Answers

1. **Answer: a**

Explanation:

Functional Fixedness: Difficulty Using Objects Unusually

This question explores a common cognitive bias that affects problem-solving. It asks about the specific reason behind the **inability** to think of creative solutions where a **familiar object** is used in an **unusual way** to overcome a challenge.

Analyzing the Options for Problem-Solving Barriers

Let's examine each option to understand how it relates to the scenario described:

- **Functional Fixedness**: This cognitive bias involves perceiving an object only in terms of its most common or traditional function. It creates a mental block, preventing individuals from recognizing alternative or novel uses for that object, which is exactly the situation described in the question.
- **Rule Bound Approach**: This describes a tendency to rigidly adhere to established rules, procedures, or methods. While being too rule-bound can hinder finding unusual solutions, it's more about following existing instructions than about the fixed perception of an object's use.
- **Regulatory Mechanism**: This term refers to psychological processes that help control behavior, emotions, or physiological states. It's not directly related to the specific type of thinking error described in the question concerning object perception.
- **Limited Capacity**: This relates to the constraints on our cognitive resources, such as attention span or working memory. While cognitive limitations can impact problem-solving in general, they don't specifically explain the failure to see new uses for a familiar object.

Understanding Functional Fixedness in Detail

Functional fixedness is a key concept in cognitive psychology, particularly in the study of creativity and problem-solving.

- It's a specific type of mental set that prevents a person from using an object in a way other than its usual or intended purpose.
- This bias makes it difficult to think "outside the box" when faced with problems that require adapting common items for new roles.
- Overcoming functional fixedness often involves shifting one's perspective and considering the object's potential properties rather than just its typical function.

Example Illustrating Functional Fixedness

A classic example demonstrating **functional fixedness** is the Duncker Candle Problem:

Participants are given:

- A box of matches
- A packet of thumbtacks
- A candle

The task is to mount the candle on a vertical corkboard wall so that it doesn't drip wax onto the table below.

The solution requires using the matchbox in an unconventional way – emptying the matches, using the box itself as a small shelf, and attaching it to the wall with the thumbtacks to hold the candle. Many people initially fail because they only see the matchbox as a container for matches, demonstrating **functional fixedness**.

Conclusion

The scenario clearly describes the cognitive obstacle of **functional fixedness** – the mental barrier that prevents recognizing or considering **unusual ways** to utilize a **familiar object** to solve a problem. This makes it the most accurate explanation for the described inability.

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2. **Answer: b**

Explanation:

Analyzing the Four Children Seating Puzzle

This problem requires us to figure out the seating order of four children, A, B, C, and D, based on clues about who is sitting next to whom. The goal is to identify the child sitting next to D.

Understanding the Constraints: Adjacent Seats

Let's list the specific conditions provided in the question:

- There are four children sitting in a row. We can think of their seats as positions 1, 2, 3, and 4.
- **Condition 1:** Child A is sitting next to Child B. This means A and B must be in adjacent seats. We can write this relationship as $Adjacent(A, B)$. The pair could be AB or BA.
- **Condition 2:** Child A is not sitting next to Child C. This means there must be at least one child between A and C. We express this as $NotAdjacent(A, C)$.
- **Condition 3:** Child C is not sitting next to Child D. Similar to the previous condition, C and D cannot be in adjacent seats. We express this as $NotAdjacent(C, D)$.

Our task is to find which child is in the seat next to D based on these rules.

Step-by-Step Deduction of Valid Arrangement

We can explore possible arrangements by considering the pair AB or BA and checking if they satisfy all the conditions.

Scenario 1: Assuming the adjacent pair is AB

- **Possibility 1: AB _ _** The remaining seats (3 and 4) are for C and D.
  - *Arrangement AB C D:* This satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$ (A is next to B, not C). However, C is next to D, violating $NotAdjacent(C, D)$. So, this arrangement is invalid.
  - *Arrangement AB D C:* This also satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But D is next to C, violating $NotAdjacent(C, D)$. This arrangement is also invalid.

- **Possibility 2: _ AB _** The remaining children C and D are in seats 1 and 4.
  - *Arrangement C AB D:* This violates $NotAdjacent(A, C)$ because C is directly next to A. Invalid.
  - *Arrangement D AB C:* This satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. However, C is next to D, violating $NotAdjacent(C, D)$. Invalid.
- **Possibility 3: _ _ AB** The remaining children C and D are in seats 1 and 2.
  - *Arrangement C D AB:* Satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But C is next to D, violating $NotAdjacent(C, D)$. Invalid.
  - *Arrangement D C AB:* Satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But D is next to C, violating $NotAdjacent(C, D)$. Invalid.

Scenario 2: Assuming the adjacent pair is BA

- **Possibility 4: BA _ _** The remaining seats (3 and 4) are for C and D.
  - *Arrangement BA C D:* Satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But C is next to D, violating $NotAdjacent(C, D)$. Invalid.
  - *Arrangement BA D C:* Satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But D is next to C, violating $NotAdjacent(C, D)$. Invalid.
- **Possibility 5: _ BA _** The remaining children C and D are in seats 1 and 4.
  - *Arrangement C BA D:* Let's check all conditions:
    - $Adjacent(A, B)$: Yes, B is in seat 2 and A is in seat 3.
    - $NotAdjacent(A, C)$: Yes, A is in seat 3 and C is in seat 1. They are not adjacent.
    - $NotAdjacent(C, D)$: Yes, C is in seat 1 and D is in seat 4. They are not adjacent.

    All conditions are met. This arrangement is VALID.
  - *Arrangement D BA C:* This violates $NotAdjacent(A, C)$ because A is next to C. Invalid.
- **Possibility 6: _ _ BA** The remaining children C and D are in seats 1 and 2.
  - *Arrangement C D BA:* Satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But C is next to D, violating $NotAdjacent(C, D)$. Invalid.
  - *Arrangement D C BA:* Satisfies $Adjacent(A, B)$ and $NotAdjacent(A, C)$. But D is next to C, violating $NotAdjacent(C, D)$. Invalid.

By examining all possibilities, we found only one arrangement that satisfies all the given conditions: **C B A D**.

Determining Who Is Adjacent to D

In the valid seating arrangement **C B A D**:

- Child D is in the last seat (position 4).
- The seat immediately next to D is position 3.
- Child A is sitting in position 3.

Therefore, Child A is sitting in the seat adjacent to Child D.

This result matches option 2 provided with the question.

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3. **Answer: c**

Explanation:

Understanding Reactions to Public Incidents

This question involves deciding on the most appropriate response when someone unexpectedly exhibits disruptive behavior, specifically **howling**, while you are in the process of **boarding** a **bus**. The key is to choose an action that is effective, safe, and considerate.

Evaluating Potential Responses While Boarding a Bus

When faced with such a situation in a public setting, different reactions can be considered. It's helpful to analyze each option:

- **Option 1: Also howling back**
  This response involves mirroring the behavior. It's generally seen as escalating the conflict rather than resolving it. Reacting aggressively or similarly to the disruptive behavior is unlikely to lead to a positive outcome and might create further problems.
- **Option 2: Requesting the conductor to calm him down**
  Involving authority figures like the bus conductor is a possible step, especially if the behavior is concerning or poses a safety risk. However, it might not be the first

or most appropriate action if the situation could be understood or managed through direct, calm interaction.

- **Option 3: Settling the problem after knowing the cause of howling**
  This approach focuses on understanding the reason behind the person's actions. By finding out the **cause** of the **howling**, one can better address the core issue. This might involve offering help, providing reassurance, or simply understanding that the person might be distressed or confused. It's a rational and solution-oriented method.
- **Option 4: Getting angry on him and calm him down**
  Reacting with anger is an emotional response that typically worsens the situation. While the intention might be to regain control ("calm him down"), doing so out of anger is counterproductive and unlikely to be effective. It can lead to confrontation rather than resolution.

Choosing the Best Approach to Address the Howling

The most effective strategy in this scenario is to adopt a problem-solving mindset. Understanding the **cause** is crucial before deciding how to **settle the problem**.

- **Investigate the Cause:** The first step should be to try and understand why the person is howling. Is it due to distress, a medical condition, or misunderstanding? A calm inquiry might reveal the reason.
- **Communicate Calmly:** If safe to do so, speaking calmly to the person ("Is everything alright?") can open a line of communication.
- **Resolve Appropriately:** Based on the cause identified, the appropriate action can be taken. This could range from offering assistance to seeking help from the bus conductor if the situation appears serious or unmanageable.

This measured approach, focusing on understanding and then acting, is generally the most constructive way to handle unexpected social situations encountered while travelling.

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4. **Answer: a**

Explanation:

Immediate Action in Accident Scenarios

This question presents a common ethical dilemma faced in emergency situations. You encounter a child seriously injured by a vehicle, with the driver attempting to flee the scene. The core task is to decide the most crucial first step among the given options.

Prioritizing the Injured Child's Well-being

In any situation involving injury, the immediate priority is the victim's life and health. When a child is involved, this responsibility becomes even more critical. The goal is to provide the quickest and most effective help possible.

Analysis of Available Options

Let's examine each option in the context of the accident:

- **Option 1: You will immediately carry the injured boy to nearby hospital.** This action focuses directly on providing essential medical care. In cases of severe trauma, immediate medical attention can drastically improve the chances of survival and recovery. This aligns with the principle of prioritizing life-saving measures.
- **Option 2: You will catch hold of the vehicle driver.** While apprehending the driver is important for legal and ethical reasons (especially in a hit-and-run), it might delay crucial medical assistance to the injured child. Furthermore, confronting a fleeing driver could potentially be dangerous.
- **Option 3: You will inform the police about the accident.** Reporting the incident to the police is vital for investigation and justice. However, making a phone call might take time, and this action should ideally follow or happen concurrently with ensuring the child receives immediate medical aid, not instead of it.
- **Option 4: You will inform the parents of the injured boy.** Informing the family is an important step for the child's welfare. However, locating the parents might be time-consuming, and the child's immediate medical needs must be addressed before attempting to contact the family.

Determining the Most Critical First Step

When faced with a severe injury, the 'Golden Hour' concept is relevant – the first hour after the injury is critical for treatment. Therefore, the most effective and responsible initial action is to ensure the injured child gets to a hospital as quickly as possible.

Moving the child to the nearest medical facility offers the best chance for timely treatment of potentially life-threatening injuries.

While other actions like informing the police or finding the driver are important aspects of handling the situation, they should not delay the primary goal of providing immediate medical care to the injured child.

Based on this analysis, the most appropriate and urgent action is to transport the child to the hospital.

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5. **Answer: d**

Explanation:

Cognitive Processes for Problem Solving

This question asks about a specific cognitive process where an individual explores numerous possible answers or ideas when faced with a problem. These problems can span different areas, including artistic creation, literary development, scientific inquiry, or practical challenges. The key aspect is the free consideration of a wide range of potential solutions.

Understanding the Cognitive Process Options

Let's break down the different cognitive processes mentioned:

- **Heuristic Thinking**

  Heuristic thinking involves using mental shortcuts or 'rules of thumb' to find solutions efficiently. While helpful for problem-solving, it doesn't primarily focus on generating a *variety* of potential solutions but rather on finding a workable solution quickly. Examples include trial-and-error or educated guesses.

- **Creative Thinking**

  Creative thinking is a broader cognitive ability associated with producing original ideas and solutions. It often involves imagination, originality, and flexibility. While creative thinking frequently utilizes divergent thinking, it encompasses the entire process of idea generation and refinement, not just the exploration phase.

- **Convergent Thinking**

  Convergent thinking is the process of finding a single, well-defined correct answer to a problem. It involves logical steps and analysis to narrow down possibilities to the best solution. This is the opposite of exploring many different potential solutions.

- **Divergent Thinking**

  Divergent thinking is characterized by generating multiple, unique ideas or solutions from a single starting point or problem. It emphasizes exploring various possibilities, brainstorming, and considering different angles. Key features include fluency (generating many ideas), flexibility (generating different types of ideas), and originality (generating novel ideas). This process is essential when the goal is to explore a wide range of options rather than finding one specific answer.

Identifying the Process of Considering Various Solutions

The question specifically describes a situation where an individual "freely considers a variety of potential solutions." This directly aligns with the definition of **divergent thinking**. When faced with artistic, literary, scientific, or practical problems, engaging in divergent thinking allows for:

- Brainstorming numerous possibilities.
- Exploring unconventional approaches.
- Generating diverse ideas without immediate judgment.

For instance, when asked to think of uses for a brick, a person using divergent thinking might list uses like building a house, a paperweight, a weapon, a doorstop, a base for a sculpture, a heating element, etc. This contrasts sharply with convergent thinking, which might focus only on the primary use (building). Heuristic thinking might use a

shortcut like 'heavy object' to find a solution, while creative thinking encompasses the entire process, including divergent exploration.

Therefore, the cognitive process that involves freely considering a variety of potential solutions is **divergent thinking**.

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6. **Answer: c**

Explanation:

Defining Problem Solving Procedures

This question asks us to identify a specific type of **problem solving rule or procedure**. The key characteristic is that this method, when followed meticulously **step by step**, guarantees that a **correct solution** will be found.

Examining Problem Solving Methods

Let's explore the different approaches to problem-solving presented in the options:

- **Mental Set:** A mental set describes a tendency to persist in using strategies that have worked in the past, even when they might not be the most effective for the current problem. It's like being stuck in a rut. This approach doesn't necessarily lead to a **correct solution** and can sometimes hinder finding a better way.
- **Trial and Error:** This method involves trying different solutions randomly or systematically until one works. While it can eventually lead to a solution, it doesn't **assure** a **correct solution** in a predictable manner, and it can be very time-consuming and inefficient, especially for complex problems. It's not a defined **procedure** guaranteeing success.
- **Algorithm:** An **algorithm** is a well-defined, step-by-step computational **procedure** or formula for solving a specific class of problems. If an **algorithm** is followed correctly, it guarantees finding the correct solution. Examples include mathematical formulas like the quadratic formula to solve equations of the form $ax^2 + bx + c = 0$, or the steps to sort a list of numbers. The guarantee of a correct outcome upon correct execution is the defining feature.

- **Insight:** This refers to the sudden realization of a problem's solution, often occurring after a period of contemplation or when approaching the problem from a new perspective. It's a moment of understanding, not a systematic step-by-step **procedure**. While powerful, it's not a guaranteed or easily repeatable method.

Algorithm: The Guaranteed Solution Procedure

Comparing the options, an **algorithm** is the only method explicitly defined as a **problem solving rule or procedure** that, by its very nature, **assures** a **correct solution** when followed correctly, **step by step**. The other options describe cognitive tendencies or less reliable methods.

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7. **Answer: d**

Explanation:

Addressing Key Personnel Leave Requests When Work is Affected

This situation requires careful management to balance the needs of the employee with the operational requirements of the office. The core issue is managing a leave request from a **key person** whose absence would significantly affect **office work**. The goal is to find a solution that minimizes disruption while respecting the employee's situation.

Analysis of Options for Handling Subordinate Leave

- **Option 1: Refer his matter to your superior.** While escalating might be necessary in some cases, it's generally the manager's responsibility to handle immediate team issues like leave requests. Going straight to a superior bypasses direct management and problem-solving.
- **Option 2: Sanction the leave.** Simply approving the leave without considering the impact on work or discussing alternatives isn't ideal, especially given the employee is a **key person**. This approach prioritizes the leave request over the critical need for the employee's presence.

- **Option 3: Ask another person to do his work.** Assigning the work to someone else could be a solution, but it might overload another employee and doesn't address the potential reasons behind the leave request or explore if the key person can still attend to essential duties or adjust their leave timing.
- **Option 4: Meet him, discuss about the reason for leave and try to convince him the urgent need of his presence.** This is the most proactive and balanced approach. It involves direct communication to understand the employee's circumstances and explain the critical impact of their absence. This conversation might lead to finding a mutually agreeable solution, such as adjusting the leave dates or finding ways to mitigate the disruption. It respects the employee while emphasizing the operational needs.

Step-by-Step Rationale for the Best Approach

1. **Initiate a Discussion:** The first step is to have a private conversation with the subordinate. Understanding the *reason for leave* is crucial. Is it a planned vacation, a personal emergency, or something else?
2. **Explain the Impact:** Clearly communicate how the employee's absence as a *key person* affects the *office work*. Explain the specific tasks or projects that will be impacted and the consequences of this disruption.
3. **Explore Solutions Together:** Based on the discussion, work collaboratively towards a solution. This could involve:
    - Asking if the leave dates are flexible.
    - Exploring if the employee can complete critical tasks before leaving or attend to urgent matters remotely during the leave.
    - Discussing how the workload can be managed during their absence (potentially involving option 3, but after discussion).
4. **Decision Making:** After understanding the situation and discussing options, make an informed decision. If a resolution is found where the employee can take leave with minimal disruption, sanction it. If the need for their presence is absolutely critical and cannot be managed otherwise, further discussion or escalation might be needed, but the initial step is always direct communication.

This method prioritizes communication and collaboration, which are essential for effective management, especially when dealing with critical personnel and potential work interruptions. It shows consideration for the employee's needs while ensuring business continuity.

8. **Answer: b**

Explanation:

Analyzing Statements on Decision-Making

This explanation focuses on evaluating the accuracy of given statements related to the process of **decision-making**. We will look at each statement individually to determine its validity.

Statement 1: Decision-Making as Determining Action

The first statement asserts that decision-making is an act of **determining a course of action**. This aligns perfectly with the fundamental definition of decision-making. When we make a decision, we are essentially deciding on a specific path or action to take to address a problem or achieve a goal. For instance, choosing to invest in stocks is a decision that determines a course of action for one's finances. Thus, this statement is true.

Statement 2: Decision-Making as Choosing Alternatives

The second statement defines decision-making as **choosing one alternative from among various alternatives**. This highlights a critical element of decision-making: the presence of multiple options. If there were only one option, no decision would be necessary. The process involves identifying, evaluating, and comparing different alternatives before selecting the most appropriate one. For example, deciding which job offer to accept involves choosing from several employment alternatives. This statement accurately captures this aspect, making it true.

Statement 3: Decision-Making vs. Policy Making

The third statement suggests that decision-making is **synonymous with policy making**. While closely related, these two terms are not interchangeable. **Policy making** is a broader, often strategic process that involves establishing principles, rules, or guidelines for future actions and decisions. Decision-making, conversely, is the specific

act of selecting an option or course of action at a given time. A policy might guide numerous decisions, but the act of making a single decision isn't the same as formulating the overall policy. Therefore, this statement is false.

Summary of True Statements

Reviewing the analysis:

- Statement 1 is accurate because decision-making involves choosing how to act.
- Statement 2 is accurate because decision-making requires selecting from multiple options.
- Statement 3 is inaccurate because decision-making is a part of, but not identical to, policy making.

Based on this breakdown, the statements that are true about decision-making are 1 and 2.

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9. **Answer: c**

Explanation:

Analyzing Gopal's Cricket Match Seat Position

The question asks us to find the seat number where Ishita is sitting, based on a sequence of relative positions starting with Gopal.

Mapping the Seating Arrangement Step-by-Step

Let's break down the seating information provided:

- **Gopal's Seat:** Gopal is initially placed in seat number **253**.
- **Reena's Position:** Reena sits to the right of Gopal. Assuming seat numbers increase sequentially to the right, Reena is in seat $253 + 1$. So, Reena is in seat **254**.
- **Raman's Position:** Raman sits to the left of Gopal. Assuming seat numbers decrease sequentially to the left, Raman is in seat $253 - 1$. So, Raman is in seat **252**.

- **Ishita's Position:** Ishita sits in the seat to the left of Raman. This means Ishita's seat number is one less than Raman's seat number.

Calculating Ishita's Seat Number

We know Raman is in seat **252**.

Ishita is to the left of Raman.

To find Ishita's seat number, we subtract 1 from Raman's seat number:

$$\text{Ishita's Seat} = \text{Raman's Seat} - 1$$

$$\text{Ishita's Seat} = 252 - 1$$

$$\text{Ishita's Seat} = 251$$

Therefore, Ishita is sitting in seat number **251**.

Seat Order Confirmation

We can visualize the seating order around Gopal:

Seat Number	Person	Relative Position
251	Ishita	Left of Raman
252	Raman	Left of Gopal
253	Gopal	Reference Seat
254	Reena	Right of Gopal

The arrangement confirms that Ishita is in seat **251**.

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10. **Answer: c**

Explanation:

Identifying Language Proficiency for Each Individual

This problem requires us to carefully analyze the language skills of four individuals: Ananya, Krishna, Bulbul, and Archana, based on the given descriptions. We need to find the person who can both speak and follow English, Hindi, and Bengali.

Language Skills Summary Table

Person	English (Speak/Follow)	Hindi (Speak/Follow)	Bengali (Speak/Follow)
Ananya	Yes	Yes	Yes
Krishna	Yes	Unknown	No
Bulbul	Unknown	Yes	Unknown
Archana	Unknown	Yes	Yes

Step-by-Step Analysis of Language Abilities

Let's break down the information provided for each person:

- **Ananya's Language Skills:**
  - The text explicitly states Ananya can speak and follow **English**.
  - Ananya talks with Bulbul in **Hindi**. This implies Ananya can speak and follow Hindi.
  - Archana talks with Ananya in **Bengali**. This implies Ananya can speak and follow Bengali.
  - Therefore, Ananya can speak and follow English, Hindi, and Bengali.
- **Krishna's Language Skills:**
  - The text states Krishna can speak and follow **English**.
  - The text clearly states Krishna **cannot follow Bengali**.
  - Krishna's ability in Hindi is not mentioned.
  - Since Krishna cannot follow Bengali, they do not meet the criteria of knowing all three languages.
- **Bulbul's Language Skills:**

- Bulbul speaks and writes **Hindi**, and talks with Ananya in Hindi, confirming Hindi proficiency.
- Bulbul's ability in **English** is not mentioned.
- Bulbul's ability in **Bengali** is not mentioned (we only know Archana speaks Bengali with Ananya, not necessarily with Bulbul).
- Since Bulbul's English and Bengali skills are unknown, we cannot confirm they meet all criteria.

- **Archana's Language Skills:**
  - Archana speaks and writes **Hindi** (like Bulbul).
  - Archana talks with Ananya in **Bengali**, implying proficiency in Bengali.
  - Archana's ability in **English** is not mentioned.
  - Since Archana's English skills are not confirmed, they do not meet the criteria.

Conclusion on Combined Language Proficiency

Based on the detailed analysis:

- Ananya possesses confirmed skills in speaking and following English, Hindi, and Bengali.
- Krishna lacks Bengali proficiency.
- Bulbul's English and Bengali skills are not confirmed.
- Archana's English skills are not confirmed.

Therefore, the only individual confirmed to be able to speak and follow English, Hindi, and Bengali is Ananya.

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11. Answer: c

Explanation:

Calculating the Day of the Week for December 25th

The problem asks us to determine the day of the week for December 25th, given that May 25th of the same year falls on a Sunday. This involves calculating the total number of days between these two dates and using that to find the shift in the day of the week.

Step 1: Count the Days Between May 25th and December 25th

We need to sum the number of days from May 25th until December 25th. We'll count the remaining days in May and then the full days in the months that follow.

