both words describe a pale appearance, often associated with weakness or illness, fitting the context of the woman looking 'fragile'.

Therefore, the correct word similar in meaning to 'wan' is 'pallid'.

49. Answer: b

Explanation:

- **Understanding the Sentence Context**

The sentence provided is: "I don't feel like hanging out today. I'm feeling a bit unwell." The phrase "hanging out" refers to spending time relaxing or socializing with others. The second part of the sentence, "I'm feeling a bit unwell," explains the reason for not wanting to participate in social activities.

The task is to find the most suitable idiom to substitute a segment in the sentence. Given the options, the focus is on finding an idiom that relates to the feeling of being unwell.

- **Analyzing Idiom Options**

Let's examine the meaning of each idiom provided in the options:

- **Option 1: under the coat**

This phrase is not a standard English idiom with a widely recognized meaning in this context. It does not relate to health or social feelings.

- **Option 2: under the weather**

This is a common English idiom that means feeling slightly ill or unwell. For example, one might say, "She's *under the weather* today, so she stayed home from work." This meaning directly corresponds to the phrase "feeling a bit unwell" in the given sentence.

If we consider substituting the reason for not wanting to hang out, this idiom fits perfectly. The sentence could imply: "I don't feel like hanging out today because I'm feeling *under the weather*."

- **Option 3: over the moon**

This idiom means being extremely happy or delighted. It conveys a strong positive emotion, which is the opposite of feeling unwell. Therefore, it is not suitable for this sentence.

- **Option 4: near the horizon**

This phrase typically refers to something that is expected to happen soon or is approaching its end. It does not relate to health or personal feelings of illness. Thus, it is inappropriate here.

- **Selecting the Most Appropriate Idiom**

Based on the analysis, the idiom "under the weather" is the most fitting choice. It accurately captures the meaning of feeling slightly unwell, which is the stated reason in the sentence for not wanting to "hang out". While the question asks to substitute "hanging out," the options provided relate to the state of health, suggesting the intent is to find an idiom describing the speaker's condition.

50. Answer: b

Explanation:

Identifying the Sentence Error

This question requires us to pinpoint the specific part of the given sentence that contains a grammatical error. The sentence is: "Neither I nor my friends are going too walk down that street." We need to carefully examine each segment of the sentence to find the mistake.

Analyzing the Sentence Structure and Options

The sentence uses the correlative conjunction pair "Neither...nor" to connect two subjects, "I" and "my friends". Let's evaluate the options provided:

- Option 1: "down that street." - This is a prepositional phrase indicating location or direction. It appears correct in context.
- Option 2: "friends are going too walk" - This segment includes the plural subject "friends", the verb phrase "are going", and potentially an incorrect use of "too".
- Option 3: "No error" - This option is valid only if the entire sentence is grammatically correct.

- Option 4: "Neither I nor my" – This part sets up the subjects using "Neither...nor". We must check subject-verb agreement rules.

Explanation of the Grammatical Error

The core issue in the sentence lies in the confusion between the words "to" and "too". Understanding their distinct roles is crucial:

- **"To"**: This is primarily a preposition (indicating direction, relationship, etc., like "going **to** the store") or part of the infinitive form of a verb (like "to walk", "to see").
- **"Too"**: This is an adverb, meaning either "also" or "excessively". For example, "He is coming, **too**" (also) or "It is **too** cold" (excessively).

In the given sentence, the phrase "going **too** walk" intends to express the action they are about to undertake, which requires the infinitive form of the verb "walk". Therefore, the correct word should be "to", not "too". The sentence should read: "Neither I nor my friends are going **to** walk down that street."

Subject-Verb Agreement Consideration

A common rule associated with "Neither...nor" is subject-verb agreement. The verb must agree with the subject nearest to it. In this sentence, "my friends" is the subject closer to the verb "are". Since "friends" is plural, the plural verb "are" is the correct choice. Thus, the subject-verb agreement is handled correctly in the sentence, and the error is not related to this aspect.

Identifying the Erroneous Part

Based on the analysis, the incorrect use of "too" instead of "to" constitutes the grammatical error. This specific mistake is contained within the phrase highlighted in Option 2.

The segment containing the error is **friends are going too walk**.

51. Answer: d

Explanation:

- The question asks for a word that describes something which cannot be corrected. We need to examine the meaning of each provided option to find the best fit.

Defining Terms Related to "Cannot Be Corrected"

Let's explore the meanings of the given options:

- **Unintelligible:** This word means something that cannot be understood or comprehended. For example, if someone's speech is muffled, it might be unintelligible. This relates to understanding, not correction.
- **Indelible:** This term describes something that cannot be removed, erased, or washed away. A permanent marker often leaves an indelible mark. While permanence might imply difficulty in correction, the core meaning is about being indelible, not specifically about correction of faults or behavior.
- **Illegible:** This means something that cannot be read, typically due to unclear handwriting or print. For instance, a doctor's prescription might sometimes be illegible. This relates to reading, not correction.
- **Incorrigible:** This word specifically means someone or something that cannot be reformed or corrected, especially concerning behavior or habits. It implies a persistent state that resists correction. This aligns directly with the idea of something that "cannot be corrected."

Identifying the Word for "Cannot Be Corrected"

Comparing the definitions, the word that precisely matches the description "That which cannot be corrected" is **Incorrigible**. While *indelible* means cannot be erased, *incorrigible* specifically refers to the inability to be corrected or reformed, often used for habits or behavior.

- The term *Unintelligible* relates to comprehension.

- The term *Indelible* relates to permanence or resistance to erasure.
- The term *Illegible* relates to readability.
- The term *Incorrigible* relates directly to the inability to be corrected or reformed.

Therefore, **Incorrigible** is the most accurate answer.

52. Answer: a

Explanation:

Exploring the Meaning of OMNIPRESENT

The question asks us to identify a word that shares a similar meaning with the term **OMNIPRESENT**. To answer this, we need to understand what **OMNIPRESENT** means and then compare it to the definitions of the given options.

Defining OMNIPRESENT

The word **OMNIPRESENT** means that something or someone is present in all places at the same time. It implies being everywhere simultaneously.

Analyzing the Word Options

Let's examine the meaning of each option provided:

- **ubiquitous**: This term means present, appearing, or found everywhere. It is often used to describe something that is very common and seems to be all around.
- **good**: This word refers to something positive, desirable, morally right, or of high quality. It does not relate to the concept of location or presence.
- **vanish**: This word means to disappear suddenly or unexpectedly. It signifies the absence of presence, making it the opposite of **OMNIPRESENT**.
- **knowing**: This relates to possessing knowledge, information, or awareness. It is a cognitive state and has no connection to being present everywhere.

Comparing Terms and Meanings

Here's a comparison to highlight the relationship between **OMNIPRESENT** and the options:

Term	Meaning	Relation to OMNIPRESENT
OMNIPRESENT	Present everywhere at once	--
ubiquitous	Found everywhere	Similar Meaning
good	Positive or desirable	No Similarity
vanish	To disappear	Opposite Meaning
knowing	Having knowledge	No Similarity

Identifying the Synonym

By comparing the meanings, it's clear that **ubiquitous** is the word most similar in meaning to **OMNIPRESENT**. Both terms describe the state of being present in all places.

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53. Answer: a

Explanation:

Identify Grammatical Error in Sentence

Let's carefully examine the given sentence and its segments to identify any grammatical errors. The sentence is broken down into three parts:

1. We talked about writing a will, but it
2. was one of those thing you never
3. get around to doing.

Analyzing Each Sentence Segment

We will look at each segment individually to check for issues with grammar, punctuation, or word usage.

Segment 1: We talked about writing a will, but it

This segment introduces the topic and sets up a contrast using "but it". The structure "talked about doing something" is correct. The pronoun "it" refers back to the action of "writing a will". This segment appears to be grammatically sound.

Segment 2: was one of those thing you never

Let's look closely at this segment. The phrase "one of those" is commonly used to refer to one item from a group. A fundamental grammatical rule is that when you use the construction "one of the" or "one of those", it must be followed by a plural noun.

- Correct examples: one of the **books**, one of those **cars**, one of my **friends**.
- Incorrect example: one of the **book**, one of those **car**, one of my **friend**.

In the given segment, we have "one of those **thing**". According to the rule, "thing" should be in its plural form, "things". So, the correct phrase should be "one of those **things**". This indicates that this segment contains a grammatical error.

Segment 3: get around to doing.

The phrase "get around to doing something" is a common idiom in English, meaning to finally find the time or opportunity to do something. This segment is a valid way to complete the sentence and does not contain a grammatical error.

Conclusion on the Grammatical Error

Based on the analysis, the grammatical error is found in the second segment: "was one of those thing you never". The singular noun "thing" should be plural "things" after the phrase "one of those".

Therefore, the segment containing the grammatical error is **was one of those thing** you never.

Revision Table: Key Grammatical Point

Incorrect Usage	Correct Usage	Explanation
One of those thing	One of those things	The structure "one of those" must be followed by a plural noun.

Additional Information on Grammar Rules

Understanding common grammatical patterns helps in identifying errors quickly. The "one of those" rule is a frequent point of confusion. Here are some related points to consider for sentence correction and identifying grammatical errors:

- **Subject-Verb Agreement:** Ensure the verb agrees with its subject in number (singular or plural). Example: "He walks" (singular), "They walk" (plural).
- **Pronoun Agreement:** Pronouns should agree in number and gender with the noun they refer to. Example: "Sarah finished her work."
- **Correct Verb Tense:** Use consistent and appropriate verb tenses throughout the sentence or passage.
- **Parallel Structure:** When listing items or ideas, they should be in the same grammatical form (e.g., all nouns, all verbs, all phrases).
- **Usage of Idioms:** Pay attention to the correct form and usage of common English idioms like "get around to".

Practicing with different sentence structures and common error types is essential for improving grammar skills and accurately identifying errors in sentences.

54. Answer: a

Explanation:

Biology: The Correct Substitute for Studying Life

This question requires us to identify the single word that best represents the phrase "Study of living organisms". We need to carefully consider the meaning of each provided option and see which one fits this description most accurately.

Understanding the Options Provided

Let's break down the definitions of each term given in the options:

- **Biology:** This is the scientific study of life and living organisms. It encompasses a vast range of topics, including the structure, function, growth, origin, evolution, and distribution of all living things.
- **Zoology:** This is a specialized branch within biology. It specifically focuses on the study of animals, including their behavior, structure, physiology, classification, and distribution.
- **Epistemology:** This term belongs to the field of philosophy. It is concerned with the theory of knowledge, investigating its nature, origin, and limits. It has no connection to the study of living organisms.
- **Ecology:** This is another branch of biology. It studies the interactions among organisms and their environment, focusing on how living things affect each other and their surroundings.

Identifying the Correct Substitute for "Study of Living Organisms"

The core requirement is a term for the general "Study of living organisms". Based on the definitions, **Biology** is the most fitting word. It is the overarching scientific discipline dedicated to understanding all aspects of life and living organisms.

Why Other Options Are Not the Best Fit

It's important to understand why the other options are not the correct substitute:

- **Zoology** is too specific; it only covers the study of animals, excluding plants, fungi, bacteria, etc.
- **Epistemology** is entirely unrelated, dealing with philosophical concepts of knowledge rather than biological subjects.
- **Ecology** focuses on the relationships and interactions between organisms and their environment, which is a specific area within the broader study of life, not the entire study itself.

Conclusion on Substituting the Sentence

Therefore, the word that accurately and comprehensively substitutes the sentence "Study of living organisms" is **Biology**.

55. Answer: a

Explanation:

Explaining the Idiom: Samson's Hair as an Achilles Heel

The question asks to identify the meaning of an idiom using the example of the biblical character Samson, whose weakness was his hair. This relates to the concept of an "Achilles heel". Let's break down the meaning and evaluate the options.

Understanding the Core Meaning

The phrase "Achilles' heel" originates from Greek mythology. Achilles was a great warrior, but his mother dipped him in the River Styx to make him invulnerable, holding him by his heel. This heel remained his only vulnerable spot.