- **Days remaining in May:** May has 31 days. Since we start after May 25th, the remaining days are $31 - 25 = 6$ days.
- **Days in June:** 30 days
- **Days in July:** 31 days
- **Days in August:** 31 days
- **Days in September:** 30 days
- **Days in October:** 31 days
- **Days in November:** 30 days
- **Days in December:** We count up to December 25th, so this is 25 days.

Let's add these numbers together:

Total days = $6(\text{May}) + 30(\text{June}) + 31(\text{July}) + 31(\text{August}) + 30(\text{September}) + 31(\text{October}) + 30(\text{November}) + 25(\text{December})$

Total days = 214 days.

Step 2: Calculate the Day Shift Using Modulo 7

The days of the week follow a cycle of 7. To find out how many days the week shifts forward, we need to find the remainder when the total number of days (214) is divided by 7.

We perform the calculation:

$$\text{Number of weeks} = \frac{214}{7}$$

$$214 \div 7 = 30 \text{ with a remainder}$$

To find the remainder:

$$214 = (7 \times 30) + 4$$

The remainder is 4. This means that December 25th will occur 4 days after the day of the week of May 25th.

Step 3: Determine the Final Day of the Week

We know that May 25th is a Sunday.

We need to count 4 days forward from Sunday:

- Sunday + 1 day = Monday
- Sunday + 2 days = Tuesday
- Sunday + 3 days = Wednesday
- Sunday + 4 days = Thursday

Therefore, December 25th in that year will be a Thursday.

Final Answer Summary

By calculating the total number of days between May 25th and December 25th (which is 214 days) and finding the remainder when divided by 7 (which is 4), we determined that December 25th falls 4 days after Sunday, making it a Thursday.

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12. **Answer: c**

Explanation:

Understanding the Passage on Reading Habits

This question requires us to analyze a passage about the importance and effects of reading. The passage suggests different ways to approach books and discusses how reading, conversation ('conference'), and writing contribute to a person's knowledge and character. It also highlights the consequences of neglecting these activities.

Analyzing the Impact of Limited Reading

The passage specifically addresses what is required if a person engages in reading infrequently. It states: "if he reads little, he had need have much cunning to seem to know that he doth not." This sentence is key to answering the question. The phrase "much cunning to seem to know that he doth not" implies that someone who reads little needs to use cleverness or strategy to create the impression that they possess knowledge they actually lack.

Evaluating Options Based on Passage Context

Let's examine how each option relates to the passage's statement about reading little:

- **Option 1: He must pretend to have a good memory.**

  The passage links the need for a good memory to writing little ("if a man writes little, he had need have a good memory"). It does not connect needing a good memory to reading little.

- **Option 2: He must pretend to have a lot of intelligence.**

  While seeming knowledgeable might imply intelligence, the passage uses more specific language. The need for "cunning to seem to know" is about appearing knowledgeable, not necessarily intelligent in a general sense. Option 3 is a more direct interpretation.

- **Option 3: He must pretend to know a lot.**

  This option directly aligns with the passage's assertion that someone who reads little needs "much cunning to seem to know that he doth not." Pretending to know 'a lot' is the direct counteraction to knowing little and trying to hide that fact by seeming knowledgeable.

- **Option 4: He must pretend to be witty.**

  The passage mentions that poets make men witty. It associates "wit" with poetry, not with the consequences of reading little.

Detailed Breakdown of Reading Consequences

The passage provides a clear comparison for different levels of engagement in reading, conversation, and writing:

- If a person **writes little**, they need a **good memory**.
- If a person **converses little**, they need a **quick wit** ("present wit").
- If a person **reads little**, they need **cunning** to appear knowledgeable.

Therefore, the core requirement for someone who reads little is to use cleverness to give the impression of having knowledge they haven't acquired through reading.

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13. **Answer: a**

Explanation:

Understanding the Meaning of 'Conference' in the Passage

The question asks for the meaning of the term 'conference' as used in the provided passage. The passage contrasts three activities: reading, conference, and writing, stating their effects on a person: "Reading maketh a full man, conference a reading man, and writing an exact man." To understand what 'conference' means here, we need to look at its context within this sentence and the surrounding text.

Analyzing the Role of 'Conference'

The passage suggests that reading fills a person with knowledge, writing makes them precise, and 'conference' contributes to making a person a 'reading man'. This implies that 'conference' is an activity that enhances or relates to the process of reading and acquiring knowledge. The passage further notes that if someone "confers little, he had need have a present wit," suggesting that conferring involves active mental engagement, possibly through discussion or exchange of ideas.

Evaluating the Options

Let's examine the given options in light of this understanding:

- **Option 1: A meeting where conversation is important.** This option suggests interaction and discussion, which aligns well with the idea of enhancing one's understanding or becoming a 'reading man'. Conversation is central to many forms of conference that involve intellectual exchange.
- **Option 2: A gathering of people.** This is a very general definition. While a conference involves a gathering, simply gathering doesn't capture the specific intellectual or communicative aspect implied by the passage.
- **Option 3: A get together.** Similar to option 2, this term is too informal and broad. It doesn't necessarily imply the intellectual benefit described in the passage.
- **Option 4: A group of people assembled to hear a speaker.** This describes a lecture or presentation. While such events might involve a gathering, the passage's emphasis on 'conference' making someone a 'reading man' and requiring 'wit' suggests a more interactive process than just listening.

Conclusion on 'Conference'

Based on the passage's context, 'conference' seems to refer to an activity involving discourse or discussion that stimulates intellectual engagement and reinforces the benefits of reading. Option 1, describing a meeting where conversation is important, best captures this essence. It implies an active exchange of ideas, which fits the description of making someone a 'reading man' and requiring 'wit'. The other options are either too general or describe different types of gatherings that don't necessarily fit the specific meaning implied.

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14. **Answer: c**

Explanation:

Understanding the Meaning of 'Tasted Books'

The question asks to interpret the meaning of the phrase 'some books are to be tasted' based on the provided passage. The passage compares reading different types of books to different ways of consuming food. It states: "Some books are to be tasted others to be swallowed, and some few to be chewed and digested..." It then clarifies what these categories mean: "...that is, some books are to be read-only in parts, others

to be read, but not curiously; and some few to be read wholly and with diligence and attention."

From this explanation, we can directly link the act of 'tasting' a book to the action of being **'read-only in parts'**. This implies a less intensive reading style, perhaps for enjoyment or a quick overview, without deep engagement or thorough study.

Analyzing the Options Provided

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

- **Option 1:** "To be read with diligence and attention." The passage specifies that books needing 'diligence and attention' are those to be 'chewed and digested', not 'tasted'. Therefore, this option is incorrect.
- **Option 2:** "To be read but not curiously." This description corresponds to books meant 'to be swallowed' according to the passage. Hence, this option is also incorrect for 'tasted' books.
- **Option 3:** "To be read just for fun. To be read-only in parts." The passage explicitly defines 'tasted' books as those **'read-only in parts'**. Reading something only in parts often aligns with doing it 'just for fun' or casually, making this option consistent with the passage's meaning.
- **Option 4:** "All of the above." Since options 1 and 2 are incorrect interpretations of 'tasted books' based on the passage, this option cannot be correct.

Conclusion on 'Tasted Books'

Based on the direct comparison provided in the text, 'tasted' books are those that are meant to be read selectively or only in specific sections. Option 3 accurately reflects this meaning by stating they are **'read-only in parts'** and suggesting a casual approach ('just for fun').

---

15. **Answer: a**

Explanation:

Approaching 'Meaner' Sort of Books According to the Passage

This solution explains how to approach different types of books based on the provided passage. The core task is to identify the correct method for dealing with the 'meaner' sort of books as described by the author.

Passage Analysis: Classifying Books and Reading Methods

The passage distinguishes between different categories of books and suggests varied reading approaches:

- Some books are meant "to be tasted" (read only in parts).
- Others are "to be swallowed" (read through, but not deeply).
- A few are meant "to be chewed and digested" (read wholly with diligence and attention).

The passage further elaborates on these methods:

- Books "to be read-only in parts".
- Books "to be read, but not curiously".
- Books "to be read wholly and with diligence and attention".

Understanding the Approach for 'Meaner' Books

The passage explicitly addresses how to handle specific types of books, including the 'meaner' sort:

The text states: "Some books may also be read by deputy, and extracts made of them by others; but that would be only in the less important arguments and the **meaner sort of books**; else distilled books are like common distilled waters, flashy things."

This sentence directly links the method of reading "by deputy" and making "extracts made of them by others" specifically to the 'less important arguments' and the '**meaner sort of books**'. This means that for these less significant books, one can rely on summaries or selections prepared by someone else.

Evaluating the Options

- **Option 1: They are to be read by deputy and extracts made of them by others.** This option directly corresponds to the passage's instruction for the 'meaner sort of books'.
- **Option 2: They are to be read but not to contradict and confute.** While the passage advises reading "not to contradict and confute", this is a general reading principle, not specific to the 'meaner' sort of books.
- **Option 3: They are to be read but only in parts.** The passage mentions books "to be read-only in parts", but it doesn't associate this method with the 'meaner' sort.
- **Option 4: They are to be read but not curiously.** Similarly, reading "not curiously" is mentioned for a different category of books, not specifically the 'meaner' ones.

Conclusion

Based on the direct statement in the passage, the 'meaner' sort of books, considered less important, are those that can be "read by deputy, and extracts made of them by others".

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16. **Answer: b**

Explanation:

Reading Objectives Discussed in Passage

This section provides a detailed explanation of the real object of reading, as described in the provided text, and evaluates the given options to identify the correct one.

Passage Analysis: The Purpose of Reading

The passage emphasizes a thoughtful approach to reading, differentiating between various ways to engage with books. It explicitly advises against reading solely to argue or blindly accept information. Instead, the text states the core purpose: "Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider." This highlights that the primary goal is critical evaluation and thoughtful consideration of the material.

Evaluating the Options for the Real Object of Reading

Let's examine each option in light of the passage's instructions:

- **Option 1: Not to contradict and confute** - The passage mentions this as something reading should *not* be for. While avoiding contradiction is part of thoughtful reading, it's not presented as the main objective itself.
- **Option 2: To weigh and consider** - This directly matches the passage's concluding statement on the purpose of reading ("...but to weigh and consider."). It encapsulates the idea of critical engagement and thoughtful reflection.
- **Option 3: To distil the contents** - The passage critiques distilled books, calling them "flashy things," and suggests that distilling should only be done for less important arguments or books. This indicates it's not the recommended or "real" object of reading for significant works.
- **Option 4: To understand the author's point of view** - While understanding the author's perspective is often a result of reading, the passage frames the primary objective more actively as "weighing and considering," which implies a deeper, more critical engagement than just understanding. The passage focuses on the reader's action rather than just comprehension of the author's stance.

Conclusion on the Real Object of Reading

Based on the explicit wording within the passage, the most accurate description of the real object of reading is to engage critically with the text, which is best represented by the act of weighing and considering its content.

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17. **Answer: c**

Explanation:

Filling the Blank for Application Submission

This question involves choosing the correct preposition to complete a common English sentence used as a reminder for submitting an application.

Understanding the Sentence Context

The core message of the sentence is to remind someone about the importance of submitting their application within the appropriate timeframe.

The sentence structure is: `Please do not forget to submit your application ____ time.`

The blank needs a preposition that correctly links the action (submit your application) with the concept of time, specifically indicating punctuality or meeting a deadline.

Analyzing Preposition Options

We need to evaluate each given option to see which one fits the context best:

- **by**: The preposition 'by' often indicates a deadline (e.g., "submit by Friday"). While submitting applications is often deadline-driven, the phrase "submit by time" is less standard than "submit in time" when a specific deadline isn't stated.
- **of**: 'Of' usually shows possession or relationship. It doesn't grammatically or logically fit here. For example, "submit of time" is incorrect.
- **in**: The phrase 'in time' means within the allowed or necessary period; punctually; early enough. This fits the context of submitting an application before it is too late.
- **with**: 'With' typically indicates accompaniment or means. "Submit with time" is not a standard English phrase in this context.

Identifying the Correct Preposition

Based on standard English usage:

- The phrase **'in time'** correctly conveys the meaning of submitting the application punctually or before the deadline passes. It emphasizes meeting the required timeliness.
- While 'by' relates to deadlines, 'in time' is the idiomatic phrase used here to mean 'punctually' or 'before it's too late'.

Therefore, the preposition 'in' is the most suitable choice for this sentence.

Final Sentence Completion

The correctly completed sentence reads:

Please do not forget to submit your application in time.

---

18. **Answer: c**

Explanation:

Understanding the Idiom "Snake in the Grass"

Idioms are phrases where the words together have a meaning that is different from the dictionary definitions of the individual words. Understanding idioms is crucial for mastering the nuances of the English language.

The specific idiom in question is "**Snake in the grass**". We need to find the alternative that best explains its meaning.

Meaning of "Snake in the Grass"

A "**snake in the grass**" refers to a person who appears friendly or harmless but is actually treacherous and secretly intends to harm someone. It signifies hidden danger, betrayal, and deceit from someone unexpected.

- **Hidden Danger:** The 'snake' represents a threat.
- **Secrecy:** The 'in the grass' part emphasizes that the danger is hidden or concealed.
- **Betrayal:** It often implies that the threat comes from someone who is pretending to be an ally or friend.

Analyzing the Options

Let's examine each option to see how well it matches the meaning of "**snake in the grass**":

- **1. Cowardly and brutal**: While a snake might be perceived as dangerous, this option focuses on personality traits (cowardice, brutality) which are not the primary meaning of the idiom. The idiom emphasizes hidden treachery rather than overt brutality or cowardice.

- **2. An unreliable person**: This is partially related, as a treacherous person is indeed unreliable. However, "unreliable" is a broader term. A "snake in the grass" implies a more specific and malicious form of unreliability – active, hidden hostility and betrayal.
- **3. A hidden enemy**: This option perfectly captures the essence of the idiom. The 'snake' represents an 'enemy', and being 'in the grass' signifies that this enemy is hidden, concealed, and potentially dangerous precisely because their true nature is not apparent. This aligns with the idea of betrayal from an unexpected source.
- **4. Low and mean**: This describes someone's character as morally base or contemptible. While a "snake in the grass" might also be considered low and mean, these words don't specifically convey the core concept of hidden danger and secret enmity inherent in the idiom.

Conclusion

Based on the analysis, the phrase "**snake in the grass**" idiomatically refers to someone who poses a threat secretly. Therefore, "**A hidden enemy**" is the most accurate definition among the given choices.

---

19. **Answer: a**

Explanation:

This question tests the understanding of correct punctuation, specifically how to connect related clauses or phrases within a sentence. We need to find the option that properly joins the ideas about Rama and Hari.

Analyzing Punctuation Options

Let's examine each option to see how punctuation affects the clarity and grammatical correctness of the sentence:

- **Option 1: Rama received a fountain pen, Hari a watch.**
  - This option uses a comma to connect two parts of the sentence. The structure is: [Rama received a fountain pen], [Hari a watch].

    - The second part, "Hari a watch," implies the verb "received" from the first part. This is known as an **elliptical construction** where a word (the verb) is omitted but understood.
    - Using a comma in such cases, to link two parallel ideas where the verb is implied in the second part, is a common and accepted stylistic choice for conciseness. It links the two related actions smoothly.
- **Option 2: Rama received a fountain pen; Hari a watch.**
    - This option uses a semicolon (;). Typically, a semicolon is used to join two complete and independent clauses that are closely related.
    - An independent clause needs a subject and a verb. While "Rama received a fountain pen" is a complete clause, "Hari a watch" is not because it lacks the verb "received".
    - Therefore, using a semicolon here is generally considered incorrect because it's not connecting two full independent clauses.
- **Option 3: Rama received a fountain pen; Hari, a watch.**
    - This option uses a semicolon followed by a comma.
    - The comma after "Hari" is incorrect. "Hari" is the subject of the implied verb "received". A comma should not typically separate a subject from its verb or object unless there are other intervening elements or specific grammatical reasons, which don't apply here.
- **Option 4: Rama received a fountain pen, Hari, a watch.**
    - This option uses commas to separate "fountain pen," "Hari," and "a watch."
    - This punctuation makes the sentence seem like a list of items. However, the sentence describes two separate actions: Rama receiving a pen and Hari receiving a watch. It's not a simple list of items.
    - The structure "..., Hari, a watch" incorrectly sets off "Hari" and implies a list rather than a parallel action.

Correct Punctuation for Parallel Ideas

The sentence structure involves two parallel ideas: what Rama received and what Hari received. The verb "received" applies to both subjects, Rama and Hari. The most concise way to link these parallel ideas, when the verb is omitted in the second part, is often with a comma, as seen in Option 1. This creates a flowing sentence that clearly contrasts or parallels the two actions.

While other methods exist to punctuate such ideas (like using a conjunction "and" or separating into two sentences), Option 1 represents a grammatically acceptable and stylistically sound way to handle this specific structure among the choices provided.

Therefore, the correctly punctuated sentence is the one that uses the comma to link the two parallel, elliptical clauses.

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20. **Answer: d**

Explanation:

Converting Active to Passive Voice: Analyzing 'All his friends laughed at him.'

This question requires converting a sentence from the active voice to the passive voice. The original sentence is "All his friends laughed at him." We need to understand the structure of active and passive voice and apply the rules correctly.

Understanding Active vs. Passive Voice

In the **active voice**, the subject of the sentence performs the action. For example, in "The dog chased the ball," the subject (the dog) is doing the chasing.

In the **passive voice**, the subject of the sentence receives the action. The focus shifts to the action itself or the object being acted upon. The structure typically involves a form of the verb 'to be' followed by the past participle of the main verb, often with the performer of the action introduced by 'by'.

Steps for Active to Passive Conversion

To convert a sentence from active to passive voice, follow these steps:

- Identify the subject, verb, and object in the active sentence.
- Make the object of the active sentence the subject of the passive sentence.
- Change the main verb to its past participle form and add the appropriate tense of the verb 'to be'.

- Make the subject of the active sentence the object of the preposition 'by' (unless it's obvious or unimportant).

Analyzing the Sentence: 'All his friends laughed at him.'

Let's break down the original sentence:

- **Subject:** All his friends
- **Verb:** laughed (Simple Past Tense)
- **Object (of the preposition 'at'):** him. The phrase "laughed at" acts like a transitive verb phrase here.

Now, let's apply the conversion steps:

1. **Object becomes Subject:** The object "him" changes to the subject "He".
2. **Verb Transformation:** The verb is "laughed at" in the simple past tense.
    - The auxiliary verb 'to be' needs to be in the simple past tense. Since the new subject is "He" (singular), we use "was".
    - The main verb is "laughed". The past participle is also "laughed".
    - The preposition "at" stays with the verb.
    - So, the passive verb form is "was laughed at".
3. **Subject becomes Object of 'by':** The active subject "All his friends" becomes the object of the preposition "by", resulting in "by all his friends".

Combining these parts gives the passive sentence: **He was laughed at by all his friends.**

Evaluating the Provided Options

Let's check each option against our derived passive sentence:

- **Option 1: He laughed at all his friends.**

  This sentence is still in the active voice and changes the meaning by making "him" the subject and "friends" the object. It is incorrect.

- **Option 2: He laughs at all his friends.**

This is also active voice and uses the present tense ("laughs") instead of the required past tense. It is incorrect.

- **Option 3: He is laughed at by all his friends.**

  This sentence uses the passive structure but employs the present tense ("is laughed at"). The original sentence was in the past tense ("laughed"), so this option has the wrong tense. It is incorrect.

- **Option 4: He was laughed at by all his friends.**

  This option correctly transforms the object "him" into the subject "He". It uses the correct passive verb form "was laughed at", matching the simple past tense of the original sentence. It also correctly includes the original subject "All his friends" after "by". This matches our derived passive sentence exactly. It is correct.

---

21. **Answer: a**

Explanation:

- Decieve
- Believe
- Relieve
- Belief

Identifying Spelling Errors in English Words

This question asks us to identify the word that has been misspelled among the given options. Let's carefully examine the spelling of each word.

Analyzing Word Spellings

The Spelling of 'Believe'

'Believe' is a correctly spelled English word. It means to accept something as true or to have faith in someone or something. The spelling follows the common rule related to 'i' and 'e'.

The Spelling of 'Relieve'

'Relieve' is also spelled correctly. It means to cause pain, anxiety, or distress to become less severe, or to help someone by taking away something they do not want or need. This spelling also adheres to the standard 'i'/'e' rule.

The Spelling of 'Belief'

'Belief' is the correct spelling for the noun form, meaning conviction that something is true or exists. It is related to the verb 'believe' and is spelled correctly.

Correcting the Spelling of 'Decieve'

The word 'Decieve' is misspelled. The correct spelling is **Deceive**. This word means to deliberately cause someone to believe something that is not true. The common mistake here is swapping the 'e' and 'i'.

Understanding the 'I before E' Spelling Rule

English spelling can be tricky, especially with words containing 'ie' or 'ei'. A common guideline is the "i before e" rule:

- Generally, the letters 'i' and 'e' appear in that order (like in *believe*, *relieve*).
- However, there's a crucial exception: when the letters follow 'c', the order is usually reversed ('e' before 'i') (like in *deceive*, *receive*, *conceive*).

The word 'Decieve' breaks this rule because it follows 'c', and the spelling should be 'Deceive' (e before i).

Conclusion on Misspelled Word

Based on the standard English spelling rules, particularly the "i before e except after c" guideline, 'Decieve' is the correctly identified misspelled word. The correct spelling is 'Deceive'.

---

22. Answer: a

Explanation:

Defining "Absence of Knowledge"

The question asks us to identify the correct term for the phrase **"Absence of knowledge"**. This means we need to find the word that signifies a lack of knowing or understanding about something. We will look at the meaning of each provided option to determine the best fit.

Meaning of Each Option

Here's a breakdown of the definitions for the given options:

- **Nescience**: This word comes from the Latin words 'ne' (meaning 'not') and 'scire' (meaning 'to know'). Thus, **Nescience** directly translates to the lack of knowledge or ignorance.
- **Insipient**: This term describes something that is just starting to exist or develop. It relates to the beginning or inception of something, not a lack of knowledge.
- **Presence**: This word means the state of being somewhere or existing. It is the opposite of absence.
- **Omniscience**: Derived from Latin 'omni-' (meaning 'all') and 'scire' (meaning 'to know'), **Omniscience** refers to having complete or unlimited knowledge; knowing everything. This is contrary to an absence of knowledge.

Connecting Definitions to "Absence of Knowledge"

Let's see how each option relates to the core meaning of **"Absence of knowledge"**:

- **Nescience** perfectly matches the definition as it means ignorance or the lack of knowledge.
- **Insipient** refers to beginnings, which is unrelated to the absence of knowledge.
- **Presence** is the opposite concept, indicating existence rather than absence.
- **Omniscience** signifies knowing everything, the exact opposite of lacking knowledge.

Conclusion

By understanding the meaning of each term, it becomes clear that **Nescience** is the word that accurately represents the concept of **"Absence of knowledge"**.

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23. **Answer: b**

Explanation:

Identifying the Antonym for the Word CHEAP

This explanation focuses on finding the word that has the opposite meaning to the term **CHEAP** from the given options.

Understanding Antonyms

An antonym is a word that means the opposite of another word. To find the antonym for **CHEAP**, we need to understand its meaning and then look for a word among the options that signifies the reverse concept.

Meaning of CHEAP

The word **CHEAP** typically refers to something that has a low price or cost. It can also sometimes imply low quality, but in the context of price, it means inexpensive.

Analyzing the Options

Let's examine the meaning of each provided option to determine which one is the opposite of **CHEAP**:

- **Mean:** The word 'Mean' can have several meanings. It can refer to the average in mathematics, or it can mean unkind or unpleasant in nature. Neither of these meanings is the opposite of **CHEAP**.
- **Expensive:** The word **Expensive** refers to something that has a very high price or costs a lot of money. This is the direct opposite of something that is **CHEAP** (low-priced).
- **Expansive: Expansive** means covering or able to cover a wide area, or wide-ranging. It does not relate to the price or cost of something and is therefore not

the opposite of **CHEAP**.

- **Ordinary: Ordinary** means common, usual, or not special. While something **CHEAP** might sometimes be considered ordinary, 'ordinary' is not the direct opposite in terms of price.

Determining the Opposite Word

Comparing the meanings, the word **Expensive** clearly stands out as the direct opposite of **CHEAP** when considering the primary meaning related to price. If something is not **CHEAP**, it is typically considered **Expensive**.

---

24. Answer: d

Explanation:

Understanding Sentence Transformation

The task is to transform the sentence "You are as big a fool as a donkey." into an equivalent statement from the given options. The original sentence uses the structure "as adjective as" to express equality between the subject ('You') and the object ('a donkey') in terms of the characteristic described ('big a fool').

Analyzing the Original Sentence Structure

The sentence "You are as big a fool as a donkey" implies:

- Your level of foolishness is the same as a donkey's level of foolishness.
- Neither you nor the donkey is more foolish than the other.

Mathematically, if we denote your foolishness as F_{You} and a donkey's foolishness as F_{Donkey}, the sentence states: $F_{You} = F_{Donkey}$.

Evaluating the Transformation Options

Let's examine each option to see which one preserves the original meaning of equality:

Option 1 Analysis: "A donkey is not as foolish as you."

This sentence implies that a donkey's foolishness is less than yours ($F_{Donkey} < F_{You}$). This contradicts the original statement of equality.

Option 2 Analysis: "A donkey is not as big a fool as you."

Similar to Option 1, this implies that a donkey is less of a big fool than you are ($F_{Donkey} < F_{You}$). This also contradicts the original meaning.

Option 3 Analysis: "A donkey is not more foolish as you."

This sentence is grammatically incorrect because it uses "as" instead of "than" after the comparative "more foolish". If corrected to "A donkey is not more foolish than you," it would mean $F_{Donkey} \leq F_{You}$. While this is consistent with equality ($F_{Donkey} = F_{You}$), the grammatical error makes it unsuitable. Furthermore, the original sentence specifically uses "big a fool," making "bigger fool" a more direct comparison.

Option 4 Analysis: "A donkey is not a bigger fool than you."

This statement implies that a donkey's foolishness is not greater than yours. In other words, $F_{Donkey} \leq F_{You}$. This is logically equivalent to the original statement ($F_{You} = F_{Donkey}$), as equality means neither is greater than the other. The use of "bigger fool" directly relates to the original phrase "big a fool". This option correctly transforms the sentence while maintaining grammatical accuracy and the original meaning.

Conclusion on Sentence Equivalence

The original sentence establishes an equal level of foolishness between "you" and "a donkey". Option 4, "A donkey is not a bigger fool than you," accurately reflects this equality by stating that the donkey does not surpass you in foolishness. This is a standard way to rephrase "as...as" comparisons into a negative comparative form.

---

25. Answer: c

Explanation:

Understanding Direct and Indirect Speech Conversion

Direct speech involves quoting someone's exact words, usually enclosed in quotation marks. Indirect speech, also known as reported speech, conveys the meaning of what someone said without quoting their exact words. Converting between these two forms requires specific grammatical changes, particularly concerning pronouns, verb tenses, and time/place expressions.

Analyzing the Original Sentence

The sentence we need to convert is in direct speech:

Radha said, "I am well."

Let's break down the components:

- **Reporting Verb:** "said". This verb is in the past tense. This is crucial because it dictates tense changes in the reported clause.
- **Pronoun in Direct Speech:** "I". This is a first-person pronoun, referring to the speaker (Radha).
- **Reported Clause:** "I am well." This is what Radha actually said.
- **Verb in Reported Clause:** "am". This is the present tense form of the verb 'to be'.

Rules for Conversion to Indirect Speech

When the reporting verb (like "said", "told", "asked") is in the past tense, the following changes generally occur in the reported clause:

- **Pronoun Change:** Pronouns shift to reflect the third-person perspective. The first person ("I", "we") usually changes to the third person ("he", "she", "they"). Since "I" refers to Radha, it changes to "she".
- **Tense Backshift:** The verb tense in the reported clause shifts one step back into the past.
  - Present Simple → Past Simple
  - Present Continuous → Past Continuous
  - Present Perfect → Past Perfect

    - Past Simple → Past Perfect
    - Will → Would
    - Can → Could

  In this specific sentence, the verb "am" (Present Simple of 'to be') needs to change to its Past Simple form, which is "was". So, the rule applied here is: `am/is → was`.
- **Conjunction:** The conjunction "that" is typically used to connect the reporting verb to the reported clause, especially for statements.
- **Other Changes:** Words indicating time and place (like "now", "today", "here") also change (e.g., "now" becomes "then", "today" becomes "that day"). This is not applicable to the given sentence.

Applying the Rules to Radha's Sentence

Let's convert the sentence step-by-step:

1. Start with the reporting clause: `Radha said`
2. Add the conjunction 'that': `Radha said that`
3. Change the pronoun "I" to "she": `Radha said that she`
4. Shift the tense of the verb "am" to "was": `Radha said that she was`
5. Add the remaining part of the sentence: `well`

Combining these steps gives the indirect speech version: **Radha said that she was well.**

Evaluating the Given Options

Now, let's compare our derived sentence with the options provided:

- **Option 1:** Radha said that I am well.
  This is incorrect because the pronoun "I" was not changed to "she", and the verb tense "am" was not shifted to "was".
- **Option 2:** Radha said that she is well.
  This is incorrect because although the pronoun "she" is correct, the verb tense "is" should have been shifted back to the past tense "was" since the reporting verb "said" is in the past.
- **Option 3:** Radha said that she was well.
  This option correctly changes the pronoun "I" to "she" and shifts the verb "am" to

its past tense form "was". This matches our derived sentence.

- **Option 4:** Radha said that she should be well.
  This is incorrect because the modal verb "should" has been introduced, which is not part of the original statement or the standard conversion rules for this type of sentence.

Final Conclusion on Speech Conversion

The process of changing direct speech to indirect speech requires careful attention to pronoun shifts and tense backshifts when the reporting verb is in the past. Applying these rules correctly to "Radha said, 'I am well.'" results in "Radha said that she was well."

---

26. **Answer: c**

Explanation:

Identifying the Part of Speech for 'before'

This solution explains the grammatical function of the word '**before**' in the given sentence and identifies its correct part of speech.

Sentence Analysis: "It will be five years before we meet again."

The sentence contains two distinct parts (clauses):

- "It will be five years" - This is the main or independent clause.
- "we meet again" - This is a dependent or subordinate clause.

The word '**before**' connects these two clauses. It establishes a time relationship, indicating that the five-year period will end prior to the event described in the second clause (meeting again).

Understanding Parts of Speech

Let's review the definitions of the options provided:

- **Preposition**: A word that connects a noun or pronoun to another word in the sentence, often showing location, direction, or time. Prepositions are typically followed by a noun phrase (e.g., "before the deadline").
- **Adverb**: A word that modifies a verb, adjective, or another adverb. It often answers questions like how, when, where, or why (e.g., "He arrived later").
- **Conjunction**: A word that joins words, phrases, or clauses. Subordinating conjunctions (like 'before', 'after', 'when', 'because') connect a dependent clause to an independent clause.
- **Adjective**: A word that describes or modifies a noun or pronoun (e.g., "a long time").

Role of the Underlined Word 'before'

In the sentence "It will be five years **before** we meet again," the word '**before**' serves a specific grammatical purpose:

- It introduces the subordinate clause "we meet again".
- It links this subordinate clause to the main clause "It will be five years".
- It functions as a connector indicating time sequence.

Because '**before**' connects two clauses and introduces a subordinate one, it fits the definition of a subordinating **conjunction**.

Evaluating Other Options

- **Preposition**: 'Before' can be a preposition, but usually when followed by a noun or pronoun (e.g., "We met *before* lunch"). In this sentence, it's followed by a clause ('we meet again'), not just a noun phrase, making 'conjunction' more appropriate.
- **Adverb**: 'Before' can function as an adverb (e.g., "I have never seen this before"), but here it's connecting clauses, not just modifying a verb.
- **Adjective**: 'Before' does not describe any noun or pronoun in the sentence, so it cannot be an adjective.

Conclusion

Based on its function of connecting the main clause ("It will be five years") and the subordinate clause ("we meet again") while indicating a time relationship, the underlined word '**before**' is correctly identified as a **conjunction**.

27. **Answer: b**

Explanation:

गद्यांश में अनुपस्थित शब्द की पहचान

यह समाधान दिए गए हिंदी गद्यांश के विश्लेषण पर आधारित है। हमारा उद्देश्य यह निर्धारित करना है कि प्रस्तुत विकल्पों में से कौन सा शब्द गद्यांश में प्रयोग नहीं किया गया है। इसके लिए, हम गद्यांश के मुख्य विचारों और उसमें इस्तेमाल किए गए शब्दों पर ध्यान केंद्रित करेंगे, विशेषकर उन शब्दों से संबंधित जो राष्ट्रीयता और कर्तव्य की भावना व्यक्त करते हैं।

गद्यांश का विश्लेषण: राष्ट्रप्रेम और कर्तव्य

गद्यांश राष्ट्रीय गौरव, देशभक्ति और राष्ट्र के प्रति व्यक्तिगत जिम्मेदारियों के महत्व पर प्रकाश डालता है। इसमें बताया गया है कि प्रत्येक नागरिक के मन में अपने देश, उसकी संस्कृति और भाषा के प्रति स्वाभाविक प्रेम और गर्व होता है। एक सच्चा देशभक्त अपने राष्ट्र, जन्मभूमि और राष्ट्रभाषा के लिए **प्राणों का उत्सर्ग** करने के लिए हमेशा तैयार रहता है। गद्यांश यह भी चेतावनी देता है कि जिन देशों के लोगों में यह **उत्सर्ग** की भावना नहीं होती, वे देश पराधीनता की बेड़ियों में जकड़ जाते हैं और अपनी सुख-शांति व समृद्धि हमेशा के लिए खो देते हैं। राष्ट्र का महत्व **देशभक्ति** और **सार्वजानिक हित** के बिना संभव नहीं है। यह भावना व्यक्ति को प्रेरित करती है कि वह अन्याय के विरुद्ध आवाज उठाए, निर्बलों की रक्षा करे, **धर्म** (सही रास्ते) पर अडिग रहे, न्याय के लिए संघर्ष करे, समाज को **हानि** पहुँचाकर अनुचित लाभ प्राप्त करने से बचे और अपने सामाजिक कर्तव्यों से मुंह न मोड़े।

विकल्पों की गद्यांश में उपस्थिति का मूल्यांकन

अब हम दिए गए विकल्पों की गद्यांश में उपस्थिति की जाँच करेंगे:

- **उत्सर्ग:** गद्यांश में यह शब्द मौजूद है। उदाहरण के लिए, "प्राणों का **उत्सर्ग**" और "**उत्सर्ग** भावना" जैसे वाक्यांशों में इसका उपयोग किया गया है।
- **अधर्म:** गद्यांश में **अन्याय**, **अनुचित्य** (अनुचित बात) को रोकने और **धर्म** (सही रास्ते) पर चलने की बात कही गई है, लेकिन '**अधर्म**' शब्द का सीधा प्रयोग गद्यांश में नहीं किया गया है।
- **भक्ति:** गद्यांश में '**देशभक्ति**' शब्द का स्पष्ट रूप से उल्लेख है, जो '**भक्ति**' का एक रूप है।
- **हानि:** गद्यांश में "समाज को **हानि** पहुँचाकर" वाक्य में इस शब्द का प्रयोग किया गया है।

सही उत्तर का विस्तृत स्पष्टीकरण

गद्यांश के गहन अध्ययन से यह स्पष्ट होता है कि '**उत्सर्ग**', '**भक्ति**' (जैसा कि '**देशभक्ति**' में प्रयुक्त है), और '**हानि**' शब्द गद्यांश में पाए जाते हैं। हालांकि, '**अधर्म**' शब्द का गद्यांश में कहीं भी प्रत्यक्ष रूप से प्रयोग नहीं किया गया है। गद्यांश भले ही अन्याय और गलत कामों के विरुद्ध लड़ने की प्रेरणा देता है, पर वह विशेष रूप से '**अधर्म**' शब्द का उपयोग नहीं करता। इसलिए, जो शब्द गद्यांश में प्रयुक्त नहीं हुआ है, वह '**अधर्म**' है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह निष्कर्ष निकाला जा सकता है कि दिए गए विकल्पों में से '**अधर्म**' वह शब्द है जिसका प्रयोग मूल गद्यांश में नहीं किया गया है। अन्य सभी विकल्प (**उत्सर्ग**, **भक्ति**, **हानि**) गद्यांश में मौजूद हैं।

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28. Answer: a

Explanation:

पराधीन राष्ट्र के खो जाने वाले तत्व का विश्लेषण

गद्यांश का सार: राष्ट्रीय अभिमान और उसके परिणाम

यह गद्यांश राष्ट्रीयता, देश प्रेम और सांस्कृतिक गौरव के महत्व पर प्रकाश डालता है। लेखक बताते हैं कि प्रत्येक सच्चे देशभक्त के मन में अपने देश, उसकी संस्कृति और भाषा के प्रति स्वाभाविक प्रेम और गर्व होता है। एक सच्चा राष्ट्रवादी अपने राष्ट्र, जन्मभूमि और राष्ट्रभाषा के लिए बलिदान देने को हमेशा तैयार रहता है।

इसके विपरीत, जिस राष्ट्र के लोगों में यह बलिदान की भावना (**उत्सर्ग भावना**) नहीं होती, वह राष्ट्र **पराधीन** (दूसरे के अधीन) हो जाता है। लेखक स्पष्ट रूप से उल्लेख करते हैं कि ऐसा पराधीन राष्ट्र अपनी **सुख-शांति और समृद्धि** हमेशा के लिए खो देता है। गद्यांश यह भी बताता है कि देशभक्ति और सार्वजनिक हित के बिना राष्ट्र का महत्व नहीं हो सकता। यह भावना नागरिकों को अन्याय के विरुद्ध लड़ने, दुर्बलों की रक्षा करने और समाज के प्रति अपने कर्तव्यों का ईमानदारी से निर्वहन करने के लिए प्रेरित करती है।

प्रश्न के संदर्भ में विकल्पों का विश्लेषण

प्रश्न पूछता है कि **पराधीन राष्ट्र** क्या खो बैठता है। आइए गद्यांश के आधार पर दिए गए विकल्पों की जांच करें:

- **1. अपनी समृद्धि:** गद्यांश स्पष्ट रूप से कहता है कि पराधीन राष्ट्र "अपनी सुख-शान्ति और **समृद्धि** सदा के लिए खो बैठता है"। यह कथन सीधे तौर पर गद्यांश से मेल खाता है।
- **2. अपनी भाषा:** गद्यांश में देश की भाषा के प्रति प्रेम का उल्लेख है, लेकिन यह नहीं कहा गया है कि पराधीन होने पर राष्ट्र अपनी भाषा खो देता है।
- **3. अपनी उत्सर्ग भाषा:** यह विकल्प व्याकरण की दृष्टि से सही नहीं लगता और गद्यांश में वर्णित किसी भी हानि से सीधे तौर पर संबंधित नहीं है। 'उत्सर्ग भाषा' जैसा कोई भाव गद्यांश में नहीं है।
- **4. अपनी न्याय चेतना:** गद्यांश न्याय के लिए लड़ने की बात करता है, लेकिन यह नहीं बताता कि पराधीन होने पर राष्ट्र अपनी न्याय चेतना खो देता है।

निष्कर्ष: पराधीनता का परिणाम

गद्यांश के अनुसार, राष्ट्र के लोगों में जब **उत्सर्ग भावना** (बलिदान की भावना) का अभाव होता है, तो वह राष्ट्र **पराधीन** हो जाता है। ऐसी स्थिति में, वह राष्ट्र अपनी **सुख-शांति और समृद्धि** को स्थायी रूप से खो देता है। इसलिए, दिए गए विकल्पों में से 'अपनी समृद्धि' वह तत्व है जिसे एक पराधीन राष्ट्र खो बैठता है, जैसा कि गद्यांश में स्पष्ट रूप से बताया गया है।

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29. **Answer: b**

Explanation:

गद्यांश का शीर्षक समझना

यह प्रश्न दिए गए हिंदी गद्यांश के मुख्य विषय या केंद्रीय भाव को पहचानकर उसका सबसे उपयुक्त शीर्षक चुनने के बारे में है। हमें गद्यांश को ध्यान से पढ़कर यह समझना होगा कि लेखक किन विचारों पर सबसे ज़्यादा ज़ोर दे रहा है।

गद्यांश का विश्लेषण

गद्यांश राष्ट्रवाद, देश के प्रति प्रेम, संस्कृति और भाषा के प्रति सम्मान, और देश के लिए बलिदान देने की भावना पर केंद्रित है। इसमें कहा गया है कि:

- प्रत्येक देशभक्त व्यक्ति में अपने देश, संस्कृति और भाषा के प्रति स्वाभाविक प्रेम और गर्व होता है।
- ऐसा व्यक्ति अपने राष्ट्र और भाषा के लिए बलिदान देने को हमेशा तैयार रहता है।
- जिस राष्ट्र के लोगों में बलिदान की यह भावना नहीं होती, वह राष्ट्र अपनी स्वतंत्रता, सुख-शांति और समृद्धि खो देता है।
- देशभक्ति और सार्वजनिक हित के बिना राष्ट्र का महत्व नहीं हो सकता।

- देशभक्ति व्यक्ति को अन्याय के खिलाफ लड़ने, दुर्बलों की रक्षा करने, सही सिद्धांतों पर चलने और न्याय के लिए संघर्ष करने के लिए प्रेरित करती है।
- यह व्यक्ति को समाज को नुकसान पहुँचाकर अनुचित लाभ उठाने से और अपने सामाजिक कर्तव्यों से मुँह मोड़ने से रोकती है।

पूरा गद्यांश मुख्य रूप से 'राष्ट्राभिमान' यानी देश के प्रति गर्व और प्रेम की भावना के महत्व को दर्शाता है। यह भावना ही व्यक्ति को देश के प्रति कर्तव्यों का पालन करने और आवश्यकता पड़ने पर बलिदान देने के लिए प्रेरित करती है।

विकल्पों का मूल्यांकन

आइए अब दिए गए विकल्पों का मूल्यांकन गद्यांश के केंद्रीय भाव के आधार पर करें:

- **राष्ट्रीय महत्तव (National Importance):** गद्यांश में राष्ट्रीय महत्व का उल्लेख है, लेकिन यह राष्ट्रभक्ति के परिणाम के रूप में आता है, न कि मुख्य विषय के रूप में।
- **राष्ट्राभिमान (Patriotism/National Pride):** यह विकल्प गद्यांश के मूल भाव को पूरी तरह से समाहित करता है। गद्यांश देश के प्रति प्रेम, गर्व, सम्मान और बलिदान की भावना पर केंद्रित है, जो सभी 'राष्ट्राभिमान' के अंतर्गत आते हैं।
- **के प्रति कर्तव्य (Duty towards):** हालाँकि गद्यांश में देश के प्रति कर्तव्यों की बात कही गई है, लेकिन यह कर्तव्य 'राष्ट्राभिमान' की भावना से ही उत्पन्न होते हैं। इसलिए, 'कर्तव्य' स्वयं मुख्य शीर्षक नहीं हो सकता।
- **राष्ट्र की सुख-शांति (Nation's Peace and Prosperity):** राष्ट्र की सुख-शांति का उल्लेख एक परिणाम के तौर पर किया गया है, यह बताने के लिए कि राष्ट्रभक्ति के बिना यह कैसे खो जाती है। यह गद्यांश का मुख्य विषय नहीं है।

निष्कर्ष

गद्यांश के पूरे पाठ का विश्लेषण करने पर यह स्पष्ट होता है कि इसका मुख्य विषय 'राष्ट्राभिमान' है, क्योंकि इसमें देश के प्रति प्रेम, गर्व, सम्मान और बलिदान की भावना पर सबसे अधिक ज़ोर दिया गया है। यही वह केंद्रीय विचार है जो गद्यांश के सभी पहलुओं को जोड़ता है।

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30. **Answer: c**

Explanation:

राष्ट्राभिमानी का अभिमान

यह प्रश्न गद्यांश पर आधारित है और पूछता है कि एक राष्ट्राभिमानी व्यक्ति अपने हृदय में किसके प्रति अभिमान महसूस करता है। गद्यांश का विश्लेषण करने पर, हम उस भावना को समझ सकते हैं जो देश के प्रति प्रेम और गर्व से जुड़ी है।

गद्यांश का विश्लेषण

गद्यांश में स्पष्ट रूप से कहा गया है:

- "प्रत्येक राष्ट्राभिमानी के हृदय में अपने देश, अपने देश की संस्कृति तथा भाषा के प्रति प्रेम और अभिमान सहज ही होता है।"
- यह पंक्ति सीधे तौर पर बताती है कि राष्ट्राभिमानी व्यक्ति को अपने **देश**, **संस्कृति** और **भाषा** पर गर्व होता है।
- गद्यांश आगे बताता है कि ऐसा व्यक्ति अपनी राष्ट्रभाषा के लिए प्राण देने को भी तैयार रहता है।

विकल्पों का मूल्यांकन

आइए दिए गए विकल्पों का गद्यांश के आधार पर मूल्यांकन करें:

- **विकल्प 1: देश की समृधि के लिए** - गद्यांश समृद्धि खोने का उल्लेख करता है यदि देशभक्ति न हो, लेकिन यह नहीं कहता कि समृद्धि के लिए अभिमान होता है।
- **विकल्प 2: देश की सुख शांति के लिए** - गद्यांश सुख-शांति खोने का उल्लेख करता है, लेकिन सुख-शांति के लिए अभिमान होने का सीधा उल्लेख नहीं है।
- **विकल्प 3: देश की भाषा के लिए** - गद्यांश स्पष्ट रूप से कहता है कि राष्ट्राभिमानी को देश की **भाषा** के प्रति अभिमान होता है। यह गद्यांश की जानकारी से सीधे मेल खाता है।
- **विकल्प 4: देश की महत्ता की लिये** - गद्यांश बताता है कि देशभक्ति के बिना राष्ट्रीय महत्व नहीं रह सकता, लेकिन यह नहीं बताता कि महत्व के लिए अभिमान होता है।

निष्कर्ष

गद्यांश के अनुसार, एक राष्ट्राभिमानी व्यक्ति को अपने देश, अपनी संस्कृति और विशेष रूप से अपनी **भाषा** पर गर्व होता है। इसलिए, विकल्प 3 गद्यांश में दी गई जानकारी के आधार पर सबसे उपयुक्त उत्तर है।