The question uses Samson, another famously strong figure, whose strength was tied to his hair. When his hair was cut, he lost his strength and was captured. This example illustrates the idiom's meaning:

- **Samson's Strength:** He was immensely strong.

- **Samson's Weakness:** His hair was the specific point that, if compromised, led to his downfall.
- **The Idiom's Connection:** It signifies a point of vulnerability in an otherwise strong individual or entity.

Analyzing the Options

Let's look at each option in relation to the idiom and the example provided:

- **Option 1: A weakness of an otherwise very strong person**

This option directly matches the concept illustrated by Samson. Samson was incredibly strong, but his hair represented a specific vulnerability.

- **Option 2: Had suffered from a heel injury**

This option is too literal. The idiom is not about a physical injury to a heel but uses the heel metaphorically.

- **Option 3: Has a similarity with the mythological character Achilles**

While the idiom refers to Achilles, this option focuses on similarity rather than the meaning. The core idea is the *type* of vulnerability, not just being like Achilles.

- **Option 4: Source of strength**

This is the opposite of what the idiom means. An Achilles' heel is a weakness, not a source of strength.

Conclusion: Identifying the Correct Meaning

Based on the example of Samson and the mythological origin of the term "Achilles' heel," the idiom refers to a critical weakness that can undermine someone or something that is otherwise powerful or successful. Option 1 best captures this meaning.

Therefore, the best expression for the meaning of the idiom, as illustrated by Samson's hair, is **A weakness of an otherwise very strong person**.

56. Answer: c

Explanation:

Determining the Antonym of Suspicion

This question requires identifying the word that means the opposite of **Suspicion**. We need to carefully consider the meaning of the target word and evaluate each option provided.

Defining Suspicion

Suspicion generally means a feeling or belief that someone might be guilty of doing something wrong, or that something is likely to happen, often without definite proof. It involves doubt and mistrust.

Evaluating the Options Against Suspicion

Let's look at the meanings of the provided options:

- **Niggle:** This term refers to a minor complaint, worry, or criticism. It doesn't represent the opposite of suspicion.
- **Tremor:** This word describes a slight, involuntary shaking or quivering of the body, often due to nervousness or illness. It is unrelated to the concept of suspicion.
- **Conviction:** This word has two primary meanings: 1. A strong belief or certainty about something. 2. A formal declaration by a court that someone is guilty of a crime. In the context of finding an opposite for **Suspicion** (which implies doubt), the first meaning—a strong, firm belief or certainty—is the most appropriate antonym.
- **Incertitude:** This means the state of being uncertain or doubtful. It is very similar in meaning to suspicion, making it a synonym rather than an antonym.

Selecting the Correct Antonym

Based on the analysis, **Conviction**, meaning a firm belief or certainty, is the direct opposite of **Suspicion**, which signifies doubt or mistrust. If you have a **suspicion** about something, you lack certainty. Conversely, holding a **conviction** means you possess that certainty or strong belief.

57. Answer: b

Explanation:

Understanding the Core Word: 'Curious'

The main task is to find the word that means the opposite of '**curious**'. First, let's understand what '**curious**' means. Being **curious** describes someone who has a strong desire to know or learn something. It means you are interested in finding out more about things, asking questions, and exploring new information.

Identifying the Antonym for 'Curious'

To find the opposite (antonym), we need a word that signifies a lack of interest or desire to know.

Let's examine each option:

- **Passionate**: This word means having or showing very strong feelings about something. While a **curious** person might become passionate about a topic they learn about, 'passionate' itself isn't the opposite of wanting to learn. It describes intensity of feeling, not the desire for knowledge.
- **Uninterested**: This word means not interested or showing no curiosity. If someone is **uninterested**, they do not have the desire to know or learn something. This is a direct opposite to being **curious**.
- **Complex**: This describes something that is difficult to understand or has many parts. It refers to the nature of a subject, not a person's desire to learn about it. It's unrelated to the meaning of '**curious**'.

- **Doubtful:** This means feeling uncertain or unsure about something. While a **curious** person might investigate things they are doubtful about, 'doubtful' doesn't mean the opposite of having a desire to learn; it describes a state of uncertainty.
- (The fifth option is empty and requires no analysis.)

Conclusion: The Opposite Meaning

Comparing the options, '**Uninterested**' clearly means the absence of curiosity. Someone who is **uninterested** lacks the desire to know or learn, which is the exact opposite of someone who is **curious**.

Therefore, the word opposite in meaning to '**curious**' is '**Uninterested**'.

58. Answer: c

Explanation:

Understanding the Idiom: "A Blessing in Disguise"

This section explains the meaning of the idiom "A blessing in disguise" and helps identify the correct option that matches its meaning.

Meaning of "A Blessing in Disguise"

The idiom "A blessing in disguise" refers to something that seems bad or unlucky at first but results in something good happening later. It essentially means a bad situation that ultimately brings about a good outcome, often unexpectedly.

Key elements to understand:

- **Initial Negative Appearance:** The situation or event appears negative, unfortunate, or problematic initially.
- **Unexpected Positive Outcome:** Despite the initial appearance, the situation leads to a beneficial or fortunate result.

- **Hidden Benefit:** The good part of the situation is hidden or disguised by the initial bad appearance.

Analysis of Options

Let's look at each provided option in relation to the idiom "A blessing in disguise":

- **Option 1: To have a dispute with someone**
This option describes a conflict or argument. While disputes can sometimes lead to resolutions, the phrase itself doesn't inherently mean a disguised good fortune. It's simply about disagreement.
- **Option 2: Hear a good news after a long time**
This describes receiving positive news after a period of waiting or silence. However, it doesn't necessarily imply that the preceding period or the event leading to the good news was initially perceived as negative or unfortunate.
- **Option 3: A misfortune that unexpectedly turns into good fortune**
This option perfectly matches the definition of "a blessing in disguise". It explicitly mentions the initial negative aspect ("misfortune") and the subsequent positive turn ("unexpectedly turns into good fortune"), capturing the core meaning of the idiom.
- **Option 4: To go from being very poor to being very wealthy**
This describes a transition from poverty to wealth. While it's a very positive outcome, the idiom "a blessing in disguise" isn't specifically limited to financial changes and emphasizes the *disguised* nature of the good fortune arising from a seemingly bad start.

Conclusion

Comparing the options with the meaning of the idiom, "**A misfortune that unexpectedly turns into good fortune**" is the most accurate and direct explanation. It encapsulates the idea that a seemingly bad situation can hide a positive and beneficial outcome.

59. Answer: a

Explanation:

Identifying the Incorrectly Spelt Word

This question requires us to identify which word among the options is not spelled correctly. Paying close attention to spelling is crucial for clear communication in both writing and speaking.

Analyzing Spelling Options

We need to carefully examine each word provided and compare it against its standard English spelling. Let's look at each option:

Word Given	Correct Spelling	Status
Positon	Position	Incorrect
Source	Source	Correct
Serious	Serious	Correct
Continue	Continue	Correct

Positon: The Misspelt Word

The word **Positon** is misspelled. The correct spelling is '**Position**', which includes an 'i' after the 's'. The given word 'Positon' is missing this essential letter, making it the incorrectly spelt word.

Source, Serious, and Continue

The other words provided are spelled correctly according to standard English dictionaries:

- **Source:** This word refers to a place, person, or thing from which something comes or can be found. Its spelling is correct.

- **Serious:** This word describes someone who is solemn or thoughtful, or something important and significant. Its spelling is correct.
- **Continue:** This word means to keep doing something, or to not stop. Its spelling is correct.

Conclusion on Incorrect Spelling

Based on the analysis, the word '**Positon**' is the one with the incorrect spelling among the given choices.

60. Answer: c

Explanation:

Analyzing the Bat : Cricket Relationship

The original pair is "Bat : Cricket". We need to find a similar relationship between the given options.

In the pair "Bat : Cricket", the relationship is that a **Bat** is the main piece of equipment used by a player to play the sport of **Cricket**.

Examining the Options

Let's analyze each option to see if it shares the same **Equipment : Sport** relationship:

- **Option 1: Goal : Hockey**
 - A **Goal** is the objective or scoring method in **Hockey**, not the primary equipment used to hit the ball. Players use a stick.
 - Therefore, this option does not match the **Equipment : Sport** relationship.
- **Option 2: Cock : Badminton**
 - A **Cock** (shuttlecock) is the object that is hit back and forth in **Badminton**. It is the projectile, not the equipment used to hit it.
 - The equipment used to hit the shuttlecock is a racket.
 - Therefore, this option does not match the **Equipment : Sport** relationship.

- **Option 3: Racket : Badminton**
 - A **Racket** is the main piece of **equipment** used by a player to strike the shuttlecock in the sport of **Badminton**.
 - This perfectly matches the **Equipment : Sport** relationship identified in the original pair (Bat : Cricket).
- **Option 4: Penalty : Football**
 - A **Penalty** is a consequence for breaking rules in **Football**. It is not a piece of equipment.
 - Therefore, this option does not match the **Equipment : Sport** relationship.

Conclusion on the Analogy

The relationship in "Bat : Cricket" is that the first item is the primary **equipment** used to play the second item, which is the **sport**.

Comparing the options:

- "Racket : Badminton" follows the same pattern, where a **Racket** is the key **equipment** for playing **Badminton**.

Therefore, the pair "Racket : Badminton" expresses a relationship similar to that expressed in the original pair "Bat : Cricket".

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61. Answer: b

Explanation:

The correct answer is (C, A, D, B).

★ Key Points

- The sentence should start with the subject, which is "**he**" in this case.
- So, the first part is **C**.
- The next part should be the **verb + preposition**, which is "**complains about all his**."

- So, the next part is **A**.
- Then, we need to add the object, which is "**about all his neighbours and the noise they make.**"
- So, the next pair must be **DB**.
- The correct answer is option 2.

Correct sentence: *He constantly complains about all his neighbours and the noise they make.*

★ Additional Information

- Option 1 (B, A, D, C) is incorrect because it starts with the object instead of the subject.
- Option 3 (B, D, A, C) is incorrect because it starts with the object and also places the subject after the object.
- Option 4 (D, B, C, A) is incorrect because it starts with the object and places the subject after the verb.

62. Answer: b

Explanation:

Farmer : Plow Relationship Analysis

The objective is to identify which option shares the same relationship as the given pair: **Farmer : Plow**. This involves understanding the specific connection between the farmer and the plow.

Core Person-Tool Connection

In the provided example, **Farmer : Plow**, the relationship is one where the first term (Farmer) represents a person or a profession, and the second term (Plow) represents the primary tool used by that person to perform their work. A farmer uses a plow for agricultural tasks like tilling the soil.

Option-by-Option Analysis

Let's examine each of the choices to see which one best reflects this **person : primary tool** relationship:

Painter : Wheel Assessment

A painter is an artist who creates visual art, typically using brushes, paints, and canvases. A wheel is not a standard or primary tool for a painter. Therefore, this option does not fit the established relationship.

Writer : Pen Comparison

A **Writer** is a person who engages in writing, such as composing books or articles. A **Pen** is a common and essential tool used by writers for the act of writing. This pair accurately represents the **person : primary tool** relationship, mirroring the structure of **Farmer : Plow**.

Soldier : Brush Evaluation

A soldier is a member of an army. Their primary tools are typically weapons, communication devices, and military equipment necessary for their duties. A brush is generally associated with painting or cleaning and is not a core tool for a soldier. This option is not analogous.

Potter : Gun Suitability

A potter is a craftsperson who makes pots and other ceramic wares. Key tools for a potter include a potter's wheel, sculpting tools, and kilns. A gun is a weapon and has no connection to the process of pottery making. This option does not fit the required relationship.

Final Analogy Selection

After evaluating all the options, the pair **Writer : Pen** most closely matches the relationship found in **Farmer : Plow**. Both pairs consist of a professional individual

and the essential tool they utilize for their work.

63. Answer: b

Explanation:

Understanding the Sentence: Indians and Sacred Plants

The question requires filling in a blank in the sentence: "Indians _____ plants like Peepal and Tulsi sacred and worship them." This sentence describes how Indians perceive certain plants, such as the Peepal and Tulsi, and the resulting action of worshipping them. We need to choose the verb that best describes this perception of sacredness.