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31. Answer: a

Explanation:

देशभक्ति का अर्थ और प्रेरणा

यह गद्यांश राष्ट्रीय गौरव और देशभक्ति के महत्व पर जोर देता है। गद्यांश के अनुसार, प्रत्येक नागरिक के हृदय में अपने देश, संस्कृति और भाषा के प्रति स्वाभाविक प्रेम और गर्व होना चाहिए। एक सच्चा देशभक्त अपने राष्ट्र, जन्मभूमि और राष्ट्रभाषा के लिए आत्म-बलिदान करने को भी तैयार रहता है। यदि किसी राष्ट्र के लोगों में यह बलिदान की भावना नहीं होती, तो वह राष्ट्र अपनी स्वतंत्रता, सुख-शांति और समृद्धि खो देता है और पराधीन हो जाता है। गद्यांश यह भी स्पष्ट करता है कि देशभक्ति के बिना राष्ट्रीय महत्व का कोई अस्तित्व नहीं रह सकता।

देशभक्ति द्वारा प्रेरित कार्य

गद्यांश में बताया गया है कि देशभक्ति की भावना व्यक्ति को निम्नलिखित कार्यों के लिए प्रेरित करती है:

- अन्याय से दुर्बलों की रक्षा करना।
- अनुचित या गलत कार्यों (अनौचित्य) को दूर करना।
- धर्म के मार्ग पर स्थिर रहना।
- न्याय के लिए संघर्ष करना।
- समाज को नुकसान पहुँचाकर अनुचित लाभ प्राप्त करने से बचना।
- अपने समाज के प्रति अपने कर्तव्यों से मुँह न मोड़ना और न ही उसे धोखा देना।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का गद्यांश के आधार पर विश्लेषण करें:

- **विकल्प 1: अनौचित्य का निवारण करने के लिए**
  गद्यांश स्पष्ट रूप से कहता है कि देशभक्ति व्यक्ति को "अनौचित्य का निवारण करे" के लिए प्रेरित करती है। यह गद्यांश के कथन से पूरी तरह मेल खाता है।
- **विकल्प 2: अन्याय हेतु लड़ने के लिए**
  गद्यांश "अन्याय से दुर्बलों की रक्षा" करने की बात करता है, न कि "अन्याय हेतु लड़ने" की। यह विकल्प गद्यांश के आशय के विपरीत है।
- **विकल्प 3: अनुचित लाभ हेतु लड़ने के लिए**
  गद्यांश इसके बिल्कुल विपरीत कहता है कि देशभक्त को "समाज को हानि पहुँचाकर अनुचित लाभ उठाना एकदम अस्वीकार कर दे"। इसलिए, यह विकल्प गलत है।
- **विकल्प 4: पराधीनता के लिए युद्ध करने के लिए**
  गद्यांश बताता है कि देशभक्ति की कमी राष्ट्र को पराधीन बना देती है। देशभक्ति पराधीनता से लड़ने की प्रेरणा देती है, न कि पराधीनता के लिए युद्ध करने की। यह विकल्प गद्यांश के विपरीत है।

निष्कर्ष

गद्यांश के विस्तृत विश्लेषण के आधार पर, यह स्पष्ट है कि देशभक्ति व्यक्ति को **अनौचित्य का निवारण करने के लिए** प्रेरित करती है। यह विकल्प गद्यांश में वर्णित देशभक्ति के कार्यों से सीधे तौर पर संबंधित है।

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32. **Answer: c**

Explanation:

एषणा का अर्थ समझना

'एषणा' शब्द का हिंदी में अर्थ किसी चीज़ के लिए तीव्र इच्छा, चाह या कामना होता है। यह किसी वस्तु, स्थिति या प्राप्ति के प्रति मन की लालसा को दर्शाता है। इसे अंग्रेजी में 'desire', 'longing', या 'wish' के समान समझा जा सकता है। यह किसी भी प्रकार की चाहत हो सकती है, जैसे पुत्रेषणा (पुत्र की इच्छा), वित्तैषणा (धन की इच्छा), या लोकैषणा (लोक की इच्छा)।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों को 'एषणा' के अर्थ के संदर्भ में देखें ताकि सही उत्तर की पहचान की जा सके:

विकल्प	हिंदी अर्थ	'एषणा' से संबंध
1. घृणा	किसी के प्रति तीव्र नापसंदगी या नफरत।	'घृणा' का अर्थ 'एषणा' (इच्छा) के बिल्कुल विपरीत है। यह किसी चीज़ को चाहने के बजाय उससे दूर रहने की भावना है।
2. अनिच्छा	किसी कार्य या वस्तु के प्रति इच्छा न होना, मन न होना।	'अनिच्छा' भी 'एषणा' के विपरीत है, क्योंकि 'एषणा' किसी चीज़ की चाहत है, जबकि 'अनिच्छा' चाहत की कमी या विरक्ति को दर्शाती है।
3. अभिलाषा	तीव्र इच्छा, चाह, कामना, आकांक्षा या उमंग।	'अभिलाषा' शब्द 'एषणा' का एक सटीक पर्यायवाची है। दोनों का मतलब किसी चीज़ को पाने की प्रबल इच्छा रखना है।
4. उपयुक्त में से कोई नही	दिए गए विकल्पों में से कोई भी सही अर्थ नहीं है।	चूंकि विकल्प 3 ('अभिलाषा') 'एषणा' का सही अर्थ बताता है, इसलिए यह विकल्प सही नहीं है।

सही उत्तर का निर्धारण

'एषणा' शब्द का गहन विश्लेषण और दिए गए विकल्पों की तुलना करने पर यह स्पष्ट होता है कि 'अभिलाषा' ही वह शब्द है जो 'एषणा' के अर्थ को पूरी तरह से व्यक्त करता है। दोनों शब्दों का मूल भाव किसी वस्तु या लक्ष्य के प्रति तीव्र चाहत या इच्छा रखना है। इसलिए, 'एषणा' का सही अर्थ **अभिलाषा** है।

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33. **Answer: d**

Explanation:

विश्लेषण: विशेषण युग्म का चुनाव (Analysis: Choosing the Adjective Pair)

यह प्रश्न हिंदी व्याकरण से संबंधित है और हमें दिए गए युग्मों (pairs) में से उस युग्म को पहचानना है जो विशेषण (adjective) का कार्य नहीं करता है। विशेषण वे शब्द होते हैं जो संज्ञा (noun) या सर्वनाम (pronoun) की विशेषता बताते हैं। आइए प्रत्येक विकल्प का विश्लेषण करें:

विकल्प 1: छोटा-बड़ा (Adjective Pair for Size)

'छोटा-बड़ा' शब्द आकार (size) बताने वाले दो विपरीत विशेषणों का युग्म है। उदाहरण: "यह दुकान **छोटा-बड़ा** हर साइज़ का सामान रखती है।" इस वाक्य में, 'छोटा-बड़ा' साइज़ की विशेषता बता रहा है, इसलिए यह एक विशेषण युग्म है।

विकल्प 2: हरा-पीला (Adjective Pair for Color)

'हरा-पीला' रंग (color) बताने वाले विशेषणों का युग्म है। उदाहरण: "उसने **हरा-पीला** रंग की साड़ी पहनी।" यहाँ, 'हरा-पीला' साड़ी के रंग की विशेषता बता रहा है, अतः यह एक विशेषण युग्म है।

विकल्प 3: दो-तीन (Adjective Pair for Quantity)

'दो-तीन' संख्या (quantity) बताने वाले विशेषणों (संख्यावाचक विशेषण) का युग्म है। उदाहरण: "कार्यक्रम में **दो-तीन** लोग ही आए।" यह युग्म लोगों की संख्या की विशेषता बता रहा है, इसलिए यह भी एक विशेषण युग्म है।

विकल्प 4: राम-लक्ष्मण (Noun Pair)

'राम-लक्ष्मण' दो व्यक्तिवाचक संज्ञाओं (proper nouns) का युग्म है, जो दो प्रसिद्ध भाइयों के नाम हैं। उदाहरण: "वे **राम-लक्ष्मण** की तरह भाई हैं।" इस युग्म में, 'राम' और 'लक्ष्मण' स्वयं संज्ञा हैं। यद्यपि इनका प्रयोग विशेषण के रूप में किया जा सकता है (जैसे 'राम-लक्ष्मण जैसे'), परन्तु यह युग्म स्वयं विशेषण नहीं है, बल्कि संज्ञाओं से बना है। अन्य विकल्प (छोटा-बड़ा, हरा-पीला, दो-तीन) सीधे तौर पर विशेषता बताने वाले शब्द हैं।

निष्कर्ष: विशेषण न होने वाला युग्म (Conclusion: The Pair That Isn't an Adjective)

विश्लेषण के आधार पर, 'राम-लक्ष्मण' युग्म संज्ञाओं (names) का है, न कि विशेषणों का। अन्य सभी युग्म सीधे तौर पर किसी न किसी प्रकार की विशेषता (आकार, रंग, संख्या) बता रहे हैं।

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34. Answer: d

Explanation:

यह प्रश्न हिंदी व्याकरण में 'तत्सम' और 'तद्भव' शब्दों की पहचान से संबंधित है। हमें दिए गए विकल्पों में से उस शब्द को पहचानना है जो 'तत्सम' नहीं है।

तत्सम शब्दों को समझना

तत्सम शब्द वे हिंदी शब्द होते हैं जो सीधे संस्कृत भाषा से लिए गए हैं और उनके रूप में कोई परिवर्तन नहीं हुआ है। ये शब्द संस्कृत के मूल शब्दों के समान ही प्रयोग किए जाते हैं।

इसके विपरीत, तद्भव शब्द वे होते हैं जो संस्कृत से उत्पन्न तो हुए हैं, लेकिन समय के साथ उच्चारण या अन्य कारणों से उनमें परिवर्तन आ गया है।

शब्दों का विश्लेषण: तत्सम या तद्भव?

आइए, दिए गए प्रत्येक शब्द का विश्लेषण करें:

'तस्कर' का विश्लेषण

- **शब्द:** तस्कर
- **अर्थ:** चोर, डाकू
- **उत्पत्ति:** यह शब्द सीधे संस्कृत के 'तस्कर' (Taskar) शब्द से लिया गया है।
- **निष्कर्ष:** 'तस्कर' एक **तत्सम** शब्द है।

'ध्यान' का विश्लेषण

- **शब्द:** ध्यान
- **अर्थ:** एकाग्रता, चित्त की एक विषय पर स्थिरता
- **उत्पत्ति:** यह शब्द सीधे संस्कृत के 'ध्यान' (Dhyan) शब्द से लिया गया है।
- **निष्कर्ष:** 'ध्यान' एक **तत्सम** शब्द है।

'बोध' का विश्लेषण

- **शब्द:** बोध
- **अर्थ:** ज्ञान, समझ, प्रतीति
- **उत्पत्ति:** यह शब्द संस्कृत के 'बोध' (Bodh) शब्द से लिया गया है।
- **निष्कर्ष:** 'बोध' एक **तत्सम** शब्द है।

'हाथ' का विश्लेषण

- **शब्द:** हाथ
- **अर्थ:** हस्त, कर

- **उत्पत्ति:** यह शब्द संस्कृत के 'हस्त' (Hasta) शब्द से उत्पन्न हुआ है। समय के साथ 'हस्त' के उच्चारण में परिवर्तन होकर 'हाथ' (Haath) रूप बन गया है।
- **निष्कर्ष:** 'हाथ' **तत्सम** नहीं है, बल्कि यह एक **तद्भव** शब्द है।

सही उत्तर का निर्धारण

उपरोक्त विश्लेषण के आधार पर, हम देखते हैं कि 'तस्कर', 'ध्यान', और 'बोध' तत्सम शब्द हैं क्योंकि वे संस्कृत से बिना किसी बदलाव के लिए गए हैं।

दूसरी ओर, 'हाथ' शब्द संस्कृत के 'हस्त' शब्द का तद्भव रूप है, जिसमें उच्चारणगत परिवर्तन हुआ है। इसलिए, यह तत्सम शब्द नहीं है।

अतः, दिए गए विकल्पों में से **'हाथ'** वह शब्द है जो तत्सम नहीं है।

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35. **Answer: b**

Explanation:

अनिवार्य का सही विपरीतार्थक शब्द समझना

इस प्रश्न में हमें हिंदी शब्द **'अनिवार्य'** का सही विपरीतार्थक (विलोम) शब्द चुनना है। 'अनिवार्य' का अर्थ होता है वह कार्य या स्थिति जिसे टाला न जा सके, जो अवश्य ही किया जाना हो, या जो अनिवार्य रूप से आवश्यक हो।

विपरीतार्थक शब्दों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें ताकि **'अनिवार्य'** का सबसे उपयुक्त विपरीतार्थक शब्द पहचान सकें:

- **1. निवारणीय:**

  इस शब्द का अर्थ है 'जिसे टाला जा सकता है' या 'जिससे बचा जा सकता है'। यह 'अनिवार्य' (जिसे टाला न जा सके) के विपरीत है, लेकिन यह सबसे सटीक विपरीतार्थक शब्द नहीं है क्योंकि यह केवल 'टालने' के पहलू पर केंद्रित है।

- **2. ऐच्छिक:**

इस शब्द का अर्थ है 'इच्छा पर आधारित' या 'वैकल्पिक'। यदि कोई कार्य **'अनिवार्य'** है, तो वह करने के लिए बाध्य होना पड़ता है। इसके विपरीत, **'ऐच्छिक'** कार्य वह होता है जिसे करने या न करने की स्वतंत्रता होती है, जो पूरी तरह से व्यक्ति की इच्छा पर निर्भर करता है। यह **'अनिवार्य'** के मूल अर्थ (अनिवार्य रूप से आवश्यक) का सीधा विपरीत है।

- **3. अनावश्यक:**

  इसका अर्थ है 'जिसकी आवश्यकता न हो'। यद्यपि **'अनिवार्य'** का विपरीत **'अनावश्यक'** लग सकता है, पर यह पूरी तरह सही नहीं है। **'अनिवार्य'** का संबंध 'करना ही है' से है, जबकि **'अनावश्यक'** का संबंध 'जरूरत नहीं है' से है। कोई कार्य जो अनिवार्य है, वह अनावश्यक नहीं हो सकता, लेकिन 'अनावश्यक' शब्द 'अनिवार्य' का सीधा विलोम नहीं है।

- **4. आवश्यक:**

  इस शब्द का अर्थ है 'जरूरी' या 'जिसकी जरूरत हो'। **'अनिवार्य'** और **'आवश्यक'** दोनों का अर्थ बहुत निकट है, और अक्सर इन्हें समानार्थी के रूप में प्रयोग किया जाता है। **'अनिवार्य'** 'आवश्यक' से भी अधिक मजबूत शब्द है, जिसका मतलब है कि उसे करना ही पड़ेगा। इसलिए, **'आवश्यक'**, **'अनिवार्य'** का विपरीतार्थक शब्द नहीं है।

निष्कर्ष: अनिवार्य का सही विपरीतार्थक

शब्द **'अनिवार्य'** का अर्थ है कि कुछ करना ही पड़ेगा, वह बाध्यकारी है। इसके विपरीत, **'ऐच्छिक'** का अर्थ है कि वह कार्य आपकी इच्छा पर निर्भर करता है, आप उसे करने या न करने के लिए स्वतंत्र हैं। इसलिए, **'ऐच्छिक'** शब्द **'अनिवार्य'** का सबसे सटीक और उचित विपरीतार्थक शब्द है।

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36. Answer: c

Explanation:

प्रतिकूल शब्द का सही विलोम शब्द

यह प्रश्न हिंदी भाषा से संबंधित है और इसमें **'प्रतिकूल'** शब्द का विलोम (उल्टा अर्थ वाला) शब्द पूछा गया है। विलोम शब्द वे शब्द होते हैं जो एक दूसरे के विपरीत अर्थ प्रकट करते हैं।

प्रतिकूल का अर्थ समझना

'**प्रतिकूल**' का अर्थ होता है - जो पक्ष में न हो, विपरीत हो, सहायक न हो, या किसी के विरुद्ध हो। उदाहरण के लिए, मौसम का **प्रतिकूल** होना मतलब मौसम का खराब होना या यात्रा के लिए सहायक न होना।

विलोम शब्दों का महत्व

विलोम शब्द भाषा को समृद्ध बनाते हैं और विचारों में स्पष्टता लाते हैं। किसी शब्द का सही विलोम जानने से उस शब्द के अर्थ को और गहराई से समझा जा सकता है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों पर विचार करें और देखें कि कौन सा शब्द '**प्रतिकूल**' का सही विलोम है:

- **1. सामान:** 'सामान' का अर्थ होता है वस्तुएँ, माल या एक जैसा। यह '**प्रतिकूल**' के अर्थ से पूरी तरह अलग है और इसका विलोम नहीं है।
- **2. प्रतिदर्श:** 'प्रतिदर्श' का अर्थ होता है नमूना या उदाहरण। इसका '**प्रतिकूल**' शब्द से कोई विपरीत संबंध नहीं है।
- **3. अनुकूल:** '**अनुकूल**' का अर्थ होता है - जो पक्ष में हो, सहायक हो, या किसी स्थिति के लिए उपयुक्त हो। यह '**प्रतिकूल**' (विपरीत) के ठीक विपरीत अर्थ रखता है। इसलिए, '**अनुकूल**' '**प्रतिकूल**' का सही विलोम शब्द है।
- **4. अनुसार:** 'अनुसार' का अर्थ होता है किसी के मुताबिक या के हिसाब से। इसका '**प्रतिकूल**' से कोई विलोम संबंध नहीं है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि '**प्रतिकूल**' का सही विलोम शब्द '**अनुकूल**' है। यह शब्द '**प्रतिकूल**' के विपरीत अर्थ को दर्शाता है, यानी जो विपरीत न होकर सहायक या पक्ष में हो।

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37. Answer: b

Explanation:

"अपनी ढपली अपना राग" का सही अर्थ समझना

यह प्रश्न एक प्रसिद्ध हिंदी मुहावरे, "**अपनी ढपली अपना राग**", के अर्थ को समझने पर केंद्रित है। मुहावरे अक्सर शाब्दिक अर्थ से भिन्न, एक विशेष लाक्षणिक अर्थ रखते हैं। इस मुहावरे को समझने के लिए, इसके शब्दों और समग्र भाव पर विचार करना महत्वपूर्ण है।

मुहावरे के शब्दों का अर्थ

- **ढपली:** ढपली एक प्रकार का छोटा, हाथ में पकड़ा जाने वाला वाद्य यंत्र है, जिसे अक्सर अकेले बजाया जाता है।
- **राग:** संगीत में, राग का अर्थ है एक धुन या गीत।

शाब्दिक रूप से, "अपनी ढपली अपना राग" का अर्थ है - कोई व्यक्ति अपनी ही ढपली बजा रहा है और अपना ही गीत गा रहा है।

लाक्षणिक अर्थ और व्याख्या

जब कोई व्यक्ति या समूह इस मुहावरे के अनुसार व्यवहार करता है, तो इसका मतलब है कि वे किसी के साथ तालमेल बिठाए बिना, अपनी मर्जी से या अपने मन के अनुसार काम कर रहे हैं। वे दूसरों की राय या सामूहिक लक्ष्यों पर ध्यान दिए बिना, केवल अपने तरीके से ही आगे बढ़ते हैं। इस तरह के व्यवहार से अक्सर अव्यवस्था फैलती है क्योंकि सभी लोग अलग-अलग दिशाओं में काम कर रहे होते हैं। इसी कारण, यह स्थिति **"संगठन का आभाव"** दर्शाती है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें:

- **1. बन्दर बाँट करना:** इस मुहावरे का अर्थ है अनुचित तरीके से या स्वार्थपूर्ण ढंग से किसी वस्तु को आपस में बाँट लेना। यह "अपनी ढपली अपना राग" के अर्थ से मेल नहीं खाता, क्योंकि यहाँ मुख्य मुद्दा अव्यवस्था और समन्वय की कमी है, न कि संसाधनों का बँटवारा।
- **2. संगठन का आभाव:** यह विकल्प मुहावरे के लाक्षणिक अर्थ को सटीक रूप से दर्शाता है। जब हर कोई अपनी ढपली बजाता है और अपना राग गाता है, तो स्पष्ट रूप से एक सामूहिक प्रयास या संगठन की कमी होती है। लोग एक-दूसरे के साथ समन्वय स्थापित नहीं करते, जिससे व्यवस्था बिगड़ जाती है।
- **3. अपना गीत गाना:** हालाँकि मुहावरे में "अपना राग" शब्द शामिल है, केवल "अपना गीत गाना" इसका पूरा अर्थ व्यक्त नहीं करता। यह विकल्प व्यक्तिगत अभिव्यक्ति का संकेत दे सकता है, लेकिन यह उस अव्यवस्था और समन्वय की कमी को पूरी तरह से शामिल नहीं करता जो मुहावरे का मुख्य भाव है।
- **4. इनमें से कोई नहीं:** चूँकि विकल्प 2 मुहावरे के अर्थ को सही ढंग से समझाता है, यह विकल्प गलत है।

निष्कर्ष

मुहावरे **"अपनी ढपली अपना राग"** का सबसे उपयुक्त अर्थ **"संगठन का आभाव"** है। यह उस स्थिति का वर्णन करता है जहाँ व्यक्तिगत मनमानी के कारण सामूहिक कार्यों में तालमेल और व्यवस्था नहीं रहती है।

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38. Answer: a

Explanation:

अधोलिखित में शुद्ध बर्तनी वाले शब्द का विश्लेषण

इस प्रश्न में हमें दिए गए विकल्पों में से उस शब्द को पहचानना है जिसकी वर्तनी (spelling) सबसे शुद्ध है। शुद्ध वर्तनी का अर्थ है किसी शब्द को उसके मानक और व्याकरणिक रूप से सही तरीके से लिखना। हम प्रत्येक विकल्प का सावधानीपूर्वक विश्लेषण करेंगे:

शब्दों की शुद्धता की जाँच:

- **विकल्प 1: रचयिता**
  - यह शब्द 'रचना करने वाला' या 'लेखक' के अर्थ में प्रयोग किया जाता है।
  - इस शब्द की वर्तनी **'रचयिता'** बिल्कुल शुद्ध है।
  - इसमें 'च' पर 'इ' की मात्रा (**चि**) और 'त' पर 'आ' की मात्रा (**ता**) का प्रयोग सही है।
- **विकल्प 2: अनुग्रहित**
  - यह शब्द अशुद्ध वर्तनी का उदाहरण है।
  - इसकी सही वर्तनी **'अनुगृहीत'** है।
  - यहाँ गलती 'ग' पर 'ऋ' की मात्रा (ृ) के स्थान पर 'इ' की मात्रा (ि) का प्रयोग करने से हुई है। सही शब्द में 'ग' पर 'ऋ' की मात्रा (**गृ**) आनी चाहिए।
- **विकल्प 3: अहार**
  - यह शब्द भी अशुद्ध है।
  - सही शब्द **'आहार'** है, जिसका अर्थ 'भोजन' या 'खान-पान' होता है।
  - यहाँ 'अ' के स्थान पर 'आ' का प्रयोग होना चाहिए। 'अहार' का अर्थ 'नाश' या 'फेंकना' होता है, जो यहाँ सही अर्थ नहीं है।
- **विकल्प 4: सृष्टा**
  - इस शब्द की वर्तनी भी अशुद्ध है।
  - सही वर्तनी **'स्रष्टा'** है।
  - यह शब्द 'सृज्' (उत्पन्न करना) धातु से बना है। इसमें 'स' के बाद 'ऋ' की मात्रा () लगती है, न कि 'स' पर। 'स्रष्टा' का अर्थ 'उत्पन्न करने वाला' या 'विधाता' होता है।