Analyzing Verb Options for Regard

The sentence suggests that Indians hold Peepal and Tulsi plants in a special, sacred regard, leading to worship. Let's examine how each option fits this context:

- **think:** While Indians might *think* these plants are sacred, the verb 'think' is very general. It doesn't specifically capture the nuance of holding something in a particular, revered status that leads to worship.
- **consider:** This verb means to regard or think of something or someone in a specific way. "Indians *consider* plants like Peepal and Tulsi sacred" accurately means they view these plants as holy or divine, which directly explains why they would worship them. This option strongly fits the context.
- **judge:** The verb 'judge' typically implies forming an opinion based on evidence or criteria, often involving evaluation or criticism. It doesn't align well with the concept of treating plants as sacred and worshipping them.
- **reflect:** 'Reflect' means to think deeply or to mirror something. In this sentence, Indians are not 'reflecting' the plants as sacred; they are actively regarding them as such. This verb doesn't fit the intended meaning.

Step-by-Step Solution

1. **Contextual Fit:** The sentence links regarding plants as 'sacred' with the act of 'worship'. The chosen verb must bridge these two ideas effectively.
2. **Option 1 Analysis (think):** 'Think' is too broad and doesn't convey the specific sense of reverence implied.
3. **Option 2 Analysis (consider):** 'Consider' means to regard or deem. "Indians consider these plants sacred" perfectly sets up the reason for worship. This is the most suitable option.
4. **Option 3 Analysis (judge):** 'Judge' implies evaluation, which is not the primary meaning here. Sacredness is a matter of belief and reverence, not judgment in the typical sense.
5. **Option 4 Analysis (reflect):** 'Reflect' implies contemplation or mirroring, which does not fit the active act of deeming something sacred.
6. **Final Verification:** The sentence "Indians consider plants like Peepal and Tulsi sacred and worship them" makes logical and grammatical sense, clearly stating the belief that leads to the action.

Conclusion

The verb **consider** is the most appropriate choice because it accurately describes the act of regarding or holding Peepal and Tulsi plants as sacred, which is the reason Indians worship them. It fits the context better than 'think', 'judge', or 'reflect'.

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64. Answer: b

Explanation:

Rearranging Jumbled Sentence Parts to Form a Meaningful Sentence

This question requires us to take several jumbled parts of a sentence and arrange them into a grammatically correct and logically meaningful sequence. We need to identify the correct order for the given parts: A. That the only true individual B. Is the

holy man C. It has frequently been claimed D. Which the traditional society of India tolerates

Identifying the Sentence Structure

To find the correct order, let's analyze the function of each part:

- **C. "It has frequently been claimed"**: This phrase typically serves as an introductory clause, setting up a statement that follows. It's a common way to start a sentence reporting a widely held belief.
- **A. "That the only true individual"**: The word "That" usually introduces a subordinate clause that explains or elaborates on the main clause. This part likely begins the core statement being claimed.
- **D. "Which the traditional society of India tolerates"**: This phrase starts with "Which", indicating it's a relative clause. Relative clauses provide additional descriptive information about a noun. Here, it likely specifies or describes the "individual".
- **B. "Is the holy man"**: This part contains the verb "Is" and acts as the predicate, completing the main idea of the subordinate clause introduced by "That".

Step-by-Step Sentence Construction

Let's assemble the parts into a logical sequence:

1. **Begin with the Introductory Clause**: Part C, "It has frequently been claimed", is the most logical starting point.
2. **Introduce the Subject of the Claim**: The claim typically follows "claimed that...". Part A, "That the only true individual", starts this subordinate clause, introducing the subject.
3. **Specify the Subject**: Part D, "Which the traditional society of India tolerates", acts as a relative clause modifying "individual". It clarifies *which* individual is being referred to – the one that the society tolerates. Placing it after "individual" creates the phrase: "That the only true individual Which the traditional society of India tolerates".
4. **Provide the Predicate**: Part B, "Is the holy man", acts as the predicate, completing the subordinate clause by stating what the specified individual is.

Following these steps, the order C, A, D, B emerges as the most coherent sequence.

The Complete Meaningful Sentence

Putting the parts together in the order C, A, D, B results in the following sentence:

"It has frequently been claimed That the only true individual Which the traditional society of India tolerates Is the holy man."

This sentence correctly conveys the idea that society's tolerance is a characteristic defining the "true individual" who is identified as the "holy man".

Final Confirmation of Order

The logical flow and grammatical structure confirm that the correct order for the jumbled parts is C, A, D, B.

65. Answer: b

Explanation:

Moving In: Understanding the Phrasal Verb

The sentence "My sister has decided to _____ with me" needs a phrasal verb that describes the action of starting to live together in the same place.

Analyzing Phrasal Verb Options

Let's examine the meaning of each option to find the best fit:

- **move to:** This phrasal verb indicates relocating to a different place or destination. For instance, someone might *move to* a new city. It doesn't inherently mean they will live *with* someone else.
- **move in:** This phrasal verb means to begin living in a particular home or apartment. When used with "with me," it specifically signifies that the sister is

coming to reside in the same home as the speaker. This implies sharing the living space.

- **move from:** This phrasal verb signifies departure from a place. For example, *moving from* one house to another. It indicates leaving, not joining.
- **move at:** This phrasal verb usually relates to the speed or manner of movement (e.g., "the clock moves at a slow pace") or a location point (e.g., "move at the intersection"). It is not typically used to describe sharing a home.

Determining the Correct Sentence Completion

Considering the context of the sentence, the sister is making a decision related to living arrangements *with* the speaker. The phrase "**move in** with me" accurately conveys that the sister is going to start living in the same residence as the speaker.

Therefore, the completed sentence reads: "My sister has decided to **move in** with me." This is the most logical and grammatically correct choice among the options provided.

66. Answer: b

Explanation:

Understanding Sentence Completion: Using Conjunctions

This question requires us to select the most appropriate word to complete a sentence. The sentence sets up a relationship between two clauses: "_____ you are my favourite brother" and "I'll tell mother about it." We need to find a word that logically connects these two ideas.

Analysing the Sentence Structure

The sentence structure suggests a contrast or concession. The first part states a positive relationship ("favourite brother"), while the second part describes an action

("I'll tell mother about it"). We need a conjunction that links these clauses, showing how one relates to the other, specifically highlighting a contrast or condition.

Evaluating the Options for Sentence Completion

Let's examine each option to see how it fits the sentence:

- **Unless:** This word means "except if". It introduces a condition that prevents the main clause from happening. Using "Unless" here ("Unless you are my favourite brother, I'll tell mother about it") would imply that the speaker **only** tells their mother if the person is **not** their favourite brother, which doesn't seem logical in most contexts.
- **Even though:** This phrase introduces a clause that states a fact, but the main clause happens regardless of that fact. It signifies a contrast or concession. The sentence "**Even though** you are my favourite brother, I'll tell mother about it" makes sense. It implies that despite the speaker's positive feelings (favourite brother), they will still perform the action (tell mother). This highlights a contrast between the brother's status and the speaker's action.
- **Whenever:** This word relates to time, indicating that something happens on every occasion. Using "Whenever" ("Whenever you are my favourite brother, I'll tell mother about it") suggests that the act of telling mother happens repeatedly, linked to the specific state of being the favourite brother, which is unlikely and doesn't fit the typical meaning of such sentences.
- **However:** This is a conjunctive adverb used to introduce a contrasting statement. It typically connects two separate sentences or independent clauses. While it shows contrast, it's generally not used at the beginning of a subordinate clause like this to connect directly to the main clause without restructuring the sentence (e.g., "You are my favourite brother. **However**, I'll tell mother about it.").

Determining the Best Fit

Comparing the options, "Even though" is the most suitable conjunction. It correctly establishes a concessive relationship, indicating that the action of telling mother occurs in spite of, or alongside, the fact that the person is the favourite brother. This

maintains the grammatical structure and provides a logical meaning, highlighting a contrast between the brother's favoured status and the impending action.

67. Answer: d

Explanation:

Arranging Jumbled Sentence Parts

The objective here is to correctly **arrange** the given **parts** of a sentence to form a grammatically correct and meaningful statement. This involves understanding the relationships between the different phrases and identifying the logical sequence.

Understanding the Sentence Components

Let's break down each of the provided sentence parts:

- **A.** The fact that all members of the family were exposed – This fragment introduces a clause starting with "The fact that...", suggesting it will be part of a larger subject or statement. The word "exposed" typically requires a phrase indicating what the exposure was to.
- **B.** The waste of human resources and – This part begins with a noun phrase and includes the conjunction "and", indicating it's likely the start of a compound subject or a phrase that connects to another element.
- **C.** To each other's capricious minds had a debasing effect – This segment contains a prepositional phrase ("To each other's capricious minds") that can logically follow "exposed" from part A. Crucially, it also includes the main verb phrase "had a debasing effect", which indicates the action or consequence.
- **D.** On the vitality of society as a whole – This is a prepositional phrase that specifies the target or area affected by the action described in part C. It naturally concludes the sentence by elaborating on the effect.

Identifying the Correct Sentence Order

To construct a coherent sentence, we need to establish a logical flow:

- Part **B** is the most suitable starting point as it introduces a key concept ("The waste of human resources") and uses "and" to link it to another subject component.
- Part **A** naturally follows **B**, forming the compound subject: "The waste of human resources and the fact that all members of the family were exposed...". The phrase "exposed" needs completion.
- Part **C** fits perfectly after **A** because "To each other's capricious minds" completes the idea of exposure ("exposed to..."), and the phrase "had a debasing effect" provides the main verb and predicate for the entire subject.
- Part **D** logically concludes the sentence by indicating where the "debasing effect" occurred ("On the vitality of society as a whole").

Therefore, the correct order for these jumbled parts is **B, A, C, D**.

Step-by-Step Sentence Construction

Let's assemble the sentence following the identified order:

1. Begin with part **B**: "The waste of human resources and"
2. Add part **A** to extend the subject: "The waste of human resources and the fact that all members of the family were exposed"
3. Append part **C** to complete the clause and add the predicate: "The waste of human resources and the fact that all members of the family were exposed to each other's capricious minds had a debasing effect"
4. Finish with part **D** to specify the impact: "The waste of human resources and the fact that all members of the family were exposed to each other's capricious minds had a debasing effect on the vitality of society as a whole."

The Meaningful Sentence Structure

Following the sequence **B, A, C, D** results in the complete and meaningful sentence:

"The waste of human resources and the fact that all members of the family were exposed to each other's capricious minds had a debasing effect on the vitality of society as a whole."

This arrangement effectively conveys a cause-and-effect relationship, making the sentence coherent and grammatically sound.

68. Answer: b

Explanation:

Identifying Grammatical Errors in Sentence Parts

This question requires us to locate a grammatical error within a given sentence. The sentence describes a scenario involving a suitcase and travel on a plane. We need to examine the provided options, which are segments of the original sentence, to find the one containing the mistake.

Analyzing Sentence Components for Errors

Let's break down the sentence and evaluate each option:

Original Sentence: The suitcase I bought was quite too large to fit in the overhead compartment on the plane, causing a bit of inconvenience during the journey as I had to check it in at the last minute.

Option 1 Evaluation: 'large to fit in the overhead compartment'

This phrase uses the adjective '**large**' correctly, followed by the infinitive phrase '**to fit**', which explains the consequence of its size. The prepositional phrase '**in the overhead compartment**' specifies the location. This part is grammatically correct.

Option 2 Evaluation: 'The suitcase I bought was quite too'

This segment contains a grammatical error. The problem lies in the combination of the adverbs '**quite**' and '**too**'. Both adverbs are used to modify adjectives (in this case, '**large**', which follows this segment). However, using them together like '**quite too**' is incorrect and redundant in standard English.

- **'Quite'** means 'very' or 'fairly'. For example, "The suitcase was **quite** large" means it was very large.
- **'Too'** means 'excessively' or 'more than enough', often implying a negative result. For example, "The suitcase was **too** large" means it was excessively large, causing a problem.

Using both **'quite'** and **'too'** together is redundant. One should choose either 'quite large' or 'too large' depending on the intended meaning. The structure "quite too large" is not standard usage.