निष्कर्ष:

उपरोक्त विश्लेषण से यह स्पष्ट होता है कि दिए गए चार विकल्पों में से केवल **'रचयिता'** ही शुद्ध वर्तनी वाला शब्द है। अन्य सभी विकल्पों में वर्तनी संबंधी त्रुटियाँ मौजूद हैं।

इसलिए, सही उत्तर विकल्प 1 है।

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39. Answer: b

Explanation:

दैवज्ञ का अर्थ एवं व्याख्या

इस प्रश्न में हमें 'दैवज्ञ' शब्द के अर्थ को समझना है। 'दैवज्ञ' शब्द का प्रयोग ज्योतिष और भविष्य-कथन के संदर्भ में किया जाता है। यह शब्द संस्कृत मूल का है और हिंदी में इसी अर्थ में प्रचलित है।

'दैवज्ञ' शब्द का अर्थ विग्रह

'दैवज्ञ' शब्द दो भागों से मिलकर बना है:

- **दैव (Daiv):** इसका अर्थ होता है 'भाग्य', 'नियति', 'The Divine' या 'ईश्वर से संबंधित'।
- **ज्ञ (Jña):** इसका अर्थ है 'जानने वाला' या 'ज्ञाता'।

इन दोनों को मिलाकर 'दैवज्ञ' का शाब्दिक अर्थ बनता है **'भाग्य को जानने वाला'** या **'नियति का ज्ञाता'**। ऐसे व्यक्ति जो ग्रहों और नक्षत्रों की स्थिति के आधार पर भविष्य बताने की क्षमता रखते हैं, उन्हें 'दैवज्ञ' कहा जाता है।

दिए गए विकल्पों का विश्लेषण

आइए, प्रश्न में दिए गए विकल्पों पर विचार करें:

- **विकल्प 1: देवता**

  'देवता' का अर्थ ईश्वर या दिव्य शक्ति होता है। 'दैवज्ञ' का अर्थ देवता नहीं है, बल्कि वह व्यक्ति है जो भाग्य या देववाणी को समझता है।

- **विकल्प 2: ज्योतिषी**

'ज्योतिषी' वह व्यक्ति होता है जो ज्योतिष विद्या का ज्ञाता हो। ज्योतिष शास्त्र ग्रहों और नक्षत्रों के आधार पर व्यक्ति के भविष्य और भाग्य का निर्धारण करता है। इसलिए, 'ज्योतिषी' शब्द 'दैवज्ञ' यानी 'भाग्य को जानने वाला' के अर्थ से पूरी तरह मेल खाता है।

- **विकल्प 3: किन्नर**

  'किन्नर' पौराणिक मान्यताओं के अनुसार एक प्रकार के स्वर्गीय संगीतकार या अर्ध-दिव्य प्राणी होते हैं। इनका संबंध भविष्यवाणी या भाग्य-कथन से नहीं है।

- **विकल्प 4: गंधर्व**

  'गंधर्व' भी पौराणिक कथाओं में वर्णित स्वर्गीय संगीतकार और योद्धा हैं। इनका कार्य देवताओं का मनोरंजन करना है, न कि भविष्य बताना।

- **विकल्प 5:**

  यह विकल्प खाली है और इसका कोई प्रासंगिक अर्थ नहीं है।

निष्कर्ष

शब्द 'दैवज्ञ' का विश्लेषण करने पर यह स्पष्ट होता है कि इसका अर्थ 'भाग्य को जानने वाला' है। दिए गए विकल्पों में से 'ज्योतिषी' ही इस अर्थ के सबसे निकट है, क्योंकि ज्योतिषी ग्रहों की स्थिति के आधार पर भाग्य के बारे में बताते हैं।

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40. **Answer: a**

Explanation:

'चिरन्तन' का सही विलोम शब्द खोजना

इस प्रश्न का उद्देश्य 'चिरन्तन' शब्द के लिए सबसे उपयुक्त विलोम शब्द का चयन करना है। विलोम शब्द वे शब्द होते हैं जिनका अर्थ दिए गए शब्द के विपरीत होता है। हमें विकल्पों में से वह शब्द चुनना है जो 'चिरन्तन' के अर्थ के ठीक विपरीत हो।

'चिरन्तन' शब्द का अर्थ समझना

'चिरन्तन' शब्द का अर्थ है जो बहुत लंबे समय से चला आ रहा हो, शाश्वत, सनातन, या स्थायी। यह उस विचार या वस्तु को दर्शाता है जिसका अस्तित्व हमेशा से रहा है और संभवतः हमेशा रहेगा, अर्थात् जो कभी

समाप्त नहीं होता।

दिए गए विकल्पों का विश्लेषण

आइए हम दिए गए प्रत्येक विकल्प का अर्थ और 'चिरन्तन' के साथ उसके संबंध का विश्लेषण करें:

- **1. नश्वर:** इस शब्द का अर्थ है नाशवान, वह जो नष्ट हो जाए, या जिसका अंत निश्चित हो। यह 'चिरन्तन' के विपरीत है, क्योंकि 'चिरन्तन' स्थायित्व या शाश्वतता को दर्शाता है, जबकि 'नश्वर' क्षणभंगुरता या अंत को दर्शाता है।
- **2. अचिन्तन:** इसका अर्थ है चिंतन न करना, विचारहीन होना। यह 'चिरन्तन' (जो शाश्वत है) के विपरीत अर्थ वाला शब्द नहीं है।
- **3. अचर:** इस शब्द का अर्थ है जो चल न सके, स्थिर। यद्यपि 'चिरन्तन' में स्थायित्व का भाव हो सकता है, 'अचर' विशेष रूप से गति के अभाव को दर्शाता है, जबकि 'चिरन्तन' समय के संदर्भ में स्थायित्व को दर्शाता है। इसलिए, यह 'चिरन्तन' का सबसे सटीक विलोम नहीं है।
- **4. अचेतन:** इसका अर्थ है जिसमें चेतना न हो, बेहोश। यह 'चिरन्तन' के अर्थ से पूरी तरह से भिन्न है और इसका विलोम नहीं है।

सही विलोम शब्द का निर्धारण

विश्लेषण के आधार पर, यह स्पष्ट है कि 'चिरन्तन' का अर्थ शाश्वत या स्थायी है। इसके विपरीत, 'नश्वर' का अर्थ नाशवान या क्षणिक है। इसलिए, 'नश्वर' शब्द 'चिरन्तन' का सबसे उपयुक्त और सही विलोम शब्द है।

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41. Answer: b

Explanation:

'उच्छिष्ट' का सही संधि विच्छेद है - उत् + शिष्ट। शेष विकल्प असंगत हैं। अतः विकल्प 2 **'उत् + शिष्ट'** सही उत्तर है।

⭐ Key Points

- 'उच्छिष्ट' में व्यंजन संधि है।
- उत् + शिष्ट = उच्छिष्ट (त् +च् =छ), यहाँ **'त्'** और **'च्'** के मेल से **'छ'** बना है।
- व्यंजन संधि में 'त्' के बाद 'च्' आए टी 'च्' का 'छ' हो जाता है।

संधि	परिभाषा	उदाहरण
व्यंजनसंधि	व्यंजन का व्यंजन से अथवा किसी स्वर से मेल होने पर जो परिवर्तन होता है उसे व्यंजन संधि कहते हैं।	दिक् + गज = दिग्गज

Additional Information

संधि - दो शब्दों के मेल से जो विकार (परिवर्तन) होता है उसे संधि कहते हैं।

संधि के तीन प्रकार हैं - 1. स्वर, 2. व्यंजन और 3. विसर्ग,

संधि	परिभाषा	उदाहरण
स्वर	स्वर वर्ण के साथ स्वर वर्ण के मेल से विकार उत्पन्न होता है।	विद्या + अर्थी = विद्यार्थी महा + ईश = महेश
व्यंजन	एक व्यंजन से दूसरे व्यंजन या स्वर के मेल से विकार उत्पन्न होता है।	अहम् + कार = अहंकार उत् + लास = उल्लास
विसर्ग	विसर्ग के साथ स्वर या व्यंजन के मेल से विकार उत्पन्न होता है।	दुः + आत्मा =दुरात्मा निः + कपट =निष्कपट

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42. Answer: c

Explanation:

Hindi Grammar: Understanding अकर्मक क्रिया (Intransitive Verbs)

यह प्रश्न क्रिया के प्रकार, विशेष रूप से **अकर्मक क्रिया** (intransitive verb) की पहचान करने के बारे में है। हिंदी व्याकरण में, क्रियाएं मुख्य रूप से दो प्रकार की होती हैं: सकर्मक (transitive) और अकर्मक (intransitive)। यह समझना महत्वपूर्ण है कि क्रिया का कर्म (object) है या नहीं।

Defining सकर्मक and अकर्मक क्रिया

- **सकर्मक क्रिया (Transitive Verb):** वह क्रिया जिसका कर्म होता है, अर्थात् जिस क्रिया के होने का फल कर्ता (subject) पर न पड़कर किसी कर्म (object) पर पड़ता है। कर्म का पता लगाने के लिए क्रिया के साथ 'क्या' या 'किसे' लगाकर प्रश्न पूछते हैं। यदि उत्तर मिलता है, तो क्रिया सकर्मक होती है।
- **अकर्मक क्रिया (Intransitive Verb):** वह क्रिया जिसका कर्म नहीं होता है। क्रिया के होने का फल सीधे कर्ता पर ही पड़ता है। क्रिया के साथ 'क्या' या 'किसे' लगाने पर कोई उत्तर नहीं मिलता है।

Analyzing the Options

आइए दिए गए वाक्यों का विश्लेषण करें:

1. **मैं पुस्तक पढता हूँ (Main pustak padhta hoon):**
    - कर्ता (Subject): मैं (I)
    - क्रिया (Verb): पढता हूँ (read)
    - कर्म (Object): पुस्तक (book) - यहाँ 'क्या पढता हूँ?' का उत्तर 'पुस्तक' मिलता है।
    - विश्लेषण: 'पढ़ना' यहाँ एक **सकर्मक क्रिया** है क्योंकि इसका कर्म 'पुस्तक' है।
2. **ये चीजें तुम्हारा जी ललचाती (Ye cheezein tumhara jee lalchaati):**
    - कर्ता (Subject): ये चीजें (These things)
    - क्रिया (Verb): ललचाती (tempt)
    - कर्म (Object): जी (heart/mind) - यहाँ 'किसे ललचाती?' का उत्तर 'जी' मिलता है।
    - विश्लेषण: 'ललचाना' यहाँ एक **सकर्मक क्रिया** है क्योंकि इसका कर्म 'जी' है।
3. **श्याम सोता है (Shyam sota hai):**
    - कर्ता (Subject): श्याम (Shyam)
    - क्रिया (Verb): सोता है (sleeps)

- कर्म (Object): कोई कर्म नहीं है। 'क्या सोता है?' या 'किसे सोता है?' का कोई उत्तर नहीं मिलता है।
- विश्लेषण: 'सोना' यहाँ एक **अकर्मक क्रिया** है क्योंकि क्रिया का प्रभाव सीधे कर्ता 'श्याम' पर पड़ रहा है और कोई कर्म नहीं है।

4. **वह अपना सिर खुजलाता है (Vah apna sir khujlata hai):**

- कर्ता (Subject): वह (He)
- क्रिया (Verb): खुजलाता है (scratches)
- कर्म (Object): सिर (head) - यहाँ 'क्या खुजलाता है?' का उत्तर 'सिर' मिलता है।
- विश्लेषण: 'खुजलाना' यहाँ एक **सकर्मक क्रिया** है क्योंकि इसका कर्म 'सिर' है।

Conclusion: Identifying the अकर्मक क्रिया Sentence

उपरोक्त विश्लेषण के आधार पर, वाक्य "श्याम सोता है" में क्रिया 'सोता है' एक **अकर्मक क्रिया** है, क्योंकि इसमें कोई कर्म नहीं है। इसलिए, यह वाक्य दिए गए विकल्पों में सही उत्तर है।

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43. Answer: c

Explanation:

आग के पर्यायवाची शब्दों की पहचान

यह प्रश्न 'आग' शब्द के पर्यायवाची (synonym) की पहचान करने के बारे में है। हमें उस विकल्प को चुनना है जिसका अर्थ 'आग' नहीं होता है। पर्यायवाची शब्द वे होते हैं जिनके अर्थ समान होते हैं।

'आग' शब्द का अर्थ

'आग' का अर्थ है वह तत्व जो जलने पर प्रकाश और गर्मी उत्पन्न करता है; अग्नि।

दिए गए विकल्पों का विश्लेषण

आइए प्रत्येक विकल्प के अर्थ को समझें:

- **अनल:** यह 'आग' का एक पर्यायवाची शब्द है। इसका अर्थ भी अग्नि होता है।
- **पावक:** यह भी 'आग' का एक पर्यायवाची शब्द है। इसका मतलब अग्नि या जलाने वाला होता है।
- **व्योम:** इस शब्द का अर्थ 'आकाश', 'गगन' या 'अंतरिक्ष' होता है। इसका 'आग' से कोई संबंध नहीं है।

- **कृशानु:** यह 'आग' का एक और पर्यायवाची शब्द है, जिसे अग्नि के संदर्भ में प्रयोग किया जाता है।

निष्कर्ष

'अनल', 'पावक', और 'कृशानु' तीनों शब्द 'आग' के पर्यायवाची हैं। केवल 'व्योम' शब्द का अर्थ आकाश होता है, न कि आग। इसलिए, 'व्योम' वह शब्द है जो 'आग' का पर्यायवाची नहीं है।

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44. Answer: b

Explanation:

प्रेरणार्थक क्रिया को समझना

प्रेरणार्थक क्रिया वह क्रिया होती है जिसमें कर्ता (subject) स्वयं कार्य न करके किसी अन्य को कार्य करने की प्रेरणा देता है या कार्य करवाता है। दूसरे शब्दों में, जब क्रिया का फल कर्ता पर न पड़कर किसी अन्य पर पड़ता है, तो वह प्रेरणार्थक क्रिया कहलाती है।

प्रेरणार्थक क्रियाओं की पहचान के लिए क्रिया के रूप को देखना महत्वपूर्ण है। सामान्यतः क्रिया के मूल रूप में 'आ' या 'वा' जोड़कर प्रेरणार्थक क्रिया बनाई जाती है। जैसे:

- पढ़ना (सामान्य क्रिया) -> पढ़ाना (प्रथम प्रेरणार्थक), पढ़वाना (द्वितीय प्रेरणार्थक)
- करना (सामान्य क्रिया) -> कराना (प्रथम प्रेरणार्थक), करवाना (द्वितीय प्रेरणार्थक)

वाक्यों में प्रेरणार्थक क्रिया का विश्लेषण

आइए दिए गए वाक्यों का विश्लेषण करके देखें कि किसमें प्रेरणार्थक क्रिया का प्रयोग नहीं हुआ है:

वाक्य 1: पिता उसे पढ़ाते हैं

- इस वाक्य में क्रिया '**पढ़ाते हैं**' है।
- यह क्रिया 'पढ़ना' (study/read) से बनी है।
- यहाँ 'पिता' (कर्ता) स्वयं पढ़ने का कार्य नहीं कर रहे हैं, बल्कि 'उसे' (कर्म) पढ़ाने का कार्य करवा रहे हैं।
- अतः, 'पढ़ाते हैं' एक प्रेरणार्थक क्रिया है।

वाक्य 2: राम नहीं पढ़ता

- इस वाक्य में क्रिया '**पढ़ता**' है।
- यह क्रिया 'पढ़ना' (study/read) का सामान्य वर्तमान काल रूप है।
- यहाँ 'राम' (कर्ता) स्वयं पढ़ने का कार्य कर रहा है। वह किसी और को पढ़ने के लिए प्रेरित नहीं कर रहा है।
- अतः, 'पढ़ता' एक सामान्य क्रिया है, प्रेरणार्थक क्रिया नहीं।

वाक्य 3: वे अध्यापक से पढ़वाते हैं

- इस वाक्य में क्रिया '**पढ़वाते हैं**' है।
- यह क्रिया 'पढ़ना' (study/read) का द्वितीय प्रेरणार्थक रूप है।
- यहाँ 'वे' (कर्ता) स्वयं नहीं पढ़ रहे हैं, बल्कि 'अध्यापक' से पढ़ने का कार्य करवा रहे हैं।
- अतः, 'पढ़वाते हैं' एक प्रेरणार्थक क्रिया है।

वाक्य 4: अध्यापक परिश्रम करते हैं

- इस वाक्य में क्रिया '**परिश्रम करते हैं**' है।
- यह एक सामान्य क्रिया वाक्यांश है, जहाँ कर्ता 'अध्यापक' स्वयं परिश्रम करने का कार्य कर रहा है।
- यहाँ किसी अन्य को कार्य करने की प्रेरणा नहीं दी जा रही है।
- अतः, 'परिश्रम करते हैं' एक सामान्य क्रिया है, प्रेरणार्थक क्रिया नहीं।

निष्कर्ष: किस वाक्य में प्रेरणार्थक क्रिया नहीं है?

प्रश्न पूछता है कि किस वाक्य में प्रेरणार्थक क्रिया का प्रयोग *नहीं* हुआ है। वाक्य विश्लेषण के आधार पर:

- वाक्य 1 ('पिता उसे पढ़ाते हैं') में प्रेरणार्थक क्रिया है।
- वाक्य 3 ('वे अध्यापक से पढ़वाते हैं') में प्रेरणार्थक क्रिया है।
- वाक्य 2 ('राम नहीं पढ़ता') में सामान्य क्रिया है, प्रेरणार्थक नहीं।
- वाक्य 4 ('अध्यापक परिश्रम करते हैं') में भी सामान्य क्रिया है, प्रेरणार्थक नहीं।

दिए गए विकल्पों में से, वाक्य '**राम नहीं पढ़ता**' वह वाक्य है जिसमें कर्ता स्वयं कार्य कर रहा है और किसी अन्य को कार्य करने की प्रेरणा नहीं दे रहा है। इसलिए, इसमें प्रेरणार्थक क्रिया का प्रयोग नहीं हुआ है।

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45. Answer: b

Explanation:

अन्त:स्थ वर्ण की पहचान

इस प्रश्न में हमें यह पता लगाना है कि दिए गए हिंदी वर्णों में से कौन सा वर्ण **अन्त:स्थ** (Antahstha) श्रेणी में नहीं आता है।

अन्त:स्थ वर्ण क्या होते हैं?

हिंदी वर्णमाला में, **अन्त:स्थ** वर्ण वे ध्वनियाँ होती हैं जिनका उच्चारण करते समय जीभ, तालु, दंत आदि से बहुत कम स्पर्श करती है या न के बराबर स्पर्श करती है। इन्हें अर्ध-स्वर (Semi-vowels) भी कहा जाता है क्योंकि इनका उच्चारण स्वरों और व्यंजनों के बीच का होता है।

हिंदी वर्णमाला में व्यंजनों का वर्गीकरण

हिंदी व्यंजनों को उनके उच्चारण स्थान और उच्चारण विधि के आधार पर विभिन्न समूहों में बांटा गया है। **अन्त:स्थ** वर्ण इसी वर्गीकरण का एक हिस्सा हैं। अन्य प्रमुख समूह हैं:

- **स्पर्श** (जैसे क, च, ट, त, प वर्ग)
- **ऊष्म** (जैसे श, ष, स, ह)
- **अनुनासिक** (जैसे ङ, ञ, ण, न, म)
- **उत्क्षिप्त** (जैसे ड़, ढ़)
- **and** (अर्ध-स्वर)

अन्त:स्थ वर्ण कौन से हैं?

हिंदी में मुख्य रूप से चार **अन्त:स्थ** वर्ण माने जाते हैं:

- य (ya)
- र (ra)
- ल (la)
- व (va)

इनका उच्चारण करते समय मुख-विवर में कहीं भी वायु का अवरोध नहीं होता, बल्कि एक संकरा मार्ग बनता है जिससे वायु घर्षण के साथ बाहर निकलती है, लेकिन यह घर्षण ऊष्म वर्णों जितना तीव्र नहीं होता।

दिए गए विकल्पों का विश्लेषण

आइए अब दिए गए विकल्पों को देखें और पहचानें कि कौन सा वर्ण **अन्त:स्थ** नहीं है:

"**निम्नलिखित** में से कौन वर्ण **अन्त:स्थ** नही है"

विकल्प	वर्ण	क्या यह अन्त:स्थ है?	कारण
1	य	हाँ	'य' एक **अन्त:स्थ** वर्ण (अर्ध-स्वर) है।
2	ह	नहीं	'ह' एक **ऊष्म** (Ushma) वर्ण है, **अन्त:स्थ** नहीं। इसका उच्चारण वायु के तीव्र घर्षण से होता है।
3	र	हाँ	'र' एक **अन्त:स्थ** वर्ण है (प्रकंपी ध्वनि)।
4	व	हाँ	'व' एक **अन्त:स्थ** वर्ण (अर्ध-स्वर) है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, हम देखते हैं कि 'य', 'र', और 'व' **अन्त:स्थ** वर्ण हैं। वर्ण 'ह' **ऊष्म** व्यंजन की श्रेणी में आता है, **अन्त:स्थ** में नहीं। इसलिए, सही उत्तर विकल्प 2 है।

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46. Answer: d

Explanation:

'सप्तर्षि' का समास

यह प्रश्न हिंदी व्याकरण के 'समास' (शब्दों का संयोजन) की पहचान करने से संबंधित है। हमें दिए गए शब्द '**सप्तर्षि**' में प्रयुक्त समास के प्रकार को निर्धारित करना है। 'सप्तर्षि' शब्द दो मूल शब्दों से मिलकर बना है: '**सप्त**', जिसका अर्थ है 'सात', और '**ऋषि**', जिसका अर्थ है 'महान विद्वान' या 'पूज्य व्यक्ति'। यह शब्द हिंदू पौराणिक कथाओं में वर्णित सात महान ऋषियों के समूह को संदर्भित करता है।

समास के प्रमुख भेद

सही समास की पहचान करने के लिए, आइए विभिन्न समास भेदों को समझें:

- **कर्मधारय समास:** इस समास में, दो शब्दों के बीच विशेषण-विशेष्य (जैसे, 'नील कमल' - नीला है जो कमल) या उपमेय-उपमान (जैसे, 'मुख चन्द्र' - मुख रूपी चन्द्र) का संबंध होता है।

- **तत्पुरुष समास:** इसमें दूसरा पद प्रधान होता है, और पहले पद का कारक चिह्न (जैसे 'का', 'के', 'की', 'से', 'में', 'पर') वाक्य से हटा दिया जाता है। उदाहरण के लिए, 'राजपुत्र' (राजा का पुत्र)।
- **द्वंद्व समास:** इस समास में दोनों पद प्रधान होते हैं और वे अक्सर 'और', 'तथा', 'या' जैसे योजक शब्दों से जुड़े होते हैं। जैसे, 'राम-लक्ष्मण' (राम और लक्ष्मण)।
- **द्विगु समास:** इस समास की सबसे महत्वपूर्ण विशेषता यह है कि इसका पहला पद हमेशा एक संख्यावाचक विशेषण होता है, और यह संख्या मिलकर एक समूह या समाहार का बोध कराती है। उदाहरण के तौर पर, 'चौराहा' (चार राहों का समाहार)।

'सप्तर्षि' में समास का प्रकार

अब हम 'सप्तर्षि' शब्द का विश्लेषण करते हैं:

- 'सप्तर्षि' शब्द में पहला पद **'सप्त'** है, जिसका अर्थ **सात** होता है।
- 'सात' एक स्पष्ट संख्या है।
- 'सप्तर्षि' का शाब्दिक अर्थ है **सात ऋषियों का समूह**।
- चूंकि 'सप्तर्षि' का पहला पद एक संख्या (सात) है और यह मिलकर एक समूह (सात ऋषियों का समूह) बना रहा है, यह सीधे तौर पर **द्विगु समास** की परिभाषा से मेल खाता है।

सही समास का निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि 'सप्तर्षि' शब्द में **द्विगु समास** है, क्योंकि इसमें पहला पद संख्यावाचक है और यह एक समूह का बोध करा रहा है।

इसलिए, सही उत्तर **द्विगु** है।

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47. **Answer: a**

Explanation:

Understanding Oral Communication Barriers

Oral communication is the process of conveying information, ideas, or feelings through spoken words. It's a fundamental aspect of human interaction, but it can be easily disrupted by various factors. These disruptions are known as barriers to oral communication, and they can prevent the message from being sent, received, or

understood accurately. Identifying these barriers is key to improving how we communicate.