Option 3 Evaluation: 'on the plane, causing a bit of inconvenience during'

This part includes a prepositional phrase '**on the plane**' and a participial phrase '**causing a bit of inconvenience during**'. This correctly describes the consequence of the suitcase's size and the resulting inconvenience. This segment is grammatically correct.

Option 4 Evaluation: 'the journey as I had to check it in at the last minute'

This final segment describes the reason for the inconvenience using a subordinate clause starting with '**as**'. The phrase '**check it in at the last minute**' is idiomatic and correct. This part of the sentence is grammatically sound.

Option 5 Evaluation: (Empty Option)

This is an empty option and contains no text or grammatical structure, hence no error can be identified here.

Understanding the Grammatical Fault

The core error identified is the misuse of the adverbs **'quite'** and **'too'** in Option 2. The sentence requires a single adverb to modify 'large' appropriately.

Possible correct alternatives for the beginning of the sentence include:

- "The suitcase I bought was **quite large**..."
- "The suitcase I bought was **too large**..."

Therefore, the segment containing the error is the one combining 'quite too'.

69. Answer: a

Explanation:

The correct answer is- '**observed**.'

★ Key Points

- Let us see the meanings of the given options:
 - **Observed:** to notice or see. (नोटिस करना या देखना।)
 - Permitted: officially allow (someone) to do something. (आधिकारिक तौर पर (किसी को) कुछ करने की अनुमति देना।)
 - Aggravated: to make something worse or more serious. ((स्थिति को) बिगाड़ देना; बदतर करना या होना, अधिक गंभीर बनाना)
 - Allayed: to make something less strong. ((पीड़ा, कष्ट, भय आदि की) तीव्रता या प्रबलता कम करना।)
- Here, we are talking about the noticing of the Anti-Terrorism Day.
- The option "**observed**" is correct in this context.
- **Correct paragraph:**
*Every year 21st May is **observed** as Anti-Terrorism Day. The objective behind _____ (2) _____ of this day is to wean away the youth from terrorism and the cult of violence by _____ (3) _____ the sufferings of common people and showing as to how it is prejudicial to the national interest.*

★ Additional Information

- Let us see the synonym of the given words:
 - Appease: Placate
 - Allay: Diminish

70. Answer: d

Explanation:

Anti-Terrorism Day Objective Analysis

This question involves filling in blanks within a paragraph about Anti-Terrorism Day. The task is to select the most appropriate word for the second blank (____ 2 ____) from the given options. The paragraph explains the goal behind the establishment and commemoration of this day.

Context Analysis for Blank (2)

The relevant sentence structure is: "The objective behind _____ (2) _____ of this day is to wean away the youth from terrorism and the cult of violence...". The phrase "_____ (2) _____ of this day" refers to the action or practice associated with marking or celebrating Anti-Terrorism Day.

Option Evaluation for Blank (2)

Let's examine the suitability of each option for the second blank:

- **bright:** This word usually describes light or a positive outlook. It does not fit the context of commemorating an event.
- **opaque:** This word means not transparent or difficult to understand. It is irrelevant in the context of observing a day.
- **lush:** This word typically describes rich, abundant growth, like plants. It doesn't fit the meaning required here.
- **observance:** This term refers to the act of celebrating, honoring, or commemorating a specific day, event, or tradition. This meaning aligns perfectly with the context of establishing objectives for Anti-Terrorism Day.

Selecting Correct Word for Blank (2)

The word 'observance' accurately describes the act of commemorating or celebrating Anti-Terrorism Day. The sentence aims to explain the purpose behind this commemoration. Therefore, 'observance' is the most suitable choice.

The completed sentence fragment reads: "The objective behind **observance** of this day..." This correctly conveys the meaning that the purpose is related to the act of observing the day itself.

71. Answer: a

Explanation:

Understanding Anti-Terrorism Day Context

The question asks us to fill in the blanks in a short paragraph about Anti-Terrorism Day, observed annually on May 21st. The paragraph explains the purpose of this day, which is to steer young people away from terrorism and violence. It suggests doing this by influencing their understanding of the negative impacts of terrorism.

Analyzing Blank 3: Impact of Terrorism

We need to choose the most appropriate word for the blank indicated by ____ (3) _____. The sentence reads: "The objective behind ... this day is to wean away the youth from terrorism and the cult of violence by _____ (3) _____ the sufferings of common people and showing as to how it is prejudicial to the national interest."

Let's examine the options provided specifically for blank 3:

- **highlighting**: This means drawing attention to or emphasizing something. In the context of combating terrorism, showing or emphasizing the suffering caused to ordinary people is a way to demonstrate the harmful effects of violence and discourage involvement in it.
- **embracing**: This means accepting or welcoming something willingly. It does not fit the context, as embracing the suffering of people is not a strategy to deter terrorism.

- **rejecting**: This means refusing to accept or consider something. While rejecting terrorism itself is the goal, rejecting the *sufferings* caused by it doesn't align with the purpose of educating people about its consequences.
- **renouncing**: This means formally giving up or abandoning something. Similar to rejecting, renouncing the sufferings doesn't make sense in this context.

Selecting the Best Fit for Blank 3

The core idea is to educate youth about the detrimental effects of terrorism. To achieve this, it's logical to **highlight** the pain and difficulties ("sufferings") that common people endure because of terrorism. By making these sufferings visible and understood, the aim is to make young people realize how destructive and contrary to national well-being terrorism is.

Therefore, the word 'highlighting' best completes the sentence, aligning with the objective of dissuading youth from violence by showing the negative consequences.

The completed sentence segment would be: "...by **highlighting** the sufferings of common people..."

72. Answer: d

Explanation:

Grandfather's Appearance According to the Narrator

This solution explains the narrator's perception of their grandfather's appearance based on the provided passage.

Analyzing the Passage Description

The passage describes the narrator's grandmother and then focuses on the grandfather's portrait. Key details about the grandfather are mentioned:

- He wore a big turban and loose-fitting clothes.

- He had a long, white beard that covered much of his chest.
- He looked very old, estimated to be "at least a hundred years old."
- The narrator found it hard to imagine him having a wife or children.
- Instead, the narrator thought he looked like someone who would have "lots and lots of grandchildren."

Evaluating the Options

Let's examine each option in relation to the passage:

- **Option 1: He looks like a young and handsome man.** The passage clearly states he looked "at least a hundred years old," which contradicts the idea of him being young and handsome.
- **Option 2: He looks like a man who was sick.** There is no mention of the grandfather appearing sick in the passage.
- **Option 3: He looks like a man who was once a famous leader.** The passage does not provide any information suggesting he was a famous leader.
- **Option 4: He looks like a man who would have lots of grandchildren.** This aligns perfectly with the passage, which states, "He looked as if he could only have lots and lots of grandchildren."

Conclusion on Grandfather's Likeness

Based on the direct description in the passage, the narrator specifically thought the grandfather looked like someone who would have many grandchildren, due to his extremely old appearance.

73. Answer: b

Explanation:

The correct answer is 'Disbelief'.

★ Key Points

- Let's refer to the lines –
 - *"She often told us of the games she used to play as a child."*
 - *"That seemed quite absurd and undignified on her part and we treated it like the fables of the Prophets she used to tell us."*
- Based on the above given points, it is clear that the narrator's attitude towards their grandmother's stories of her youth was of disbelief.

Therefore the correct answer is **Option 2**.

74. Answer: a

Explanation:

Understanding the Antonym Task

The question requires identifying the most appropriate antonym for the word "Revolting" based on its usage in the provided passage about the narrator's grandmother. An antonym is a word that means the opposite of another word.

Passage Context for 'Revolting'

The passage mentions: "As my grandmother being young and pretty, the thought was almost **revolting**." Here, the narrator finds the idea of their grandmother, whom they only knew as old, having been young and pretty to be quite shocking or disgusting. The word **revolting** is used to describe a strong feeling of disgust or revulsion.

Meaning of 'Revolting'

The word **revolting** means causing intense disgust or abhorrence; extremely unpleasant or repulsive.

Analyzing the Options for 'Revolting'

Let's examine the given options to find the opposite meaning:

- **Attractive:** This means pleasing or appealing to the senses or mind. It signifies something that draws people towards it.
- **Unpleasant:** This means not pleasant or enjoyable; disagreeable. This is a synonym, not an antonym, of revolting.
- **Rebel:** This word refers to someone who opposes authority or fights against a system. It's a noun or verb, not an adjective describing a feeling, and doesn't relate to the meaning of revolting in this context.
- **Peace:** This means a state of tranquility or quiet, or freedom from civil disturbance. It is unrelated to the meaning of revolting.

Identifying the Correct Antonym

Comparing the meanings, the word that expresses the opposite of causing disgust or repulsion is "Attractive". If something is **revolting**, it repels you; if something is **attractive**, it appeals to you.

Therefore, the most appropriate antonym for **revolting** in this context is **Attractive**.

75. Answer: d

Explanation:

Work and Time: Calculating Combined Effort of A, B, and C

This question is about a classic "Work and Time" problem. We need to figure out how long it takes for three people (A, B, and C) to finish a job together, given the time it takes for pairs of them to complete it. We'll find their individual rates and then combine them.

Understanding Work Rates

The key idea is 'work rate'. If someone finishes a job in D days, they complete $\frac{1}{D}$ of the job in just one day. This amount completed in one day is their daily work rate.

Given Information

- A and B working together finish the job in 25 days.
- B and C working together finish the job in 20 days.
- C and A working together finish the job in 10 days.

Translating Information into Work Rates

Let's express the completion times as daily work rates:

- A and B's combined daily work rate: $R_{A+B} = \frac{1}{25}$
- B and C's combined daily work rate: $R_{B+C} = \frac{1}{20}$
- C and A's combined daily work rate: $R_{C+A} = \frac{1}{10}$

Setting Up the Equations

Let R_A , R_B , and R_C be the daily work rates of A, B, and C individually. We can set up the following equations based on the information:

1. Equation 1: $R_A + R_B = \frac{1}{25}$
2. Equation 2: $R_B + R_C = \frac{1}{20}$
3. Equation 3: $R_C + R_A = \frac{1}{10}$

Finding the Combined Rate of A, B, and C

To find out how much work A, B, and C do together in one day ($R_A + R_B + R_C$), we can add all three equations together:

$$(R_A + R_B) + (R_B + R_C) + (R_C + R_A) = \frac{1}{25} + \frac{1}{20} + \frac{1}{10}$$

Combine the terms on the left side:

$$2R_A + 2R_B + 2R_C = \frac{1}{25} + \frac{1}{20} + \frac{1}{10}$$

Factor out the 2:

$$2(R_A + R_B + R_C) = \frac{1}{25} + \frac{1}{20} + \frac{1}{10}$$

Calculating the Sum of Pair Rates

Now, let's calculate the sum of the fractions on the right side. We need a common denominator. The least common multiple (LCM) of 25, 20, and 10 is 100.

Convert each fraction to have a denominator of 100:

- $\frac{1}{25} = \frac{1 \times 4}{25 \times 4} = \frac{4}{100}$
- $\frac{1}{20} = \frac{1 \times 5}{20 \times 5} = \frac{5}{100}$
- $\frac{1}{10} = \frac{1 \times 10}{10 \times 10} = \frac{10}{100}$

Substitute these back into the equation:

$$2(R_A + R_B + R_C) = \frac{4}{100} + \frac{5}{100} + \frac{10}{100}$$

$$2(R_A + R_B + R_C) = \frac{4+5+10}{100}$$

$$2(R_A + R_B + R_C) = \frac{19}{100}$$

Finding the Combined Daily Rate

To find the combined daily work rate of A, B, and C ($R_A + R_B + R_C$), we divide the sum by 2:

$$R_A + R_B + R_C = \frac{19}{100} \div 2$$

$$R_A + R_B + R_C = \frac{19}{100} \times \frac{1}{2}$$

$$R_A + R_B + R_C = \frac{19}{200}$$

This result means that A, B, and C together complete $\frac{19}{200}$ of the total work in one day.

Calculating the Total Time Taken Together

The total time needed to complete the work is the inverse (reciprocal) of their combined daily work rate.

$$\text{Total Time} = \frac{1}{\text{Combined Daily Work Rate}}$$

$$\text{Total Time} = \frac{1}{R_A + R_B + R_C}$$

$$\text{Total Time} = \frac{1}{19/200}$$

$$\text{Total Time} = \frac{200}{19} \text{ days}$$

Conclusion

So, A, B, and C working together will take $\frac{200}{19}$ days to complete the piece of work.

76. Answer: b

Explanation:

Understanding Number Series Patterns

Let's analyze the given number series to find the missing term: 131, 132, 141, 166, 215, ?, 417.

Solving number series questions involves identifying the underlying rule or pattern that connects the terms.

Finding the Pattern in the Series

To find the missing number in this number series, we examine the differences between consecutive terms.

- Difference between the 2nd term (132) and the 1st term (131): $132 - 131 = 1$
- Difference between the 3rd term (141) and the 2nd term (132): $141 - 132 = 9$
- Difference between the 4th term (166) and the 3rd term (141): $166 - 141 = 25$
- Difference between the 5th term (215) and the 4th term (166): $215 - 166 = 49$

Identifying the Difference Pattern

The sequence of differences we calculated is 1, 9, 25, 49. Let's look closely at these numbers.

We can observe that these differences are perfect squares:

- $1 = 1 \times 1 = 1^2$
- $9 = 3 \times 3 = 3^2$
- $25 = 5 \times 5 = 5^2$
- $49 = 7 \times 7 = 7^2$

The bases of these squares are 1, 3, 5, 7. These are consecutive odd numbers.

This suggests that the pattern in the number series is that the difference between consecutive terms is the square of consecutive odd numbers, starting with 1.

Calculating the Missing Number

Following the pattern of consecutive odd numbers (1, 3, 5, 7), the next odd number in the sequence is 9.

Therefore, the next difference in the number series should be 9^2 .

$$9^2 = 9 \times 9 = 81.$$

The missing number is found by adding this difference (81) to the last known term before the question mark, which is 215.

$$\text{Missing number} = 215 + 81 = 296.$$

Verifying the Number Series Pattern

To confirm that our identified pattern is correct, let's check the next step in the series. The odd number following 9 is 11.

According to the pattern, the difference between the term after the missing number (417) and the missing number (296) should be 11^2 .

$$11^2 = 11 \times 11 = 121.$$

Let's calculate the difference between 417 and 296:

$$417 - 296 = 121.$$

This result matches 11^2 , confirming that the pattern of adding squares of consecutive odd numbers ($1^2, 3^2, 5^2, 7^2, 9^2, 11^2$) is correct for this number series.

Summary of the Number Series Solution

The number series follows the rule where the difference between successive terms is the square of consecutive odd numbers starting from 1. The differences are $1^2, 3^2, 5^2, 7^2, 9^2, 11^2$.

The series progression is:

- 131
- $131 + 1^2 = 131 + 1 = 132$
- $132 + 3^2 = 132 + 9 = 141$
- $141 + 5^2 = 141 + 25 = 166$
- $166 + 7^2 = 166 + 49 = 215$
- $215 + 9^2 = 215 + 81 = 296$ (The missing number)
- $296 + 11^2 = 296 + 121 = 417$

Number Series Revision Table

Series Terms and Differences Pattern

Term Position	Value	Difference from Previous Term	Difference Pattern
1st	131	–	–
2nd	132	$132 - 131 = 1$	1^2
3rd	141	$141 - 132 = 9$	3^2
4th	166	$166 - 141 = 25$	5^2
5th	215	$215 - 166 = 49$	7^2
6th	296	$296 - 215 = 81$	9^2
7th	417	$417 - 296 = 121$	11^2

Additional Information on Number Series

Number series problems are common in aptitude and logical reasoning tests. They assess your ability to quickly identify patterns and apply mathematical rules.

Key strategies for solving number series include:

- Calculating the differences between consecutive terms.
- Calculating the ratio between consecutive terms (for geometric series).
- Looking for patterns in the differences themselves (second-order differences).
- Checking for squares, cubes, or other powers.
- Identifying alternating patterns or combinations of rules.
- Considering prime numbers or other special number sequences.

Practice with various types of number series helps improve pattern recognition skills.

77. Answer: a

Explanation:

This problem asks us to identify the missing number in a numerical sequence: 5, 7, 11, ?, 35, 67. Solving this requires finding the pattern that governs the sequence's progression.

Series Pattern Analysis

To uncover the pattern, we first calculate the differences between consecutive terms in the given series:

- The difference between the second term (7) and the first term (5) is $7 - 5 = 2$.
- The difference between the third term (11) and the second term (7) is $11 - 7 = 4$.

We notice that the differences are increasing. The difference grew from 2 to 4. Let's hypothesize that the difference doubles for each subsequent step.

Following this potential pattern of doubling differences:

- The first difference is 2.
- The second difference is 4, which is 2×2 .
- The third difference should be $4 \times 2 = 8$.
- The fourth difference should be $8 \times 2 = 16$.
- The fifth difference should be $16 \times 2 = 32$.

The sequence of differences is 2, 4, 8, 16, 32. This sequence perfectly matches the pattern of powers of 2, starting from 2^1 .

Step-by-Step Calculation for the Missing Number

Now, we apply this established pattern to find the missing number:

1. **First Term:** The series starts with 5.
2. **Second Term:** Add the first difference (2) to the first term: $5 + 2 = 7$. This matches the given second term.
3. **Third Term:** Add the second difference (4) to the second term: $7 + 4 = 11$. This matches the given third term.
4. **Fourth Term (The Missing Number):** To find the fourth term, we add the third difference (8) to the third term (11). Calculation: $11 + 8 = 19$.

5. **Fifth Term Verification:** We check if our calculated fourth term (19) fits the sequence. The next difference should be 16. Adding this to 19 gives $19 + 16 = 35$. This matches the given fifth term.
6. **Sixth Term Verification:** We perform a final check. The next difference should be 32. Adding this to the fifth term (35) gives $35 + 32 = 67$. This matches the given sixth term, confirming our pattern is correct.

Conclusion on Series Completion

The pattern identified—adding successive powers of 2 ($2^1, 2^2, 2^3, \dots$) to the previous term—holds true for the entire sequence.

The calculation for each term can be represented as:

- $a_1 = 5$
- $a_2 = a_1 + 2^1 = 5 + 2 = 7$
- $a_3 = a_2 + 2^2 = 7 + 4 = 11$
- $a_4 = a_3 + 2^3 = 11 + 8 = 19$
- $a_5 = a_4 + 2^4 = 19 + 16 = 35$
- $a_6 = a_5 + 2^5 = 35 + 32 = 67$

Thus, the number that correctly replaces the question mark (?) in the series is 19.

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78. Answer: c

Explanation:

Analyzing the Letter Series Pattern

The question asks us to find the missing term in the sequence: QCD, PDE, OEF, ?

We need to identify the pattern governing the changes between consecutive terms in the series. We can do this by looking at the progression of each letter position (first, second, and third) separately.

Investigating the First Letter Progression

Let's examine the sequence formed by the first letters of each term: Q, P, O.

- Q is the 17th letter of the alphabet.
- P is the 16th letter of the alphabet.
- O is the 15th letter of the alphabet.

We observe a consistent pattern: each first letter moves one step backward in the alphabet ($Q \rightarrow P, P \rightarrow O$).

The numerical sequence of positions is 17, 16, 15. To find the next term in this sequence, we subtract 1: $15 - 1 = 14$.

The 14th letter of the alphabet is N. So, the first letter of the missing term is N.

Investigating the Second Letter Progression

Now, let's look at the sequence formed by the second letters: C, D, E.

- C is the 3rd letter of the alphabet.
- D is the 4th letter of the alphabet.
- E is the 5th letter of the alphabet.

The pattern here is that each second letter moves one step forward in the alphabet ($C \rightarrow D, D \rightarrow E$).

The numerical sequence of positions is 3, 4, 5. To find the next term, we add 1: $5 + 1 = 6$.

The 6th letter of the alphabet is F. So, the second letter of the missing term is F.

Investigating the Third Letter Progression

Finally, let's analyze the sequence formed by the third letters: D, E, F.

- D is the 4th letter of the alphabet.
- E is the 5th letter of the alphabet.

- F is the 6th letter of the alphabet.

Similar to the second letter, the pattern is that each third letter moves one step forward in the alphabet ($D \rightarrow E, E \rightarrow F$).

The numerical sequence of positions is 4, 5, 6. To find the next term, we add 1: $6 + 1 = 7$.

The 7th letter of the alphabet is G. So, the third letter of the missing term is G.

Determining the Missing Term

By combining the next letters found for each position:

- First letter: N
- Second letter: F
- Third letter: G

Thus, the missing term in the series is NFG.

Summary Table of Letter Series Patterns

Analysis of Letter Position Patterns

Letter Position	Term 1	Term 2	Term 3	Observed Pattern	Next Letter in Pattern
1st Letter	Q (17)	P (16)	O (15)	Decrement by 1 (-1)	N (14)
2nd Letter	C (3)	D (4)	E (5)	Increment by 1 ($+1$)	F (6)
3rd Letter	D (4)	E (5)	F (6)	Increment by 1 ($+1$)	G (7)

Following these patterns step-by-step confirms that the missing term is NFG.

79. Answer: b

Explanation:

Understanding the Relationship Puzzle: Kapil and Shilpa

This question involves a family relationship puzzle where we need to determine the connection between Kapil and Shilpa based on Shilpa's statement.

Analyzing Shilpa's Statement

Shilpa points towards Kapil and makes a statement about his family relative to hers. Let's break down the key parts of her statement:

- **"My son Ashish"**: This tells us Shilpa has a son named Ashish.
- **"The father of my son Ashish"**: This person is Shilpa's husband.
- **"His (Kapil's) mother's brother"**: This refers to Kapil's maternal uncle.

Step-by-Step Relationship Breakdown

We can establish the relationship by connecting the individuals mentioned:

1. **Identify the core relationship**: Shilpa states that a specific person is both "Kapil's mother's brother" AND "the father of my son Ashish".
2. **Link the generations**:
 - The "father of my son Ashish" is Shilpa's husband.
 - Therefore, the statement simplifies to: "Kapil's mother's brother = Shilpa's husband".
3. **Determine Kapil's mother's connection**: If Kapil's mother's brother is Shilpa's husband, it means Kapil's mother is the sister of Shilpa's husband.
4. **Establish Kapil's relation to Shilpa**: Since Kapil's mother is the sister of Shilpa's husband, Kapil is the son of Shilpa's husband's sister.
5. **Conclusion**: The son of one's husband's sister is their **nephew**.

Final Conclusion

Based on the logical breakdown of Shilpa's statement, Kapil is the son of Shilpa's husband's sister. This relationship makes Kapil Shilpa's **nephew**.

The correct option is **nephew**.

80. Answer: d

Explanation:

Analyzing Lilly's Driving Distance

This problem involves calculating the final displacement of Lilly from her starting point after a series of movements. We need to determine the straight-line distance between where she began and where she ended up.

Understanding Lilly's Movement Path

Let's break down Lilly's journey step by step:

- **Step 1:** Lilly drives 16 m directly South.
- **Step 2:** She turns left (which is West, assuming she started facing South) and drives 6 m.
- **Step 3:** She turns left again (which is now North) and drives 8 m.

Calculating Lilly's Final Position

To find the distance from the starting point, we can use a coordinate system. Let's assume Lilly's starting point is the origin (0, 0) on a 2D plane, where North is the positive y-axis and East is the positive x-axis.

- **Initial Position:** (0, 0)
- **After Step 1 (16 m South):** Her position changes along the y-axis. The new position is (0, -16).
- **After Step 2 (6 m West):** She turns left from South, which is West (negative x-direction). Her position changes along the x-axis. The new position is $(0 - 6, -16) = (-6, -16)$.
- **After Step 3 (8 m North):** She turns left from West, which is North (positive y-direction). Her position changes along the y-axis. The final position is $(-6, -16 + 8) = (-6, -8)$.

$$8) = (-6, -8).$$

Determining Net Displacement

Lilly's final position is $(-6, -8)$ relative to her starting point $(0, 0)$.