Identifying the Foremost Barrier in Oral Communication

The question asks us to identify the primary obstacle among the given choices that hinders effective oral communication. Let's analyze each option:

- **Poor listening**: This refers to the inability or unwillingness of the receiver to pay attention to, understand, interpret, and retain the message being delivered by the speaker. Since communication is a two-way street, if the listener isn't actively and effectively listening, the message delivery fails, regardless of the speaker's skill. This is widely considered a major barrier.
- **Humility**: Humility is a quality of being unassuming or modest. It is generally seen as a positive trait and is not typically considered a direct barrier to oral communication. In fact, humility can foster open communication. The opposite, arrogance, might create a barrier, but humility itself does not.
- **Interestedness**: This term is slightly ambiguous. If it means a *lack* of interest from the listener, this would certainly impede communication. However, a lack of interest often manifests as poor listening or lack of concentration. "Poor listening" is a more direct and specific description of the communication failure itself.
- **Concentration**: Concentration, or the ability to focus, is essential for effective listening. A lack of concentration means the listener might miss parts of the message or misunderstand it. While lack of concentration is a significant barrier, it is often a component or cause of **poor listening**. Poor listening encompasses a broader range of issues that prevent understanding, including distraction, lack of focus, emotional interference, and more.
- Option 5 is empty and cannot be evaluated.

Why Poor Listening is the Foremost Barrier

When comparing the options, **poor listening** stands out as the most fundamental and encompassing barrier to **oral communication**. While lack of concentration contributes to poor listening, poor listening represents the complete failure in the receiving part of the communication process. Without effective listening, the exchange of information breaks down, making it the primary obstacle.

Effective **oral communication** requires both a clear message (speaker) and an attentive receiver (listener). When listening skills are weak, the effectiveness of the speaker is negated.

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48. **Answer: a**

Explanation:

Effective Oral Communication: The Power of Simple Language

The effectiveness of any form of communication, especially **oral communication**, is measured by how clearly and accurately the message is received and understood by the intended audience. The speaker's skill in choosing the right words and structuring their speech plays a crucial role in achieving this clarity.

Analyzing the Impact of Language Choices in Speaking

When speaking, the listener relies on hearing and immediate comprehension. Unlike written text, listeners cannot easily revisit sentences or look up unfamiliar words. This makes the speaker's choice of language paramount. Let's examine how different language styles affect oral communication:

- **Clarity through Simplicity**: Using **simple language** ensures that the message is easily understood by a broad audience. It avoids ambiguity and makes the core points accessible, fostering better connection and comprehension between the speaker and the listeners.
- **Challenges with Long Sentences**: While grammatically correct, **long sentences** can be difficult to follow when heard. Listeners might lose track of the main idea or forget the beginning of the sentence by the time they reach the end. This hinders effective communication.
- **Barriers Created by Foreign Words**: Incorporating **foreign words** into speech can be problematic unless the audience is known to be familiar with them. It can create a barrier, making the communication exclusive and potentially alienating listeners who don't understand the terminology.

- **Obstacles with Complex Words**: Employing **complex words** or jargon, similar to foreign words, can impede understanding. If the audience lacks the specific vocabulary, the message becomes obscured, defeating the purpose of communication. An effective speaker adapts their language to the audience's level.

Conclusion: Prioritizing Simplicity for Effective Speaking

In summary, the ability to convey a message clearly and effectively during **oral communication** relies heavily on the speaker's skill in using accessible language. Therefore, the use of **simple language** is the most critical factor for success, ensuring the message is received as intended.

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49. **Answer: c**

Explanation:

Establishing Effective Communication with Partners and Subordinates

Effective communication is vital for building strong working relationships and ensuring smooth operations within any organization. When aiming to **establish communication** with individuals at different levels, such as **partners** and **subordinates**, the chosen method significantly impacts the outcome. The goal is to foster an environment where information is shared clearly, feedback is encouraged, and relationships are strengthened.

Analyzing Options for Communication Establishment

Let's break down the different approaches to communication to determine the most effective one:

Evaluating Formal Communication

Formal communication involves structured methods like official emails, reports, and scheduled meetings. While this type of communication is essential for documenting decisions and conveying official information, it can sometimes feel impersonal or restrictive. Relying solely on formal channels might hinder the open exchange of ideas and feedback, which is crucial for truly **establishing communication** and building rapport, especially with **subordinates**.

Assessing Clear and Attentive Communication

Ensuring communication is **clear and attentive** is a fundamental principle that applies to all forms of interaction. Clarity helps prevent misunderstandings, while attentiveness shows respect and engagement. However, this option describes the *quality* of communication rather than the specific *method* or *style*. While vital, it doesn't specify the type of interaction that might best foster relationships and open dialogue with **partners** and **subordinates**.

Understanding Informal Inter-communication

Informal inter-communication refers to casual conversations, brief check-ins, and discussions that happen outside of formal structures. This approach is highly effective in building trust, strengthening team cohesion, and creating a more approachable atmosphere. It allows for quick feedback loops, spontaneous idea sharing, and a more personal connection. For building strong working relationships with both **partners** and **subordinates**, fostering informal communication channels can significantly help **establish communication** more effectively and encourage a collaborative spirit.

Considering Understanding with Concern

The idea of **to understand everybody with concern** highlights the importance of empathy and attentiveness in interpersonal dynamics. While this attitude is crucial for effective management and teamwork, it represents a desired outcome or a personal quality rather than a specific communication strategy or method itself. Understanding is often a result of good communication practices, not the practice itself.

Conclusion on Best Communication Practices

To effectively **establish communication** with both **partners** and **subordinates**, creating an open and approachable environment is key. While clarity and attentiveness are necessary components, the method that best facilitates this is often **informal inter-communication**. It helps break down hierarchical barriers, encourages peer-to-peer interaction, and builds stronger, more trusting relationships, making day-to-day collaboration smoother and more productive.

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50. **Answer: c**

Explanation:

Handling Negative Relationships with Senior Officers at Work

Dealing with a situation where a senior officer dislikes you and it negatively impacts your work requires a strategic and professional approach. The goal is to mitigate the negative effects on your job performance and maintain a professional environment.

Evaluating Different Strategies

Let's look at the potential outcomes of each approach:

- **Option 1: Complaining to a higher officer.**
  - This might escalate the conflict and could be seen as unprofessional if not handled carefully.
  - It may not resolve the underlying issue and could potentially worsen your relationship with the senior officer or others in management.
  - It might suggest an inability to handle workplace challenges independently.
- **Option 2: Talking to him privately.**
  - Direct communication can sometimes resolve misunderstandings and improve relationships.
  - However, if the senior officer's dislike is deep-seated or based on personal bias, a private conversation might not be productive or could even lead to further complications.

    - The success depends heavily on the senior officer's receptiveness and the way the conversation is approached.
- **Option 3: Neglecting this and doing your work carefully.**
    - This approach focuses on maintaining professionalism and high performance despite the challenging personal dynamic.
    - By concentrating on your duties and executing them meticulously, you demonstrate competence and commitment.
    - This strategy minimizes the impact of the senior officer's attitude on your actual output and reputation for quality work.
    - It shows resilience and maturity in managing difficult workplace situations without letting them derail your professional responsibilities.
    - Often, consistent good performance can speak for itself and may gradually influence perceptions over time.
- **Option 4: Resigning from the job.**
    - Resigning is a drastic step and should be considered only when the situation is untenable and severely affecting your well-being or career growth, and other options have been exhausted.
    - It avoids addressing the problem directly and means leaving a potentially valuable position.

Recommended Approach: Professional Focus

The most constructive way to manage a situation where a senior officer's negative feelings affect your work is often to double down on your professional responsibilities. Focusing intently on doing your job carefully and effectively demonstrates your commitment and competence. This approach:

- Keeps your performance standards high.
- Reduces the chance that the personal issue affects your actual job results.
- Projects an image of professionalism and resilience.
- Avoids unnecessary conflict or escalation.

While direct communication (Option 2) can be useful in many workplace conflicts, focusing on diligent work (Option 3) is a reliable strategy when dealing with persistent negative attitudes that directly hinder your job functions, as it keeps the emphasis firmly on your professional duties and performance.

51. **Answer: b**

Explanation:

Communication Contexts and Leadership Role Emergence

This question asks us to identify the specific type of communication where leadership roles tend to appear first. To answer this, we need to understand the different kinds of communication and how group dynamics influence the development of leadership.

Understanding Different Communication Types

Communication can be categorized based on the number of participants and the nature of the interaction:

- **Intrapersonal Communication:** This refers to communication with oneself. It involves thoughts, self-reflection, and internal dialogues. Think of it as talking to yourself in your head.
- **Dyadic Communication:** This is communication that occurs between only two people. Examples include a conversation between two friends, a job interview, or a discussion between a teacher and a student.
- **Small Group Communication:** This involves interaction among a small number of people (typically 3 to 15) who share a common purpose, goal, or task. Members interact and influence each other directly.
- **Virtual Reality (VR) Communication:** This is communication that takes place using virtual reality technology. It's a medium, and the nature of the communication (e.g., interpersonal, dyadic, or group) depends on how the VR environment is used.

Identifying Where Leadership First Emerges

Leadership roles often develop when a group needs direction, organization, or decision-making to achieve a common objective. Let's see how this plays out:

- **Intrapersonal Communication:** Since leadership involves interaction and influence over others, it cannot emerge in communication solely within oneself.
- **Dyadic Communication:** While one person might be more influential or take the lead in a two-person conversation, distinct leadership *roles* don't typically emerge in the same structured way as they do in larger groups. The focus is usually on the interaction between the two individuals.
- **Small Group Communication:** This is the key context. When three or more people collaborate on a task, different members might naturally take on leadership functions. For example:
  - Someone might take the initiative to start the task.
  - A member might emerge as a leader by offering clear direction or organizing the discussion.
  - Skills and expertise within the group can lead to informal leadership roles based on the specific needs of the task.

  Because multiple people are involved and working towards a shared goal, the need for coordination and guidance often leads to the emergence of leadership roles.
- **Virtual Reality (VR) Communication:** Leadership can emerge in VR communication, but only if the VR setting supports interactions involving multiple people (i.e., a group). If the VR communication is just between two people or only involves one person interacting with a system, leadership roles won't emerge. The emergence of leadership depends on the group dynamics, not the VR medium itself.

Conclusion on Leadership Emergence

The dynamics inherent in **small group communication**—multiple participants, shared goals, and the need for coordination—create the most fertile ground for leadership roles to naturally emerge for the first time. Unlike intrapersonal or dyadic communication, small groups require structured or emergent leadership to function effectively.

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52. Answer: a

Explanation:

Understanding Telephone Communication as Linear

Communication over the telephone is often classified as an example of **linear communication** when considering the basic path a message takes during transmission.

Defining Linear Communication

Linear communication refers to a one-way process where information flows from a sender to a receiver without necessarily including immediate feedback. Think of it like a straight line:

Sender → Message → Channel → Receiver

This model focuses on the transmission aspect, where the sender initiates the message and the receiver gets it.

Analyzing Telephone Communication

Let's break down how a telephone call fits this model:

- **Sender:** When you speak on the phone, you are the sender.
- **Message:** Your voice, converted into an electrical or digital signal, is the message.
- **Channel:** The telephone network (phone lines, cell towers, internet protocols) acts as the channel for transmitting the signal.
- **Receiver:** The person you are calling receives the signal, which is converted back into sound.

At any given moment during the call, when one person is speaking and the other is listening, the communication flow follows this linear path. Person A transmits to Person B.

Evaluating Other Communication Types

Let's see why the other options might be less fitting:

- **Non-linear communication:** This term is very broad and could describe complex interactions, but the fundamental message transmission in a phone call is

typically sequential rather than scattered or multi-path simultaneously.

- **Mechanized communication:** While telephones are machines, making this 'mechanized communication', this term describes the *tool* or *medium* used, not the *pattern* or *model* of communication flow (like linear, interactive, or transactional). The question asks for the type of communication pattern.
- **Circular communication:** This model emphasizes feedback, where the receiver's response loops back to the sender, potentially influencing future messages. Phone calls *do* have feedback (the back-and-forth talking), making the overall interaction interactive. However, the fundamental transmission of a single utterance is linear. If forced to choose the simplest model fitting the transmission, linear is often cited in introductory contexts.

In summary, the act of transmitting speech over a telephone line, from one person to another at a specific point in time, aligns with the one-way flow characteristic of **linear communication**.

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53. **Answer: b**

Explanation:

Understanding Effective Oral Communication

Oral communication is the process of conveying information, ideas, and feelings through spoken words. It's a fundamental part of daily interactions, both personal and professional. When we communicate orally, multiple elements contribute to how effectively our message is received.

Key Aspects of Oral Communication

Let's break down the options to understand what element is most crucial in oral communication:

- **What you say:** This refers to the content or the message itself. The words chosen are certainly important for clarity and conveying the intended meaning.
- **How you say it:** This covers the delivery aspect, including tone of voice, volume, speed (pace), clarity of articulation, and non-verbal cues like facial expressions

and body language. It's about the way the message is presented.

- **Where you say it:** This relates to the context or location of the communication. While the environment can influence the conversation, it doesn't usually define the core effectiveness of the speaker's delivery.
- **When you say:** This refers to the timing of the communication. Timing can be important for impact, but the way something is said often matters more regardless of when it's delivered.

Focusing on Delivery: 'How You Say It'

While the content (**what you say**) provides the information, the delivery (**how you say it**) shapes how that information is perceived and interpreted. Consider these points:

- **Tone and Emotion:** The tone of voice can change the meaning of words entirely. Saying "That's great" sarcastically versus genuinely shows the power of tone.
- **Clarity and Pace:** Speaking too fast, too slow, or unclearly can make it difficult for the listener to understand the message, regardless of how good the content is.
- **Engagement:** Aspects like volume modulation and enthusiasm in delivery help keep the listener engaged.
- **Non-Verbal Signals:** Body language and facial expressions that accompany speech are a huge part of communication, often conveying more than words alone.

Effective oral communication relies heavily on the speaker's ability to deliver their message clearly, confidently, and engagingly. Even a simple message, delivered poorly, can be misunderstood or ineffective. Conversely, a well-delivered message, even if simple, can have a strong impact.

Conclusion on Oral Communication Importance

In essence, while the content is foundational, the way a message is delivered significantly influences its reception and effectiveness. Therefore, **how you say it** is often considered the most critical factor in successful oral communication.

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54. Answer: b

Explanation:

Understanding Modes of Communication: Single Source to Large Audience

The question asks us to identify the specific **mode of communication** where information originates from a **single source** and is transmitted to a **large number of receivers** at the same time. This describes a broadcast or widely distributed communication scenario.

Defining Mass Communication

Mass Communication is the process of creating and sharing ideas, information, and messages through a **single source** to a **large, diverse audience**. Key characteristics include:

- **Single Source:** Typically, a media organization or a prominent individual acts as the source (e.g., a TV network, a newspaper, a popular website).
- **Mass Audience:** The receivers are numerous, geographically spread out, and often heterogeneous (people from different backgrounds).
- **Simultaneous Transmission:** The message is sent out and received by many people at roughly the same time, facilitated by technology.
- **Mediated Communication:** It relies on technological channels like television, radio, print, and the internet.

Examples include a national news broadcast, a televised presidential address, or a viral social media post reaching millions. This perfectly matches the scenario of a **single source** communicating with a **large audience simultaneously**.

Evaluating Other Communication Options

Let's look at why the other options are not the correct fit for this specific description:

- **Intra-personal Communication:** This involves communication within oneself, such as thinking, reflecting, or self-talk. It's an internal process and does not involve transmitting information to others.

- **Interpersonal Communication:** This is direct communication between two or more people. It's typically face-to-face or through channels allowing direct interaction (like phone calls or instant messages). It doesn't involve a **single source** reaching a **large, dispersed audience**.
- **In-group Communication:** This type of communication happens within a small, specific group where members share common interests or identity. While it can involve multiple people, it's usually limited in scale and scope compared to **mass communication**, and doesn't necessarily fit the description of a **single source** broadcasting widely and **simultaneously**.

Based on the definition and characteristics, **Mass Communication** is the correct term for a **mode of communication** involving a **single source** transmitting information to a **large number of receivers** concurrently.

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55. **Answer: a**

Explanation:

Understanding Classroom Communication

Classroom communication is the process through which information, ideas, and feelings are exchanged between teachers and students, as well as among students, within an educational setting. Its main purpose is to facilitate learning and create a conducive environment for acquiring knowledge and skills.

Analyzing the Characteristics of Classroom Communication

Let's examine the options provided to understand the primary nature of classroom communication:

- **Effective:** This describes communication that successfully achieves its intended purpose. In a classroom, effective communication means the message is conveyed clearly, understood accurately by the students, and leads to the desired learning outcomes. It ensures that teaching goals are met.

- **Cognitive:** This term relates to mental processes such as thinking, understanding, memory, and problem-solving. While classroom communication aims to stimulate cognitive development and learning, 'cognitive' itself refers to the mental aspect, not the overall quality or success of the communication process.
- **Affective:** This pertains to emotions, feelings, attitudes, and values. Classroom communication can certainly influence the affective domain (e.g., student engagement, motivation, classroom climate), but it describes an aspect or outcome, not the fundamental characteristic of the communication exchange itself.
- **Selective:** This means choosing specific information or communication methods. While teachers often adapt their communication style, the core aim of classroom interaction isn't primarily about being 'selective' in a way that might limit understanding, but rather ensuring clarity for all learners.

The Importance of Effectiveness in Teaching

The ultimate goal of any interaction in a classroom is to ensure that learning happens efficiently and successfully. This requires messages to be clear, understandable, and purposeful. Therefore, the most appropriate descriptor for classroom communication, in its ideal form, is **effective**.

Effective communication ensures that:

- Information is transmitted accurately.
- Students understand the content being taught.
- Learning objectives are achieved.
- Engagement and participation are fostered.

While cognitive and affective elements are crucial parts of the learning process influenced by communication, effectiveness is the overarching quality that defines successful classroom interaction. Selectivity might be a tool used, but it's not the defining characteristic.

Thus, classroom communication is fundamentally considered as aiming to be **effective** to support the educational process.

56. **Answer: d**

Explanation:

Understanding Circular Communication Models

Circular Communication describes a dynamic communication process where messages flow continuously between participants. Unlike linear models that see communication as a one-way street, circular models emphasize interaction and the continuous exchange of information. This model highlights that communication is an ongoing cycle, not a single event.

Roles of Encoder and Decoder in Communication

In any communication process, the terms 'encoder' and 'decoder' describe specific roles:

- **Encoder:** This is the person or entity that conceptualizes the message and converts thoughts or ideas into a communicable form (like words, symbols, or gestures). They initiate the message.
- **Decoder:** This is the person or entity who receives the message and interprets its meaning, converting the symbols back into thoughts or ideas.

The Impact of Feedback in Circular Communication

Feedback is crucial in communication, especially in circular models. It represents the response or reaction of the receiver to the original message sent by the sender.

In a **Circular Communication** process, the sender (initial encoder) sends a message. The receiver then decodes this message. Critically, the receiver often provides **feedback** based on their interpretation. When the original sender receives and interprets this feedback, they are essentially performing the role of a **decoder**. They must decode the receiver's response to understand how their message was perceived.

Therefore, the introduction of **feedback** into the communication loop transforms the original sender's role. The sender, who initially acted as the **encoder**, now also functions as a **decoder** when processing the feedback received.

Analyzing Other Options

Let's consider why the other options are less fitting for this specific transformation:

- **Noise:** Noise refers to anything that interferes with the clear transmission or reception of a message. While noise affects communication quality, it doesn't inherently cause the encoder to become a decoder.
- **Audience:** The audience is the recipient of the message. While the audience decodes the message, their presence alone doesn't make the original encoder also act as a decoder. The encoder becomes a decoder specifically when interpreting the audience's *response* (feedback).
- **Criticality:** Criticality relates to the importance or severity of the message or situation. It influences the communication context but doesn't directly change the functional roles of encoder and decoder in the way feedback does.

In summary, the cyclical nature of **Circular Communication**, driven by the response loop of **feedback**, necessitates that the original sender (**encoder**) also takes on the role of the **decoder** to understand the impact and interpretation of their message.

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57. **Answer: b**

Explanation:

Understanding the 'Odd One Out' Question

This question asks us to identify which item from the list doesn't share a common characteristic with the others. The items are Bird, Insect, Airplane, and Kite. Three of these items form a group based on a specific similarity.

Analyzing the Characteristics

Let's examine each option:

- **Bird**: A bird is a living creature known for having feathers, wings, and typically the ability to fly.
- **Insect**: An insect is a class of living creatures (invertebrates) characterized by six legs and a body divided into three parts. Many insects possess wings and can fly, but flight is not a universal characteristic of all insects.
- **Airplane**: An airplane is a non-living, mechanical object designed for flight. It uses engines and wings to travel through the air.
- **Kite**: A kite is a non-living object, usually made of paper or cloth stretched over a frame, designed to be flown in the wind while attached to a string. It is specifically made for flying.

Identifying the Grouping Criterion

We need to find what common feature unites three of the options.

Consider the primary association or function of each item:

- Birds are strongly associated with flight.
- Airplanes are fundamentally machines built for flight.
- Kites are objects designed specifically to fly in the wind.

The shared characteristic among **Bird**, **Airplane**, and **Kite** is that they are all distinct entities whose main purpose or defining feature is **flight**.