- The net displacement in the East-West direction (x-axis) is -6 m (meaning 6 m West).
- The net displacement in the North-South direction (y-axis) is -8 m (meaning 8 m South).

Calculating the Straight-Line Distance

The distance from the starting point is the magnitude of the net displacement vector. We can find this using the Pythagorean theorem, where the distance is the hypotenuse of a right-angled triangle formed by the net displacements along the axes.

Let the distance be d . The formula is:

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2}$$

Substituting the net displacements:

$$d = \sqrt{(-6 \text{ m})^2 + (-8 \text{ m})^2}$$

$$d = \sqrt{36 \text{ m}^2 + 64 \text{ m}^2}$$

$$d = \sqrt{100 \text{ m}^2}$$

$$d = 10 \text{ m}$$

Final Distance from Starting Point

Therefore, the distance of Lilly from her starting point is 10 meters.

81. Answer: c

Explanation:

Dollar United States Taka Analogy Explained

This question tests our knowledge of world currencies and the countries they belong to. It's presented as an analogy, which means we need to figure out the relationship between the first pair of words (Dollar : United States) and then apply that same relationship to find the missing word for the second pair (Taka : ?).

Currency Relationship Analysis

Let's look at the first pair:

- **Dollar** is the name of the currency.
- **United States** is the country that uses the Dollar as its official currency.

So, the relationship is: **Currency : Country using that Currency.**

Taka Currency Identification

Now we need to apply this relationship to the second part of the analogy:

- The currency is **Taka**.
- We need to find the country where Taka is the official currency.

Country Options Analysis

Let's examine the given options to see which country uses the Taka as its currency:

- **Zimbabwe:** The currency used in Zimbabwe is the Zimbabwean dollar.
- **South Africa:** The currency used in South Africa is the Rand.
- **Bangladesh:** The currency used in Bangladesh is the Taka. This matches our requirement.
- **Kenya:** The currency used in Kenya is the Shilling.

Based on this analysis, the Taka is the currency of Bangladesh.

Correct Match Identification

Therefore, the analogy Dollar : United States :: Taka : Bangladesh holds true because in both cases, the first word represents a currency and the second word represents the country that uses that currency.

The completed analogy is: **Dollar** is to the **United States** as **Taka** is to **Bangladesh**.

82. Answer: a

Explanation:

The problem asks us to find the relationship between the first pair of numbers (83 : 9) and apply the same relationship to the second number (146) to find the missing number.

Analyzing the Relationship: 83 to 9

First, let's examine the connection between 83 and 9.

- Calculate the sum of the digits of 83: $8 + 3 = 11$.
- The target number is 9. Compare the sum (11) with the target number (9). The difference is $11 - 9 = 2$.
- Now, let's see if we can find a relationship between the digits (8 and 3) and this difference (2). We can observe that the modulo operation $8 \bmod 3$ equals 2.
- Let's hypothesize a rule based on this: **Sum of digits - (First Digit $\bmod$ Second Digit)**.
- Testing this rule for 83: $(8 + 3) - (8 \bmod 3) = 11 - 2 = 9$. This matches the given relationship.

Applying the Rule to 146

Next, we apply a similar logic to the number 146 to find the related number, which is expected to be 12 based on the options.

- Calculate the sum of the digits of 146: $1 + 4 + 6 = 11$.
- The target number is 12. Compare the sum (11) with the target number (12). The difference is $12 - 11 = 1$.
- Let's see if we can find a relationship between the digits (1, 4, and 6) and this difference (1). Consider the first two digits (1 and 4). The modulo operation $1 \bmod 4$ equals 1.
- The difference required was +1 (12 is greater than 11), whereas for 83, the difference was -2 (9 is less than 11). This suggests the operation might change based on a property of the number. Since 83 is odd and 146 is even, let's refine the rule based on parity:
 - If the number is **odd**, use: Sum of digits - (First Digit $\bmod$ Second Digit).
 - If the number is **even**, use: Sum of digits + (First Digit $\bmod$ Second Digit).
- Testing the rule for the even number 146: $(1 + 4 + 6) + (1 \bmod 4) = 11 + 1 = 12$.

This rule consistently explains the relationship for both pairs.

Conclusion

Following the derived pattern:

- For 83 (odd): $(8 + 3) - (8 \bmod 3) = 11 - 2 = 9$.
- For 146 (even): $(1 + 4 + 6) + (1 \bmod 4) = 11 + 1 = 12$.

Therefore, the number related to 146 is 12.

83. Answer: b

Explanation:

Solving Number Analogy Questions

Number analogy problems ask you to find the relationship between pairs of numbers and apply that same relationship to another pair to find a missing number. In this question, we are given three pairs where the relationship between

the first and second numbers in each pair should be consistent: $14 : 210 :: 13 : ? :: 16 : 272$.

Our goal is to identify the mathematical operation or pattern that connects the first number to the second number in the known pairs (14, 210) and (16, 272). Once we find this pattern, we can apply it to the third pair (13, ?) to find the missing number.

Finding the Number Relationship Pattern

Let's examine the first given pair: 14 and 210.

- We can try simple operations like multiplication or addition. $14 \times 10 = 140$, $14 \times 20 = 280$. 210 is between these.
- Let's consider squaring the first number: $14^2 = 196$.
- How is 196 related to 210? The difference is $210 - 196 = 14$.
- This suggests a potential relationship where the second number is the square of the first number plus the first number itself. That is, $n : n^2 + n$.

Let's test this pattern with the first pair (14, 210):

For $n = 14$, the pattern $n^2 + n$ gives: $14^2 + 14 = 196 + 14 = 210$. This matches the given pair.

Verifying the Pattern with the Second Known Pair

Now, let's verify if this $n^2 + n$ pattern holds for the second known pair: 16 and 272.

For $n = 16$, the pattern $n^2 + n$ gives: $16^2 + 16$.

- $16^2 = 256$.
- $16^2 + 16 = 256 + 16 = 272$.

This also matches the second given pair (16, 272). So, the relationship $n : n^2 + n$ is consistent across the known pairs.

Applying the Pattern to Find the Missing Number

We need to find the number related to 13 using the same pattern $n : n^2 + n$.

For the third pair, $n = 13$. The missing number will be $13^2 + 13$.

- $13^2 = 169$.
- $13^2 + 13 = 169 + 13 = 182$.

Alternatively, the pattern $n^2 + n$ can be written as $n(n + 1)$.

- For $n = 14$: $14 \times (14 + 1) = 14 \times 15 = 210$.
- For $n = 16$: $16 \times (16 + 1) = 16 \times 17 = 272$.
- For $n = 13$: $13 \times (13 + 1) = 13 \times 14 = 182$.

Both methods give the same result: 182.

Conclusion for the Number Analogy

The relationship in the analogy $14 : 210 :: 13 : ? :: 16 : 272$ is that the second number is obtained by squaring the first number and adding the first number to the result, or simply by multiplying the first number by the next consecutive integer ($n(n + 1)$). Applying this rule to the third pair $(13, ?)$, we find the missing number is 182.

First Number (n)	Pattern ($n^2 + n$)	Result	Given/Calculated Second Number
14	$14^2 + 14 = 196 + 14$	210	210
16	$16^2 + 16 = 256 + 16$	272	272
13	$13^2 + 13 = 169 + 13$	182	182 (Calculated)

Revision Table: Key Concepts in Number Analogy

Concept	Explanation
Number Analogy	Identifying relationships (mathematical operations, patterns) between pairs of numbers.
Pattern Identification	Looking for consistent rules (addition, subtraction, multiplication, division, squares, cubes, sequences, etc.) connecting numbers in pairs.
Applying the Rule	Using the identified pattern to find a missing number in another pair.

Additional Information on Finding Number Patterns

When tackling number analogy or number series problems, consider these common patterns:

- **Arithmetic Progressions:** Adding or subtracting a constant value.
- **Geometric Progressions:** Multiplying or dividing by a constant value.
- **Square and Cube Patterns:** Numbers related to squares (n^2) or cubes (n^3), sometimes with small additions or subtractions ($n^2 + c$, $n^3 - c$).
- **Combined Operations:** A combination of two or more basic operations.
- **Digit Operations:** Operations on the digits of the number itself.
- **$n(n + 1)$ or $n(n - 1)$ Patterns:** Multiplying a number by its consecutive or preceding integer. This is the pattern found in our problem ($n(n + 1)$).

Practicing different types of patterns helps in quickly identifying the rule during exams.

84. Answer: d

Explanation:

Identifying the Odd Letter-Set Among Related Groups

The core task is to find the **odd letter-set** from the given options. This involves understanding the hidden **relationship** between the two letter-sets within each option. Three options will share a common logical connection, while the fourth will differ. We need to analyze the pattern based on **alphabetical position** and letter sequencing.

Analyzing the Relationship Patterns

We will examine each option by comparing the corresponding letters and calculating the shift in their **alphabetical position**. The standard English alphabet has 26 letters, where A=1, B=2, C=3, and so on.

Option 1: BCH – EFK

Let's determine the relationship between 'BCH' and 'EFK':

Letter 1	Alphabetical Position	Letter 2	Alphabetical Position	Shift Calculation
B	2	E	5	$5 - 2 = +3$
C	3	F	6	$6 - 3 = +3$
H	8	K	11	$11 - 8 = +3$

In this group, every letter in the first set ('BCH') is shifted forward by **3** positions in the alphabet to obtain the corresponding letter in the second set ('EFK').

Option 2: ALG – DOJ

Now, let's analyze the connection between 'ALG' and 'DOJ':

Letter 1	Alphabetical Position	Letter 2	Alphabetical Position	Shift Calculation
A	1	D	4	$4 - 1 = +3$
L	12	O	15	$15 - 12 = +3$
G	7	J	10	$10 - 7 = +3$

Similar to the first option, this group also demonstrates a consistent forward shift of 3 positions for each corresponding letter.

Option 3: EBM – HEP

Let's check the pattern for 'EBM' and 'HEP':

Letter 1	Alphabetical Position	Letter 2	Alphabetical Position	Shift Calculation
E	5	H	8	$8 - 5 = +3$
B	2	E	5	$5 - 2 = +3$
M	13	P	16	$16 - 13 = +3$

This option also follows the same rule: each letter is shifted forward by 3 places.

Option 4: DHL – GJO

Finally, let's analyze the shifts in 'DHL' and 'GJO':

Letter 1	Alphabetical Position	Letter 2	Alphabetical Position	Shift Calculation
D	4	G	7	$7 - 4 = +3$
H	8	J	10	$10 - 8 = +2$
L	12	O	15	$15 - 12 = +3$

Here, the pattern is different. The first letter ('D' to 'G') and the third letter ('L' to 'O') are shifted by +3 positions. However, the middle letter ('H' to 'J') is shifted only by +2 positions.

Conclusion: Identifying the Odd One Out

We observed that options 1, 2, and 3 consistently apply a +3 **alphabetical position** shift between the corresponding letters of the two sets.

Option 4 ('DHL - GJO') breaks this consistent pattern because the middle letter pair exhibits a +2 shift instead of +3.

Therefore, the ****odd letter-set**** that does not conform to the primary relationship is DHL - GJO.

The final answer is DHL - GJO

85. Answer: b

Explanation:

Finding the Clock Mirror Image for 1:15

This explanation helps you understand how to find the mirror image of a time displayed on a clock. When a clock is held up to a mirror, the image appears reversed horizontally. We need to determine the time that represents this reflection for 1:15.

Understanding Clock Mirror Reflections

The reflection of a clock face essentially flips the numbers horizontally. A simple trick to calculate the mirror image time is to subtract the given time from 12:00. Since subtracting minutes directly from 00 can be tricky, we often express 12:00 as 11:60.

Method for Calculating Mirror Image Time

Follow these steps:

- Represent the reference time as 11:60.
- Subtract the given time ($H : M$) from 11:60.
- Calculate the hours: Subtract the given hours (H) from 11.
- Calculate the minutes: Subtract the given minutes (M) from 60.

Calculating the Mirror Image of 1:15

Let's apply the method to the specific time 1:15.