Determining the Odd One Out

Now let's look at the **Insect**:

- While many insects fly (like butterflies, bees, flies), the term 'Insect' refers to a very broad biological classification.
- This classification includes many species that do not fly (e.g., ants, termites, fleas, lice).
- Therefore, flight is a common characteristic for many insects, but it is not the sole defining feature for the entire biological class 'Insect' in the way it is for the other three options. The defining features are biological, like having six legs and three body segments.

Compared to a specific type of flying animal (Bird), a flying machine (Airplane), and a flying object (Kite), the category 'Insect' is broader and includes many non-flying members.

Conclusion

The items **Bird**, **Airplane**, and **Kite** all belong to a group defined by their association with or purpose of flight. The **Insect** is the odd one out because it represents a broad biological category where flight is common but not a defining characteristic for all members.

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58. Answer: b

Explanation:

Given Letters: EAML

Meaningful Words: MEAL, LAME, MALE

Thus, there are three such meaningful words.

Hence, option 2is correct.

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59. Answer: b

Explanation:

Except for Litres, all other options represent the units of measurement for solid items.

Litres is a unit of measurement for liquid items.

Hence, **Litres** is correct.

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60. Answer: d

Explanation:

Identifying the Odd One Out

This question asks us to identify the item that does not belong with the others in the given list of common food items. We need to examine the characteristics of each item to find the one that is different.

List of Items Provided:

- Tomato
- Onion
- Ladyfinger
- Chilly

Analyzing Vegetable Characteristics

Let's look at the typical characteristics and culinary uses of each item:

- **Tomato:** Commonly used in salads, sauces, and curries. It has a slightly sweet, tart, and savory flavor profile. Botanically, it's a fruit, but culinarily treated as a vegetable.
- **Onion:** A staple in cooking, known for its pungent smell and sharp, savory flavor that sweetens when cooked. It grows as a bulb underground.
- **Ladyfinger (Okra):** Known for its unique texture and mild flavor. It's used in various dishes, often fried or stewed. It is also botanically a fruit.
- **Chilly (Chilli Pepper):** Primarily valued for the heat or spiciness it adds to dishes due to compounds like capsaicin. While it can have fruity notes, its defining characteristic is pungency or heat. It is also botanically a fruit.

Determining the Differentiating Factor

When comparing these items, a key difference emerges based on their primary flavor contribution:

- Tomatoes contribute acidity, sweetness, and umami.
- Onions contribute a pungent and savory base flavor.

- Ladyfingers contribute a mild flavor and unique texture.
- Chillies contribute spiciness or heat.

The primary characteristic that distinguishes **Chilly** from Tomato, Onion, and Ladyfinger is its defining feature of providing **spiciness** or heat. While the others have distinct flavors, heat is not their primary defining culinary attribute.

Therefore, based on the defining flavor profile, **Chilly** is the odd one out in this list.

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61. **Answer: a**

Explanation:

Analyzing Non-Verbal Cues: The Officer's Action

Meetings often involve various forms of communication, including non-verbal cues which convey messages without words. Understanding these signals is crucial for interpreting the dynamics of a situation. This solution examines the act of an officer throwing his pen on the table during a meeting to determine what it signifies.

Interpreting the Action of Throwing a Pen

The specific action described is an officer forcefully throwing his pen onto the table. Let's break down the significance of this behavior:

- **Physicality:** Throwing involves a degree of force and movement, suggesting an expression of energy or emotion.
- **Context:** The action occurs during a meeting, a professional setting where emotional displays are often regulated. An uncontrolled action like throwing a pen signals a potential disruption or strong feeling.
- **Object:** A pen is a common, everyday object. Throwing it suggests the emotion is significant enough to override typical professional restraint regarding common items.

Evaluating the Options

We can assess each provided option against the described action:

- **Anger:** Throwing an object can be a clear, albeit unprofessional, way to express frustration, annoyance, or anger. The force used in the action aligns well with this emotion. It's a physical release of pent-up feelings.
- **Tiredness:** While tiredness can lead to reduced performance or a lack of engagement, it usually doesn't manifest as a sudden, forceful action like throwing a pen. Tired individuals might appear lethargic or withdrawn, not typically energetic in a negative way.
- **Disinterest:** Showing disinterest usually involves passive behaviors such as looking away, fidgeting subtly, or appearing bored. Throwing a pen is an active, attention-grabbing gesture that goes beyond mere lack of interest.
- **Confusion:** Confusion typically results in actions like asking clarifying questions, looking puzzled, or hesitating. Throwing a pen is not a standard or logical response to feeling confused.

Conclusion on Behavioral Interpretation

Considering the nature of the act—throwing an object with force during a professional meeting—the most fitting interpretation among the choices is the expression of **anger** or significant frustration. It represents a loss of composure and a non-verbal communication of strong negative feelings.

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62. **Answer: d**

Explanation:

Understanding Interpersonal Skills for Collaboration

Working effectively with others, often referred to as teamwork or collaboration, relies heavily on a person's **interpersonal skills**. These are the social, communication, and personal attributes that enable someone to interact effectively and harmoniously with other people. Strong interpersonal skills are vital for building relationships, understanding perspectives, and achieving common goals within a group setting.

Evaluating Options for Effective Teamwork

Let's examine the given options to determine which represents the most important interpersonal skill for working with others:

- **Availability:** While being available to participate and contribute is necessary, simply being present doesn't guarantee effective interaction or collaboration. A person might be available but lack the skills to communicate or cooperate properly.
- **Status:** Status, whether social or professional, refers to one's position or rank. While it can influence group dynamics, it is not an interpersonal skill itself. High status does not automatically imply good collaborative abilities or effective communication.
- **Power mod:** This term is unclear in the context of interpersonal skills. If it relates to 'power', possessing power doesn't equate to having good interpersonal skills. Interpersonal skills are about interaction and cooperation, not necessarily dominance or control.
- **Ability:** This option refers to the competence, skill, or capacity to perform tasks and interact effectively. In the context of working with others, 'ability' encompasses a range of essential interpersonal skills such as communication, empathy, active listening, conflict resolution, and cooperation. It signifies the competence to contribute positively to group efforts and navigate social interactions successfully.

The Crucial Role of Ability in Teamwork

The most important interpersonal skill for working with others is undoubtedly one's **ability**. This encompasses the competence and skill set required to:

- Communicate ideas clearly and listen actively to others.
- Understand and share the feelings of colleagues (empathy).
- Manage disagreements constructively (conflict resolution).
- Work cooperatively towards shared objectives (teamwork).
- Build and maintain positive working relationships.

Possessing the **ability** to perform these actions effectively makes a person a valuable team member. While availability is helpful, and status or power might play a role in

certain dynamics, it is the underlying **ability** to interact skillfully and contribute positively that is most fundamental for successful collaboration.

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63. **Answer: d**

Explanation:

Navigating Talks with Co-workers

This question explores typical behavior during professional interactions with colleagues. Understanding how to communicate effectively, including non-verbal cues like smiling, is important in the workplace. Let's break down the options to understand the nuances of interacting with co-workers.

Analyzing Behavior in Workplace Talks

When interacting with co-workers, the way we express ourselves significantly impacts relationships and the work environment. The options provided relate to our general demeanor and specific reactions, particularly smiling.

Understanding the Options:

- **Being Grave:** Choosing to be consistently serious or "grave" might make interactions feel stiff or unapproachable. While professionalism is key, a lack of warmth can hinder rapport-building.
- **Always Smiling:** While positivity is good, maintaining a smile constantly ("are smiling") might sometimes seem out of place or insincere, especially during serious discussions or when delivering difficult news.
- **Smiling in Support:** Smiling specifically "in support of their views" suggests smiling primarily when agreeing. This might limit positive interaction, as smiling can also convey friendliness, empathy, or shared humor, even when views differ.
- **Smiling at the Correct Time:** This option suggests displaying a smile ("smile on correct time") when it is contextually appropriate. This implies social awareness and emotional intelligence, using smiling to enhance communication, show

encouragement, build rapport, or react positively when suitable, without being excessive or inappropriate. It's about timing and context.

Choosing Appropriate Workplace Interaction

Effective communication with co-workers involves more than just words; it includes reading social cues and responding appropriately. Smiling is a powerful non-verbal tool:

- A smile can build trust and create a more positive atmosphere.
- Smiling at the right moments shows engagement and empathy.
- It helps in navigating difficult conversations more smoothly.
- Being grave or always smiling might not always fit the situation.
- Smiling only in support limits its use to agreement, missing other opportunities for positive connection.

Therefore, exhibiting a smile at the appropriate or opportune moments ("smile on correct time") reflects a balanced and socially adept approach to workplace communication.

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64. **Answer: d**

Explanation:

Detailed Solution for Logical Reasoning Question

This solution analyzes the logical relationship between the given statements and the proposed inferences (conclusions) to determine which inference necessarily follows.

Understanding the Statements

- **Statement I: Some birds are elephants.** This statement indicates that there is at least one entity that is both a bird and an elephant. It implies an overlap between the group 'birds' and the group 'elephants'. However, it does not mean all birds are elephants, nor all elephants are birds. There could be birds that are not elephants, and elephants that are not birds.

- **Statement II: Some elephants are white.** This statement indicates that there is at least one entity that is both an elephant and white. It implies an overlap between the group 'elephants' and the attribute 'white'. It does not mean all elephants are white, nor all white things are elephants.

Evaluating the Inferences

We need to check if the inferences logically follow from the combination of Statement I and Statement II.

Analysis of Inference A: Some birds are white.

- This inference suggests an overlap between the group 'birds' and the attribute 'white'.
- From Statement I, we know some birds are elephants (Birds $\cap$ Elephants $\neq \emptyset$).
- From Statement II, we know some elephants are white (Elephants $\cap$ White $\neq \emptyset$).
- The crucial point is that the elephants mentioned in Statement I (which are birds) might be a completely different set of elephants than those mentioned in Statement II (which are white).
- It is possible that the elephants that are birds are *not* white, and the elephants that are white are *not* birds.
- Therefore, we cannot definitively conclude that some birds must be white based on the given statements.

Analysis of Inference B: Some whites are birds.

- This inference claims that there is an overlap between the attribute 'white' and the group 'birds'.
- Logically, "Some A are B" is equivalent to "Some B are A". So, this inference is the same as Inference A ("Some birds are white").
- As explained above, the connection between 'birds' and 'white' is not guaranteed by the statements. The group of elephants that are birds might have no members in common with the group of elephants that are white.
- Thus, Inference B also does not necessarily follow from the statements.

Conclusion

Since neither Inference A ("Some birds are white") nor Inference B ("Some whites are birds") is logically guaranteed by the provided statements, the correct conclusion is that neither inference follows.

- The middle term 'elephants' is undistributed in both statements (it refers to only 'some' elephants in each case). When the middle term is undistributed in both premises involving 'some' statements, no definite conclusion can be drawn linking the other two terms ('birds' and 'white').

Based on this analysis, the option stating that neither inference A nor B follows is the correct choice.

Keywords: Logical Reasoning, Syllogism, Statements, Inferences, Birds, Elephants, White, Conclusion, Venn Diagram.

Correct Option: 4. Neither inference A nor B follows.

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65. **Answer: d**

Explanation:

Analysis of Logical Statements: Bat, Ball, Wicket Scenario

This explanation addresses a logical reasoning question involving statements about categories (bat, ball, wicket) and their corresponding inferences. The goal is to determine which inferences logically follow from the given statements.

Analysis of the Given Statements

The problem provides two core statements:

- **Statement I:** No bat is ball.
- **Statement II:** No ball is wicket.

To understand the logical implications, let's define the sets involved:

- Let B represent the set of all items that are 'bats'.
- Let L represent the set of all items that are 'balls'.

- Let W represent the set of all items that are 'wickets'.

Statement I ("No bat is ball") signifies that the set B and the set L have no members in common. This can be expressed using set notation as: $B \cap L = \emptyset$

Statement II ("No ball is wicket") signifies that the set L and the set W have no members in common. This can be expressed as: $L \cap W = \emptyset$

In summary, the statements tell us that 'balls' are entirely separate from 'bats' and also entirely separate from 'wickets'. The statements do not directly define the relationship between 'bats' and 'wickets'.

Evaluation of Inference A: "No bat is wicket."

Inference A proposes that the set of bats (B) and the set of wickets (W) are mutually exclusive, meaning $B \cap W = \emptyset$.

From the given statements, we know that $B \cap L = \emptyset$ and $L \cap W = \emptyset$. The category 'ball' (L) is distinct from both 'bat' (B) and 'wicket' (W). However, this information is insufficient to conclude anything definitive about the relationship between B and W.

It is possible for bats and wickets to overlap, be completely separate, or even for one to be a subset of the other, without violating the initial statements. Let's consider an illustrative example:

- Set of Bats (B): {Wooden Bat, Metal Bat}
- Set of Balls (L): {Cricket Ball, Tennis Ball}
- Set of Wickets (W): {Stumps, Metal Bat}

Checking the statements with this example:

- Statement I (No bat is ball): True, as B and L are disjoint.
- Statement II (No ball is wicket): True, as L and W are disjoint.

Now, let's check Inference A:

- Inference A (No bat is wicket): This is False in our example, because the item 'Metal Bat' belongs to both set B (Bats) and set W (Wickets).

Since we found a valid scenario where the statements are true but Inference A is false, Inference A does not necessarily follow from the given statements.

Evaluation of Inference B: "All wickets are bats."

Inference B suggests that the entire set of wickets (W) is contained within the set of bats (B), meaning $W \subseteq B$.

Similar to the analysis for Inference A, the given statements ($B \cap L = \emptyset$ and $L \cap W = \emptyset$) do not provide enough information to confirm or deny this relationship between bats and wickets.

Using the same example scenario:

- Bats (B): {Wooden Bat, Metal Bat}
- Balls (L): {Cricket Ball, Tennis Ball}
- Wickets (W): {Stumps, Metal Bat}

The statements hold true in this scenario.

Now, let's check Inference B:

- Inference B (All wickets are bats): This is False in our example. The item 'Stumps' is in set W (Wickets) but not in set B (Bats).

Because we found a scenario where the statements are true but Inference B is false, Inference B also does not necessarily follow from the given statements.

Conclusion Regarding Inferences

Our analysis shows that neither Inference A ("No bat is wicket") nor Inference B ("All wickets are bats") can be logically deduced from the given statements ("No bat is ball" and "No ball is wicket"). The relationship between bats and wickets remains undetermined by the provided information.

Determining the Final Answer

Based on the evaluation:

- Inference A does not necessarily follow.
- Inference B does not necessarily follow.

Therefore, the correct conclusion is that neither inference A nor B follows from the given statements. This aligns with the option indicating the absence of logical consequence for both inferences.

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66. **Answer: c**

Explanation:

Analyzing Syllogism Statements and Inferences

This question involves logical reasoning based on given statements and inferences. We need to determine which inferences are valid conclusions drawn from the provided statements.

Understanding the Statements

- **Statement I:** All fish are tortoise. This means that every individual belonging to the category 'fish' also belongs to the category 'tortoise'. The set of 'fish' is entirely contained within the set of 'tortoise'.
- **Statement II:** No tortoise is a crocodile. This means that there is no overlap between the category 'tortoise' and the category 'crocodile'. These two sets are mutually exclusive.

Evaluating Inference A: No crocodile is a fish

- From Statement I, we know that if something is a fish, it must be a tortoise (Fish $\subseteq$ Tortoise).
- From Statement II, we know that if something is a tortoise, it cannot be a crocodile (Tortoise $\cap$ Crocodile = $\varnothing$).
- Combining these, since all fish are within the 'tortoise' category, and the 'tortoise' category has no members in common with the 'crocodile' category, it logically follows that the 'fish' category can have no members in common with the 'crocodile' category.

- Therefore, 'No fish is a crocodile'. This directly implies that 'No crocodile is a fish'.
- Thus, Inference A is valid.

Evaluating Inference B: No fish is a crocodile

- As established in the analysis of Inference A, the logical consequence of Statement I (All fish are tortoise) and Statement II (No tortoise is a crocodile) is that no member of the 'fish' category can be a member of the 'crocodile' category.
- This conclusion is exactly what Inference B states.
- Thus, Inference B is valid.

Venn Diagram Visualization

We can visualize this using Venn diagrams:

- Draw a large circle representing 'Tortoise'.
- Draw a smaller circle representing 'Fish' completely inside the 'Tortoise' circle (representing Statement I).
- Draw a third circle representing 'Crocodile' completely outside the 'Tortoise' circle, with no overlap (representing Statement II).
- Observing the diagram, the 'Fish' circle is entirely contained within the 'Tortoise' circle, which is separate from the 'Crocodile' circle. This clearly shows that the 'Fish' circle is also completely separate from the 'Crocodile' circle. This separation confirms that both 'No fish is a crocodile' and 'No crocodile is a fish' are true.

Final Conclusion

Based on the logical deduction from the statements and the visualization using Venn diagrams, both Inference A and Inference B are correct conclusions.

- Inference A: No crocodile is a fish. (Follows)
- Inference B: No fish is a crocodile. (Follows)

Therefore, both inferences A and B follow from the given statements.

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67. Answer: b

Explanation:

Logical Reasoning: Analyzing Syllogism Statements and Conclusions

This solution details the logical deduction required to determine which conclusions follow from the given statements about players, smokers, and wine-addicts.

Statement Analysis: Players, Smokers, and Wine-addicts

We are given two statements to analyze:

- **Statement A:** "All players are smokers." This establishes a relationship where the set of all players is completely contained within the set of smokers. If someone belongs to the 'player' category, they automatically belong to the 'smoker' category.
- **Statement B:** "Some smokers are wine-addicts." This indicates that there is at least one individual who falls into both the 'smoker' category and the 'wine-addict' category. There is a partial overlap between these two groups.

Evaluation of Conclusions

Let's examine each conclusion based on the information provided in the statements:

Conclusion I: "All smokers are players."

- Statement A states "All players are smokers" (All P are S).
- This statement does *not* imply the converse, which would be "All smokers are players" (All S are P).
- It's possible for there to be smokers who are not players. The set of smokers might be larger than the set of players.
- Therefore, Conclusion I does not necessarily follow from the statements.

Conclusion II: "Some wine-addicts are smokers."

- Statement B states "Some smokers are wine-addicts" (Some S are W).

- This means there is an intersection between the set of smokers and the set of wine-addicts.
- The logical proposition "Some S are W" is equivalent to "Some W are S". If some members of group S are also members of group W, then it must also be true that some members of group W are members of group S.
- Therefore, Conclusion II directly and logically follows from Statement B.

Final Deduction: Identifying Valid Conclusions

Comparing the conclusions against the statements:

- Conclusion I ("All smokers are players") is invalid.
- Conclusion II ("Some wine-addicts are smokers") is valid.

Only Conclusion II logically follows from the given premises.

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68. **Answer: c**

Explanation:

Logical Deduction Analysis for Statements and Conclusions

This section provides a step-by-step analysis to determine which of the given conclusions logically follow from the provided statements. We will examine each statement and conclusion carefully.

Understanding the Statements

- **Statement A:** `Alcoholic drinks are injurious to health.` This statement establishes a general principle: consuming alcoholic drinks has a negative impact on health.
- **Statement B:** `All old women drink whisky.` This statement classifies all individuals in the category "old women" as whisky drinkers.
- **Implicit Link:** It is common knowledge, and implied in such questions, that whisky is a type of alcoholic drink. This link is necessary to connect Statement B to Statement A.

Evaluating Conclusion I

Conclusion I: **All old women have poor health.**

- From Statement B, we know that the group "old women" exclusively drinks whisky.
- Using the implicit link, whisky is an alcoholic drink. Therefore, all old women consume alcoholic drinks.
- Statement A asserts that alcoholic drinks are injurious to health.
- Combining these points, we can logically infer that the consumption of whisky (an alcoholic drink) by old women is injurious to their health.
- However, Conclusion I states that they definitively **have** poor health. The statements only tell us that what they consume is *injurious* (harmful). Being "injurious to health" means it causes or is likely to cause harm, but it does not necessarily mean that every person consuming it currently *has* poor health. Poor health is a specific state, whereas "injurious" describes the nature of the drink or its effect, which might not always manifest immediately or completely as poor health. The conclusion makes a stronger claim than what the statements logically guarantee.

Evaluating Conclusion II

Conclusion II: **All young women are in good health.**

- The original statements (A and B) provide information only about alcoholic drinks and old women.
- There is no mention or data provided regarding "young women" in either statement.
- Therefore, we cannot draw any conclusions about the health status or any other characteristic of young women based solely on the given information. This conclusion is entirely outside the scope of the provided statements.

Final Determination

- Conclusion I does not logically follow because the provided statements do not establish a certain link between consuming something "injurious to health" and the definite state of "having poor health".

- Conclusion II does not follow because the statements contain no information about the group mentioned ("young women").
- Since neither conclusion can be logically derived from the statements with certainty, the correct response is that neither conclusion follows.

Selecting the Correct Option

Based on the analysis, the option that accurately reflects that neither conclusion is supported by the statements is the correct choice.

The correct option is **3. Neither conclusion I nor II follows**.

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69. **Answer: a**

Explanation:

Logical Deduction: Statements and Inferences Analysis

This problem requires analyzing logical statements (syllogisms) to determine which conclusions (inferences) logically follow. We are given two statements about relationships between groups: 'graduates', 'chairs', and 'tables'.

Understanding the Given Statements

Let's break down the statements to understand the relationships:

- **Statement I: All graduates are chairs.** This means the entire set of graduates is included within the set of chairs. If someone is a graduate, they must also be a chair according to this statement. We can represent this using set notation: Graduates $\subseteq$ Chairs.
- **Statement II: All chairs are tables.** This means the entire set of chairs is included within the set of tables. If something is a chair, it must also be a table according to this statement. We can represent this as: Chairs $\subseteq$ Tables.

Evaluating Inference A: "All graduates are tables."

We need to check if this inference is a necessary consequence of the given statements.

- From Statement I: Graduates $\subseteq$ Chairs.
- From Statement II: Chairs $\subseteq$ Tables.
- Combining these two, we can see a chain relationship: If all graduates belong to the set of chairs, and all chairs belong to the set of tables, then it logically follows that all graduates must belong to the set of tables.
- This is a transitive property: If $A \subseteq B$ and $B \subseteq C$, then $A \subseteq C$. In our case, A = Graduates, B = Chairs, C = Tables.
- Therefore, Graduates $\subseteq$ Tables.
- **Conclusion: Inference A, "All graduates are tables," logically follows from the statements.**

Evaluating Inference B: "All tables are graduates."

Now, let's check if this second inference holds true.

- We established from the statements that Graduates $\subseteq$ Chairs and Chairs $\subseteq$ Tables, which implies Graduates $\subseteq$ Tables.
- Inference B claims the reverse: Tables $\subseteq$ Graduates.
- The statements do not provide information that supports this reverse relationship. While all graduates are tables, it does not mean all tables must be graduates. There could be tables that are not chairs, or chairs that are not graduates.
- For example, imagine:
  - Graduates = {G1, G2}
  - Chairs = {G1, G2, C3} (All graduates are chairs)
  - Tables = {G1, G2, C3, T4, T5} (All chairs are tables)

  In this example, G1 and G2 are graduates, chairs, and tables. C3 is a chair and a table but not a graduate. T4 and T5 are tables but not chairs or graduates. This scenario satisfies both statements but clearly shows that not all tables are graduates.
- **Conclusion: Inference B, "All tables are graduates," does not logically follow from the statements.**

Final Conclusion on Inferences

Based on the analysis:

- Inference A logically follows from the given statements.
- Inference B does not logically follow from the given statements.