1. Start with the reference time: 11:60.
2. Subtract the given time: 1:15.
3. Perform the subtraction:
 - Hours calculation: $11 - 1 = 10$ hours.
 - Minutes calculation: $60 - 15 = 45$ minutes.

The calculation is represented as:

$$\begin{array}{r} 11 : 60 \\ - 01 : 15 \\ \hline 10 : 45 \end{array}$$

4. The resulting mirror image time is 10:45.

Conclusion on Mirror Image Time

The calculation shows that the mirror image of 1:15 is 10:45. This matches option 2.

86. Answer: d

Explanation:

This question tests our ability to understand logical deductions based on given statements. We need to analyze the relationship between **sparrows**, **birds**, and **owls** as described in the statements and determine if the conclusions logically follow.

Sparrows are Birds: Statement Analysis

Statement 1: All sparrows are birds. This statement means that the entire group of sparrows is included within the larger group of birds. If any creature is a sparrow, it is guaranteed to be a bird.

Owls are Birds: Statement Analysis

Statement 2: Some owls are birds. This statement indicates that there is at least one owl that is also a bird. It means the category 'owls' and the category 'birds' share some members.

Conclusion Analysis: Sparrow-Owl Relationships

We are given two conclusions to evaluate:

- **Conclusion I: No sparrow is an owl.** This suggests that the categories of sparrows and owls are completely distinct, with no overlap.
- **Conclusion II: Some sparrows are owls.** This suggests that there is an overlap between the categories of sparrows and owls; at least one sparrow is also an owl.

It's important to note that Conclusion I and Conclusion II are contradictory – they cannot both be true at the same time.

Logical Deduction: Connecting Statements and Conclusions

Let's think about the possible arrangements of these groups:

From Statement 1, we know the 'Sparrows' category is completely inside the 'Birds' category. From Statement 2, we know the 'Owls' category overlaps with the 'Birds' category.

Consider how the 'Owls' category might overlap with 'Birds':

- **Possibility 1:** The owls that are birds might be completely separate from the sparrows. Imagine the 'Birds' category as a big box. 'Sparrows' is a smaller box entirely inside the big box. The 'Owls' box overlaps the big 'Birds' box, but the overlap part does not touch the 'Sparrows' box. In this scenario, no sparrow is an owl, making Conclusion I true. Conclusion II would be false.
- **Possibility 2:** The owls that are birds might include some sparrows. Using the box analogy, the 'Owls' box overlaps the 'Birds' box in a way that includes part of the 'Sparrows' box. In this scenario, some sparrows are owls, making Conclusion II true. Conclusion I would be false.

Both of these possibilities are valid interpretations of the initial statements. The statements themselves don't force one specific arrangement.

Determining Which Conclusion Logically Follows

Since the given statements allow for Possibility 1 (where Conclusion I is true) and Possibility 2 (where Conclusion II is true), we cannot be certain that *only* Conclusion I follows, or that *only* Conclusion II follows.

However, observe that in *every* case that fits the statements (Possibility 1 or Possibility 2), one of the two conclusions *must* be true. The premises guarantee that either Conclusion I holds or Conclusion II holds.

This means the logical deduction that covers all possibilities is that "Either conclusion I or II follows".

Final Answer

Based on this reasoning, the only option that accurately reflects the logical possibilities derived from the statements is that either Conclusion I or Conclusion II follows.

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87. Answer: b

Explanation:

Understanding the Mathematical Sign Interchange Problem

The core task is to identify which pair of mathematical signs in the given equation needs to be swapped to make the equation mathematically true. The provided equation is:

$$45 - 5 + 96 \div 8 \times 24 = 9$$

To solve this, we will test each option by exchanging the specified signs and then evaluating the equation using the standard order of operations (PEMDAS/BODMAS): Parentheses/Brackets, Exponents/Orders, Multiplication and Division (from left to right), Addition and Subtraction (from left to right).

Checking Sign Interchange Options

Checking Option 1: Interchanging ' $\div$ ' and ' $-$ '

We swap the division symbol (' $\div$ ') with the subtraction symbol (' $-$ ').

The equation transforms into: $45 \div 5 + 96 - 8 \times 24$

Let's evaluate the new expression step-by-step:

- Perform division: $45 \div 5 = 9$
- Perform multiplication: $8 \times 24 = 192$
- Perform addition and subtraction from left to right: $9 + 96 - 192$
- $105 - 192 = -87$

The result is -87 , which is not equal to 9. Thus, this option is incorrect.

Checking Option 2: Interchanging '+' and 'x'

Next, we swap the addition symbol ('+') with the multiplication symbol ('x').

The equation becomes: $45 - 5 \times 96 \div 8 + 24$

Evaluating the modified expression:

- Perform multiplication: $5 \times 96 = 480$
- Perform division: $480 \div 8 = 60$
- Perform addition and subtraction from left to right: $45 - 60 + 24$
- $-15 + 24 = 9$

The result is 9, which matches the right side of the original equation. This confirms that interchanging '+' and 'x' makes the equation correct.

Checking Option 3: Interchanging '+' and '-'

We now swap the addition symbol ('+') with the subtraction symbol ('-').

The equation changes to: $45 + 5 - 96 \div 8 \times 24$

Evaluating this expression:

- Perform division: $96 \div 8 = 12$
- Perform multiplication: $12 \times 24 = 288$
- Perform addition and subtraction from left to right: $45 + 5 - 288$
- $50 - 288 = -238$

The result is -238 , which is not equal to 9. This option is incorrect.

Checking Option 4: Interchanging 'x' and '-'

Finally, we swap the multiplication symbol ('x') with the subtraction symbol ('-').

The equation becomes: $45 \times 5 + 96 \div 8 - 24$

Evaluating the expression:

- Perform division: $96 \div 8 = 12$
- Perform multiplication: $45 \times 5 = 225$
- Perform addition and subtraction from left to right: $225 + 12 - 24$
- $237 - 24 = 213$

The result is 213 , which is not equal to 9. This option is also incorrect.

Conclusion on Correct Mathematical Signs

After evaluating all the possibilities, the only interchange that makes the original equation mathematically correct is swapping the addition symbol ('+') and the multiplication symbol ('x'). This leads to the correct result of 9.

88. Answer: b

Explanation:

Letters and their positional values:

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

The pattern followed here is:

The first, second, fourth, and fifth letters are decreased by 2.

The third letter is increased by +2.

Now,

'ABOUT' is written as 'YZQSR'.

A	B	O	U	T
-2	-2	+2	-2	-2
↓	↓	↓	↓	↓
Y	Z	Q	S	R

'PARTS' is written as 'NYTRQ'.

P	A	R	T	S
-2	-2	+2	-2	-2
↓	↓	↓	↓	↓
N	Y	T	R	Q

Similarly, for 'PLANT'

P	L	A	N	T
-2	-2	+2	-2	-2
↓	↓	↓	↓	↓
N	J	C	L	R

Therefore, 'PLANT' will be written as 'NJCLR'.

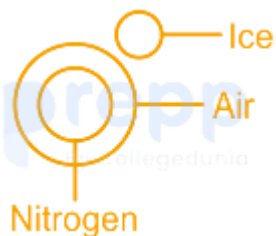
Hence, the correct answer is "Option 2".

89. Answer: d

Explanation:

Nitrogen is a part of air while ice is different from the two.

So the possible Venn diagram is:



Hence, the figure in option 4 is the correct answer.

90. Answer: b

Explanation:

The figure in Option (2) fits to complete the pattern.

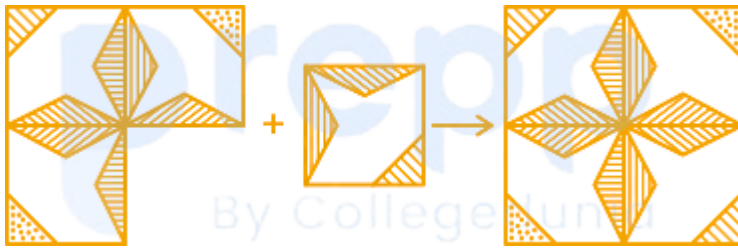


Hence, the correct answer is "Option (2)".

91. Answer: b

Explanation:

The figure that completes the given pattern is:-



Hence, "option 2" is the correct answer.

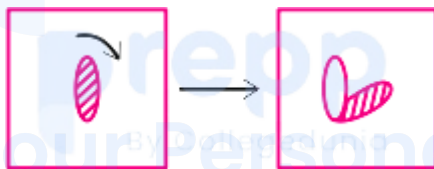
92. Answer: b

Explanation:

The logic followed in the given figure series is:

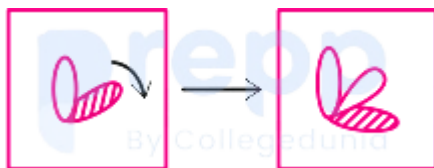
From Figure (1) to (2):

A new shape is added to the existing form.



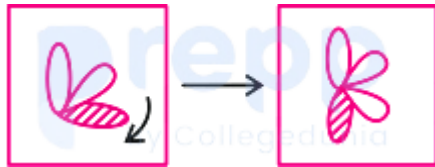
From Figure (2) to (3):

A new shape is added to the existing form.



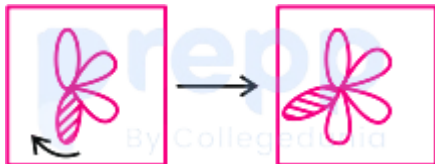
From Figure (3) to (4):

A new shape is added to the existing form.



From Figure (4) to Answer Figure:

A new shape is added to the existing form.



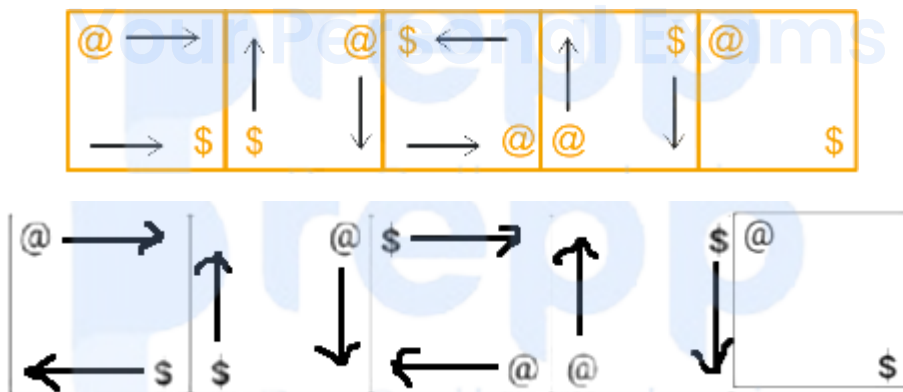
Hence, the correct answer is "Option (2)".

93. Answer: a

Explanation:

The logic followed here is:

Logic: The symbols are getting shifting in clockwise direction.



Hence, the correct answer is "Option 1".

94. Answer: c

Explanation:

In question figure, one of the dots lies in the common region of trapezium and triangle only, the second dot lies in the common region of heart, circle and triangle only and the third dot lies in the common region of all the five figures. Only figure (C) consists of these types of regions.



Hence, "C" is the correct answer.

95. Answer: d

Explanation:

In question figure, one of the dots lies in the common region of pentagon and square only,



The second dot lies in the region of square only.



and the third dot lies in the common region of all the four figures.



Only figure (D) consists of these types of regions.



Hence, "D" is the correct answer.

96. Answer: c

Explanation:

Understanding the Letter Cluster Odd One Out Problem

This type of question, known as a letter cluster or analogy question, asks you to identify the letter cluster that is different from the others based on a certain pattern or rule. Three of the given letter clusters will follow a similar pattern, while one will deviate. Our task is to discover this underlying pattern by analyzing the relationships between the letters in each cluster.

Analyzing Each Letter Cluster

To find the pattern, we commonly look at the alphabetical positions of the letters. Let's assign a numerical value to each letter based on its position in the English alphabet (A=1, B=2, ..., Z=26).

Analyzing JQM

- J is the 10th letter.
- Q is the 17th letter.
- M is the 13th letter.

Let's look for relationships:

- Relationship between the first and second letter: From J(10) to Q(17) is $17 - 10 = +7$ positions.

- Relationship between the second and third letter: From Q(17) to M(13) is $13 - 17 = -4$ positions.
- Relationship between the first and third letter: From J(10) to M(13) is $13 - 10 = +3$ positions.
- Sum of the first two letter positions: $10 + 17 = 27$.

Analyzing DWG

- D is the 4th letter.
- W is the 23rd letter.
- G is the 7th letter.

Let's look for relationships:

- Relationship between the first and second letter: From D(4) to W(23) is $23 - 4 = +19$ positions.
- Relationship between the second and third letter: From W(23) to G(7) is $7 - 23 = -16$ positions.
- Relationship between the first and third letter: From D(4) to G(7) is $7 - 4 = +3$ positions.
- Sum of the first two letter positions: $4 + 23 = 27$.

Analyzing BXE

- B is the 2nd letter.
- X is the 24th letter.
- E is the 5th letter.

Let's look for relationships:

- Relationship between the first and second letter: From B(2) to X(24) is $24 - 2 = +22$ positions.
- Relationship between the second and third letter: From X(24) to E(5) is $5 - 24 = -19$ positions.
- Relationship between the first and third letter: From B(2) to E(5) is $5 - 2 = +3$ positions.
- Sum of the first two letter positions: $2 + 24 = 26$.

Analyzing AZD

- A is the 1st letter.
- Z is the 26th letter.
- D is the 4th letter.

Let's look for relationships:

- Relationship between the first and second letter: From A(1) to Z(26) is $26 - 1 = +25$ positions.
- Relationship between the second and third letter: From Z(26) to D(4) is $4 - 26 = -22$ positions.
- Relationship between the first and third letter: From A(1) to D(4) is $4 - 1 = +3$ positions.
- Sum of the first two letter positions: $1 + 26 = 27$.

Identifying the Patterns

Let's summarize the findings:

Cluster	First Letter Pos	Second Letter Pos	Third Letter Pos	First to Second Step	Second to Third Step	First to Third Step	Sum of First Two Positions
JQM	10	17	13	+7	-4	+3	27
DWG	4	23	7	+19	-16	+3	27
BXE	2	24	5	+22	-19	+3	26
AZD	1	26	4	+25	-22	+3	27

From the table, we can observe two potential patterns:

- **Pattern 1:** The step from the first letter to the third letter is consistently +3 positions (e.g., $J + 3 = M$, $D + 3 = G$, etc.) for all four letter clusters. Since this pattern is common to all, it doesn't help us find the odd one out.

- **Pattern 2:** The sum of the alphabetical positions of the first two letters is 27 for JQM, DWG, and AZD ($10 + 17 = 27$, $4 + 23 = 27$, $1 + 26 = 27$). However, for BXE, the sum is $2 + 24 = 26$.

Conclusion: Identifying the Odd One Out

The pattern that differentiates one cluster from the rest is the sum of the alphabetical positions of the first two letters. JQM, DWG, and AZD follow the pattern where this sum is 27. BXE does not follow this pattern, as its sum is 26.

Therefore, **BXE** is the odd one out.

Revision Table: Summarizing Letter Cluster Patterns

Letter Cluster	Rule 1: First + 3 Positions = Third	Rule 2: Sum of First Two Positions = 27	Follows Rule 2?
JQM	$J(10) + 3 = M(13)$	$10 + 17 = 27$	Yes
DWG	$D(4) + 3 = G(7)$	$4 + 23 = 27$	Yes
BXE	$B(2) + 3 = E(5)$	$2 + 24 = 26$	No
AZD	$A(1) + 3 = D(4)$	$1 + 26 = 27$	Yes

Additional Information on Letter Reasoning Patterns

Letter reasoning questions in exams often use patterns based on:

- **Alphabetical Position:** Using the 1-26 value of letters (as seen in this problem).
- **Difference/Sum of Positions:** Calculating the steps between letters (e.g., +2, -3, +5).
- **Vowels/Consonants:** Grouping letters based on whether they are vowels (A, E, I, O, U) or consonants.
- **Reverse Alphabetical Position:** Using values from Z=1 to A=26.
- **Symmetrical Letters:** Letters that look the same when reflected (e.g., H, I, O, X).

- **Letters in Order/Reverse Order:** Simple sequences like ABC, XYZ.
- **Patterns in Steps:** The steps themselves follow a mathematical or logical series (e.g., +2, +4, +6...).
- **Sum to 27 (Complementary Letters):** Pairs of letters like A and Z, B and Y, C and X, etc., whose positions sum up to 27. This pattern was key in identifying the odd one out here.

Solving these questions requires careful observation and systematically testing different possible relationships between the letters in the given clusters.

97. Answer: a

Explanation:

- The question asks us to identify the word that is different from the other three among the given options: Ruthless, Compassionate, Affection, and Kind. This is a vocabulary-based question that requires understanding the meaning and connotation of each word.

Identifying the Different Word

We need to find the word that does not share a common meaning or characteristic with the others. Let's examine each word:

Defining the Given Words

- **Ruthless:** This word describes someone who shows no pity or compassion. It implies cruelty, harshness, and a lack of mercy. It has a negative meaning.
- **Compassionate:** This word describes someone who feels or shows sympathy and concern for others who are suffering. It implies kindness and empathy. It has a positive meaning.
- **Affection:** This word refers to a gentle feeling of fondness or liking, often shown through tenderness and care. It is associated with warmth and positive regard for others. It has a positive meaning.

- **Kind:** This word describes someone who has or shows a friendly, generous, and considerate nature. It implies benevolence and thoughtfulness towards others. It has a positive meaning.

Analyzing the Relationship Between Words

When we look at the meanings, we can see a pattern:

- **Compassionate, Affection, and Kind** all describe positive qualities related to caring for, being concerned about, and showing warmth towards others.
- These words are synonyms or closely related concepts, all highlighting positive social and emotional traits.
- **Ruthless**, however, stands in direct contrast to these words. It signifies the absence of the very qualities mentioned above – pity, compassion, and kindness.

Conclusion on the Different Word

Based on the analysis of their meanings:

- 'Compassionate', 'Affection', and 'Kind' are all related to positive feelings and actions towards others.
- 'Ruthless' describes the opposite – a lack of these positive qualities.

Therefore, 'Ruthless' is the word that is different from the other three.

98. Answer: b

Explanation:

Understanding the Odd Word Out Question

The question asks us to identify the word that is different from the others in a given set. This type of question tests our ability to find a common characteristic shared by some items and spot the one that does not share that characteristic.

Analyzing the Animal Words

Let's look at the words provided:

- Sheep
- Crocodile
- Cow
- Goat

These are all names of animals. We need to find a property or characteristic that groups three of them together and excludes the fourth.

Identifying the Odd Animal Out

Consider the characteristics of these animals:

- **Sheep:** A mammal, warm-blooded, typically lives on land, gives birth to live young, has fur/wool.
- **Crocodile:** A reptile, cold-blooded, lives in water and on land, lays eggs, has scales.
- **Cow:** A mammal, warm-blooded, typically lives on land, gives birth to live young, has fur/hair.
- **Goat:** A mammal, warm-blooded, typically lives on land, gives birth to live young, has fur/hair.

Upon comparing these characteristics, we can see a clear distinction based on biological classification:

- Sheep is a mammal.
- Cow is a mammal.
- Goat is a mammal.
- Crocodile is a reptile.

Sheep, Cow, and Goat belong to the class Mammalia, while the Crocodile belongs to the class Reptilia.

Explanation of the Difference

The common characteristic among Sheep, Cow, and Goat is that they are all mammals. Mammals share traits like being warm-blooded, having fur or hair, feeding milk to their young, and typically giving birth to live young. The Crocodile, on the other hand, is a reptile. Reptiles are typically cold-blooded, have scales, and most lay eggs.

Therefore, the Crocodile is different from the Sheep, Cow, and Goat because it belongs to a different biological class (Reptilia) compared to the other three (Mammalia).

Conclusion: Finding the Different Word

Based on the biological classification and the shared characteristics, Sheep, Cow, and Goat form a group (mammals), and Crocodile is the one that does not fit this group (it's a reptile). Thus, the word that is different from the rest is Crocodile.

Revision Table: Animal Classification Basics

Characteristic	Mammals (Sheep, Cow, Goat)	Reptiles (Crocodile)
Body Temperature Regulation	Warm-blooded (endothermic)	Cold-blooded (ectothermic)
Body Covering	Fur or hair	Scales
Reproduction	Give birth to live young (mostly)	Lay eggs (mostly)
Feeding Young	Produce milk	Do not produce milk

Additional Information: Other Animal Classes

Besides mammals and reptiles, there are other major classes of vertebrates:

- **Birds:** Warm-blooded, feathers, lay eggs, typically fly. (Example: Eagle, Sparrow)

- **Fish:** Cold-blooded, scales, gills for breathing underwater, lay eggs (mostly), live in water. (Example: Shark, Salmon)
- **Amphibians:** Cold-blooded, moist skin, live in water as larvae and on land as adults (typically), lay eggs in water. (Example: Frog, Salamander)

Understanding these basic classifications helps in solving odd-one-out questions based on animal types.

99. Answer: a

Explanation:

The image embedded in given figure is as shown below:

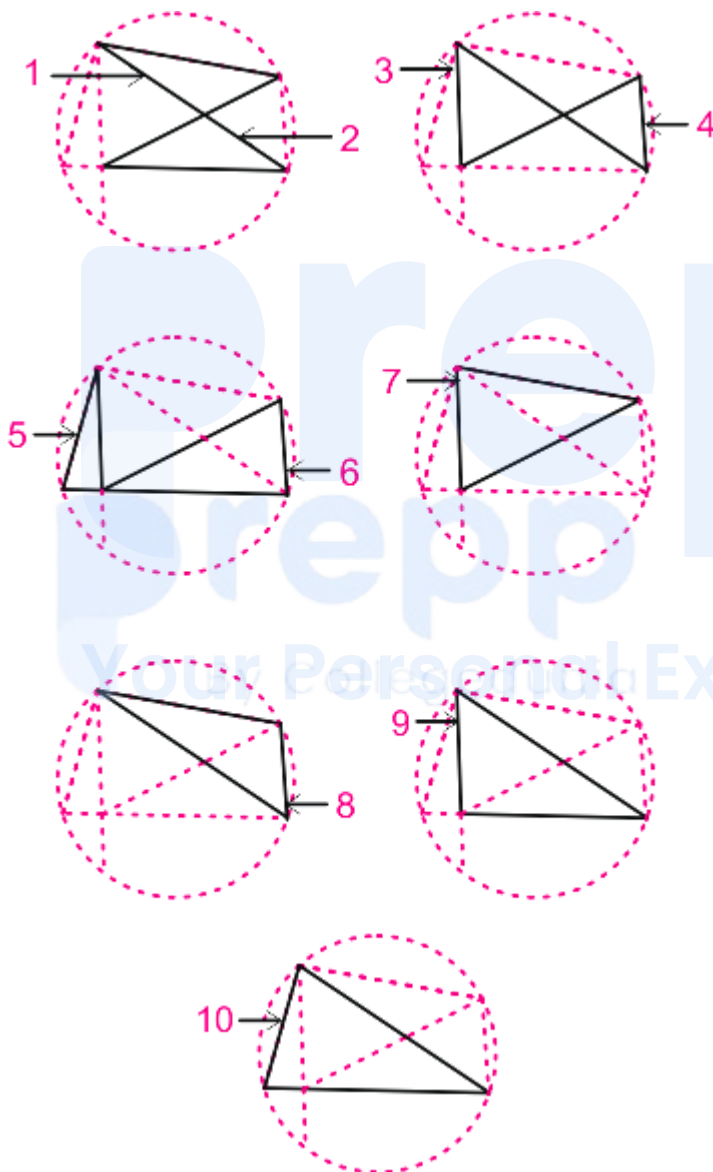
No.	Option	Question	Answer
1.			Embedded
2.			Not Embedded
3.			Not Embedded
4.			Not Embedded

Hence, 'option 1' is the correct answer.

100. Answer: a

Explanation:

The number of triangles in the given figure:



Here, the number of triangles is '10'.

Hence, the correct answer is "Option (1)".

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