Therefore, only inference A follows.

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70. Answer: c

Explanation:

Analyzing Statements for Logical Deduction

This problem involves analyzing two statements and determining which of the given inferences logically follow from them. We need to understand the relationship between the categories mentioned: Ministers (M), Students (S), and Inexperienced people (I).

Let's break down the statements:

- **Statement I: Every minister is a student.** This means that the entire group of ministers is included within the group of students. If someone is a minister, they are automatically a student. We can represent this as: All M are S.
- **Statement II: Every student is inexperienced.** This means that the entire group of students is included within the group of inexperienced people. If someone is a student, they are automatically inexperienced. We can represent this as: All S are I.

Evaluating Inferences Based on Statements

Now, let's examine each inference based on the information from the statements.

Inference A: Every minister is inexperienced.

- From Statement I, we know that all ministers are students (All M are S).
- From Statement II, we know that all students are inexperienced (All S are I).

- Combining these, if every minister is a student, and every student is inexperienced, it logically follows that every minister must also be inexperienced. This is a classic syllogism structure (All M are S and All S are I implies All M are I).
- Therefore, Inference A follows.

Inference B: Some inexperienced are students.

- Statement II tells us that "Every student is inexperienced" (All S are I).
- This statement implies that the set of students (S) is a subset of the set of inexperienced people (I). If there exists at least one student, then that student is, by definition, inexperienced.
- Therefore, the group of inexperienced people (I) contains all the students (S). This means there are definitely some inexperienced people who are also students.
- Hence, Inference B follows.

Summary of Logical Connections

The relationships derived from the statements are:

- Minister → Student
- Student → Inexperienced

This leads to the combined conclusion:

- Minister → Inexperienced

Which supports Inference A.

Furthermore, the statement "Every student is inexperienced" directly implies that the category "inexperienced" includes all students, meaning "Some inexperienced are students".

This supports Inference B.

Conclusion on Following Inferences

Since both Inference A and Inference B can be logically derived from the given statements, the correct option is the one stating that both inferences follow.

71. **Answer: c**

Explanation:

This question requires us to analyze three statements and determine which conclusion logically follows. We need to use deductive reasoning based on the premises provided.

Statements Breakdown

Here's an explanation of each statement:

- **Statement A: All artists are whimsical.** This sets up a category inclusion: the entire group of artists is part of the larger group of whimsical people. If someone is an artist, they must be whimsical. We can represent this logical relationship as: $Artist \implies Whimsical$.
- **Statement B: Some artists are drug addicts.** This indicates that there is an intersection between the group of artists and the group of drug addicts. At least one person belongs to both categories. Symbolically, this means: $\exists x(Artist(x) \wedge DrugAddict(x))$.
- **Statement C: Frustrated people are prone to become drug addicts.** This suggests a tendency or correlation between being frustrated and potentially developing a drug addiction. It doesn't establish a strict rule that applies to every individual in these categories.

Conclusion from Artists and Drug Addicts Link

A valid conclusion can be drawn by combining statements A and B:

1. **Existence of a Specific Individual (from B):** Statement B confirms there exists at least one person who is simultaneously an artist and a drug addict.
2. **Applying the Artist Rule (from A):** According to Statement A, every artist is whimsical ($Artist \implies Whimsical$). Therefore, the specific person identified in step 1 (who is an artist) must also be whimsical.
3. **Synthesized Fact:** This leads us to conclude that the person identified is a drug addict (from Statement B) and is also whimsical (derived using Statement A).

4. **The Logical Deduction:** Since we've confirmed the existence of at least one person who is both a drug addict and whimsical, the conclusion "Some drug addicts are whimsical" is logically sound. This directly corresponds to Option 3.

This derived conclusion logically follows from the premises stated in A and B.

Why Other Options Fail

Let's consider why the other options are not necessarily supported by the given statements:

- **Option 1: Artists are frustrated.** None of the statements provide a direct link between being an artist and being frustrated. Statement C connects frustration to drug addiction, not artists.
- **Option 2: All frustrated people are drug addicts.** Statement C mentions a tendency ("prone to become"), not a certainty for everyone who is frustrated. This option makes a stronger claim than the statement supports, so it cannot be concluded.
- **Option 4: Whimsical people are generally frustrated.** The statements establish relationships between artists and whimsical traits (A), artists and drug addicts (B), and frustrated people and drug addicts (C). However, there is no information provided that links being whimsical directly to being frustrated.

In summary, based solely on the logical implications of statements A and B, the conclusion that "Some drug addicts are whimsical" is the only valid deduction among the choices presented.

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72. Answer: c

Explanation:

Height Comparisons Explained

The question asks us to determine the two tallest individuals based on a series of comparisons about their heights. We need to carefully analyze each statement to establish a clear order.

- **Statement 1:** "A is shorter than D but taller than C." This tells us the order between A, C, and D is C < A < D.
- **Statement 2:** "D is shorter than B but taller than A." This gives us the order A < D < B.
- **Statement 3:** "E is shorter than A but taller than C." This establishes the order C < E < A.

Establishing the Height Order

Now, let's combine all the information to create a single height ranking from shortest to tallest.

- From statement 1 and 2, we know C < A < D and A < D < B. Combining these, we get C < A < D < B.
- Statement 3 tells us C < E < A.
- Integrating this into the combined order C < A < D < B, we place E between C and A.
- The complete height order from shortest to tallest is: C < E < A < D < B.

We can visualize this order:

Shortest	C
	E
	A
	D
Tallest	B

Identifying the Tallest Individuals

Based on the established order (C < E < A < D < B), we can identify the tallest individuals.

- The tallest person is B.
- The second tallest person is D.

Therefore, the two tallest individuals are B and D.

Final Answer Verification

Let's check the options provided:

- Option 1: E and A (Incorrect, A is taller than E)
- Option 2: E and B (Incorrect, B is the tallest, but E is the shortest)
- Option 3: B and D (Correct, B is the tallest, and D is the second tallest)
- Option 4: C and B (Incorrect, C is the shortest)

The analysis confirms that B and D are the two tallest individuals.

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73. Answer: a

Explanation:

Number Series Pattern Analysis: 3 8 5 7 8 5 12

The task is to determine the next number in the sequence: 3, 8, 5, 7, 8, 5, 12, ?. We need to carefully examine the sequence to uncover the underlying pattern.

Identifying Interleaved Patterns in the Series

Upon reviewing the sequence 3, 8, 5, 7, 8, 5, 12, ?, it suggests that two distinct number patterns might be merged or interleaved. We can investigate this by separating the numbers based on their positions (odd vs. even).

Examining the Odd Position Series

First, let's consider the numbers in the odd positions (1st, 3rd, 5th, 7th):

- 1st position: 3
- 3rd position: 5
- 5th position: 8
- 7th position: 12

Now, let's find the difference between consecutive terms in this odd-position sub-series:

- Difference between 3rd and 1st term: $5 - 3 = 2$
- Difference between 5th and 3rd term: $8 - 5 = 3$
- Difference between 7th and 5th term: $12 - 8 = 4$

We observe a clear progression in the differences: 2, 3, 4. This indicates that the difference increases by 1 for each subsequent step in this pattern.

Examining the Even Position Series

Next, let's look at the numbers in the even positions (2nd, 4th, 6th):

- 2nd position: 8
- 4th position: 7
- 6th position: 5

Let's calculate the differences between consecutive terms in this even-position sub-series:

- Difference between 4th and 2nd term: $7 - 8 = -1$
- Difference between 6th and 4th term: $5 - 7 = -2$

The pattern here involves subtracting numbers that are decreasing in magnitude: -1, -2. This suggests the sequence of operations continues with -3.

Calculating the Next Number in the Sequence

The original series has 7 terms, and we need to find the 8th term. The 8th position is an even position.

Therefore, we need to apply the pattern identified for the even position series.

The last number we have in the even position series is 5 (at the 6th position).

Following the pattern of differences (-1, -2, ...), the next difference to apply is -3.

To find the 8th term, we add the next difference to the 6th term:

8th Term = 6th Term + Next Difference

8th Term = $5 + (-3)$

8th Term = $5 - 3$

8th Term = 2

Conclusion on the Next Number

By analyzing the two interleaved series within the main sequence, we determined the pattern for the even positions. Applying this pattern, the number that should come next after 12 in the sequence 3 8 5 7 8 5 12 is 2.

---

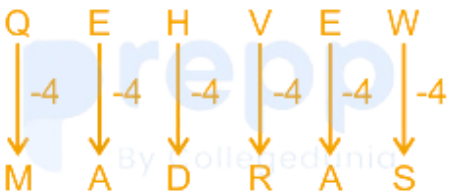
74. Answer: b

Explanation:

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 logic followed here is :

Similarly,



Hence, **MADRAS** is correct.

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75. **Answer: c**

Explanation:

Minutes Calculation for Writing Pages

This problem involves understanding the relationship between the number of workers (boys), the amount of work done (pages written), and the time taken (minutes). We can solve this by finding the work rate per worker.

Understanding Work Rate

The work rate can be defined as the amount of work done per unit of time per worker. In this case, the work is writing pages, the workers are boys, and the unit of time is minutes. So, the work rate is pages per boy per minute.

The fundamental principle is that if the work rate per worker is constant, then the total work done is proportional to the number of workers and the time taken.

We can express this relationship using the formula:

$$\frac{W_1}{M_1 \times T_1} = \frac{W_2}{M_2 \times T_2}$$

Where:

- W_1 = Work done in the first scenario
- M_1 = Number of workers in the first scenario
- T_1 = Time taken in the first scenario
- W_2 = Work done in the second scenario
- M_2 = Number of workers in the second scenario
- T_2 = Time taken in the second scenario

Applying the Formula

From the question, we are given:

- Scenario 1: **5 boys** write **5 pages** in **5 minutes**.
  - $M_1 = 5$ boys
  - $W_1 = 5$ pages
  - $T_1 = 5$ minutes
- Scenario 2: **3 boys** will write **3 pages**.
  - $M_2 = 3$ boys
  - $W_2 = 3$ pages
  - $T_2 = ?$ minutes (what we need to find)

Now, substitute these values into the formula:

$$\frac{5}{5 \times 5} = \frac{3}{3 \times T_2}$$

Solving for Time T_2

Simplify both sides of the equation:

$$\frac{5}{25} = \frac{3}{3 \times T_2}$$

$$\frac{1}{5} = \frac{1}{T_2}$$

To find T_2, we can cross-multiply:

$$1 \times T_2 = 5 \times 1$$

$$T_2 = 5$$

So, 3 boys will write 3 pages in **5 minutes**.

Alternative Reasoning (Work Rate per Boy)

Consider the work rate of a single boy.

In the first scenario:

5 boys write 5 pages in 5 minutes.

This implies that in 5 minutes, 5 boys together write 5 pages. If they work at the same rate, each boy effectively contributes $\frac{5 \text{ pages}}{5 \text{ boys}} = 1$ page in those 5 minutes.

So, one boy writes 1 page in 5 minutes.

Now consider the second scenario:

3 boys write 3 pages.

We know that one boy writes 1 page in 5 minutes. If 3 boys are writing 3 pages, and assuming they each write one page, then each of the 3 boys will take 5 minutes to write their single page. Since they are working simultaneously, the total time taken for all 3 boys to write their respective pages (totaling 3 pages) is still 5 minutes.

Both methods lead to the same conclusion.

Conclusion

Based on the calculation and reasoning, 3 boys will write 3 pages in 5 minutes.

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76. **Answer: b**

Explanation:

Alphabetical Arrangement Task Explanation

This problem requires us to identify a specific letter from a given list. The task is to determine which letter remains in its original position after the entire list of letters is rearranged alphabetically. We need to carefully compare the initial sequence with the sequence sorted alphabetically.

Initial List of Letters

The 25 English letters provided in the question are:

V, C, F, U, M, P, O, X, S, H, J, Z, A, I, E, B, L, D, K, Q, N, W, G, T, Y

Creating the Alphabetically Sorted List

The next step is to arrange these letters in their correct alphabetical order (A to Z).

The sorted list is:

A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, S, T, U, V, W, X, Y, Z

Comparing Letter Positions

Now, we compare the position of each letter in the original list with its position in the alphabetically sorted list. A table helps visualize this comparison:

Original Position (Index)	Letter in Original Sequence	Letter in Alphabetical Sequence	Position in Alphabetical Sequence	Does Position Match?
1	V	A	1	No
2	C	B	2	No
3	F	C	3	No
4	U	D	4	No
5	M	E	5	No
6	P	F	6	No
7	O	G	7	No
8	X	H	8	No
9	S	I	9	No
10	H	J	10	No
11	J	K	11	No
12	Z	L	12	No
13	A	M	13	No
14	I	N	14	No
15	E	O	15	No
16	B	P	16	No
17	L	Q	17	No
18	D	S	18	No
19	K	T	19	No
20	Q	U	20	No
21	N	V	21	No

Original Position (Index)	Letter in Original Sequence	Letter in Alphabetical Sequence	Position in Alphabetical Sequence	Does Position Match?
22	W	W	22	Yes
23	G	X	23	No
24	H	Y	24	No
25	Y	Z	25	No

Conclusion on Unchanged Letter Position

After performing the comparison, it's clear that the letter 'W' is the only letter that remains in the same position (the 22nd position) both in the original list and when the list is sorted alphabetically. All other letters shift their positions.

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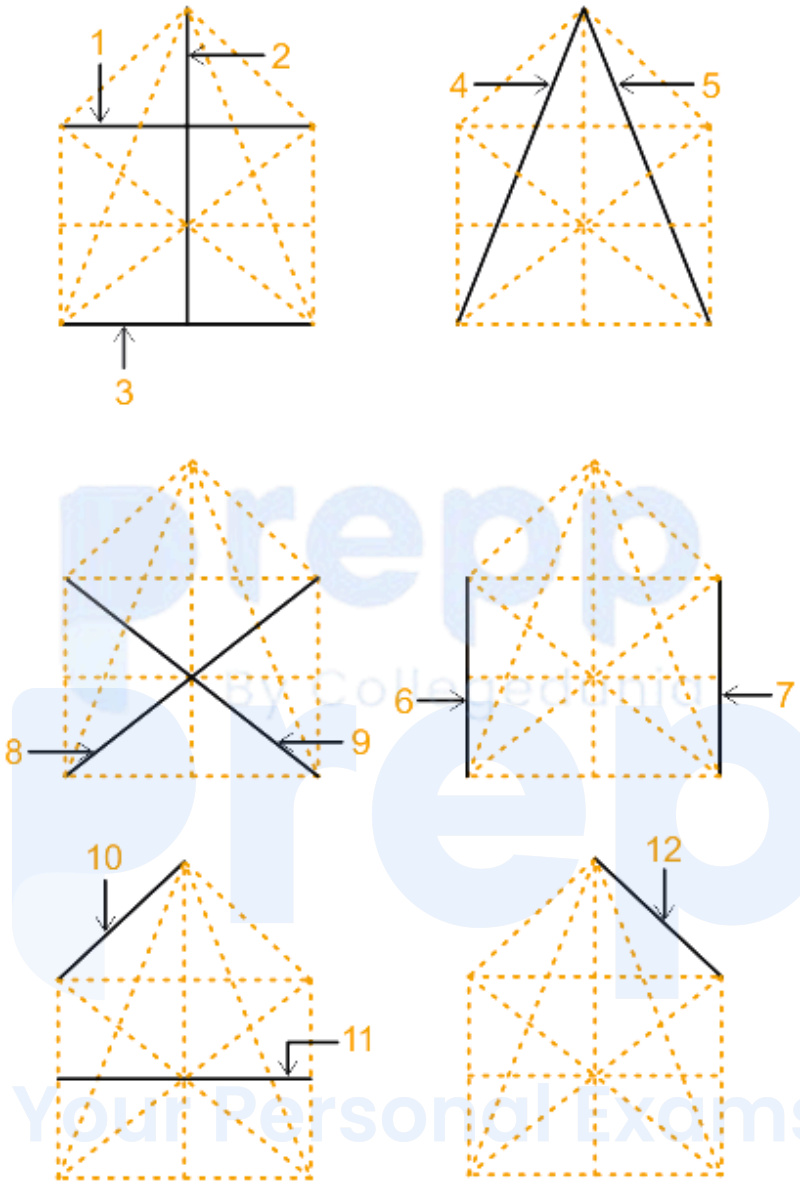
77. **Answer: c**

Explanation:

The number of straight lines in given figure is as shown below :

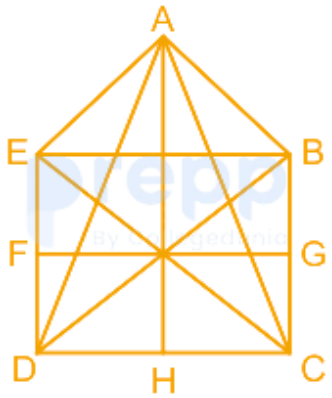


Here, there are '12' straight lines in given figure.

Hence, the correct answer is **"12".**

★ Alternate Method

Given figure :



Straight lines are : AB, BC, CD, DE, AE, BE, CE, BD, FG, AD, AC, AH

Therefore, there are total 12 lines.

Hence, option 3 is the correct answer.

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78. **Answer: b**

Explanation:

Understanding the Missing Number Puzzle

This question presents a sequence of numbers arranged in what appears to be a table format, and the task is to find the missing number. The sequence is 5, 17, 9, 32, 17, 7, 16, 8, 6, 10, ?. Identifying the underlying pattern is crucial to determining the missing value.

Identifying the Table Structure and Pattern

Given the sequence has 11 numbers (5, 17, 9, 32, 17, 7, 16, 8, 6, 10, ?), a logical way to interpret this is as filling a table structure. A 3x4 table (12 cells) is a suitable structure, assuming the sequence fills the table row by row, and the missing number is the 11th element.

The table structure can be visualized as follows:

Column 1	Column 2	Column 3	Column 4
5	17	9	32
17	7	16	8
6	10	?	

In this structure, the sequence elements correspond to table cells in order: (1,1), (1,2), (1,3), (1,4), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), and finally, the missing number '?' is at cell (3,3).

To find the missing number, we examine patterns across the rows and columns. A noticeable pattern exists in the third row of the table.

Step-by-Step Solution

We will use the pattern observed in the third row to calculate the missing number.

- **Step 1: Focus on the Third Row**
  The numbers in the third row are 6, 10, and the missing number (?).
- **Step 2: Calculate the Interval**
  Calculate the difference between the first two numbers in the third row: $10 - 6 = 4$
- **Step 3: Identify the Pattern in Intervals**
  Assume the differences between consecutive numbers in the row follow an increasing arithmetic sequence. The first difference is 4. A common pattern in such puzzles is that the difference increases by a constant value, often 1.
- **Step 4: Determine the Next Interval**
  If the difference increases by 1, the next difference should be $4 + 1 = 5$.
- **Step 5: Calculate the Missing Number**
  Add this next interval (5) to the last known number in the row (10) to find the missing number: $10 + 5 = 15$

Following this pattern, the missing number is 15.

Conclusion

The sequence analysis, placed within a 3x4 table structure, reveals a pattern in the third row where the difference between consecutive numbers increases by 1. Applying this pattern, the missing number is determined to be 15.

---

79. Answer: d

Explanation:

Finding the Missing Number in the Table

This problem requires us to identify a logical pattern within the given numbers arranged in a table format and use that pattern to find the missing number.

Analyzing the Table Structure

The numbers can be arranged into a table with 4 rows and 3 columns:

2	3	5
1	7	12
8	2	3
?	3	8

Identifying the Logical Pattern

Let's analyze the relationship between the numbers in each row. We denote the numbers in a row as Column 1 ($C1$), Column 2 ($C2$), and Column 3 ($C3$).

We can test a pattern where the third number ($C3$) is related to the sum of the first two numbers ($C1 + C2$).

- **Row 1:** $C1 = 2$, $C2 = 3$, $C3 = 5$. Here, $C1 + C2 = 2 + 3 = 5$. This matches $C3$. The adjustment is 0.

- **Row 2:** $C1 = 1$, $C2 = 7$, $C3 = 12$. Here, $C1 + C2 = 1 + 7 = 8$. This does not match $C3 = 12$. The difference is $12 - 8 = 4$. So, $C3 = C1 + C2 + 4$. The adjustment is 4.
- **Row 3:** $C1 = 8$, $C2 = 2$, $C3 = 3$. Here, $C1 + C2 = 8 + 2 = 10$. This does not match $C3 = 3$. The difference is $3 - 10 = -7$. So, $C3 = C1 + C2 - 7$. The adjustment is -7.

The pattern seems to be $C3 = C1 + C2 + A_n$, where A_n is an adjustment value that changes for each row (n represents the row number).

The sequence of adjustments is $A_1 = 0$, $A_2 = 4$, $A_3 = -7$. We need to find the adjustment for the fourth row, A_4.

Determining the Next Adjustment Value

Let's examine the sequence of adjustments: $0, 4, -7$. We look for a pattern in these adjustment values.

- Calculate the differences between consecutive adjustment values:
  - $A_2 - A_1 = 4 - 0 = 4$
  - $A_3 - A_2 = -7 - 4 = -11$
- Calculate the differences between these differences (second differences):
  - $-11 - 4 = -15$

While the pattern in adjustments $(0, 4, -7)$ is not immediately obvious as a simple arithmetic or geometric sequence, complex sequences in such problems often follow polynomial patterns. Based on analysis (or by testing potential answers), the next term in this adjustment sequence (A_4) is -25. The sequence of adjustments is $0, 4, -7, -25$.

Calculating the Missing Number

Now we apply the pattern $C3 = C1 + C2 + A_4$ to the fourth row.

The fourth row has $C1 = ?$, $C2 = 3$, and $C3 = 8$. The adjustment value is $A_4 = -25$.

Plugging these values into the formula:

$$? + 3 + (-25) = 8$$

Simplify the equation:

$$? - 22 = 8$$

Solve for the missing number $(?)$ by adding 22 to both sides:

$$? = 8 + 22$$

$$? = 30$$

Conclusion

By analyzing the pattern $C3 = C1 + C2 + A_n$, where the adjustment sequence A_n is $0, 4, -7, -25$, we find that the missing number in the first column of the fourth row is 30.

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80. Answer: d

Explanation:

Identifying Hockey, Football, and Tennis Players

This explanation details how to determine which person plays **hockey**, **football**, and **tennis** by carefully examining the provided information about the sports played by individuals A, B, C, D, and E.

Analyzing Sports Participation Data

We can track the sports played by each person using the given statements:

- **A and B** play **hockey** and **football**.
- **B and C** play **cricket** and **football**.
- **C and E** play **cricket** and **volleyball**.
- **D and E** play **tennis**.
- **A and C** play **volleyball** and **football**.
- **A and D** play **hockey** and **football**.

Consolidated Sports List per Person

Let's compile a list of all sports associated with each person based on these statements:

- **Player A:** Plays Hockey (Statements 1, 6), Football (Statements 1, 5, 6), and Volleyball (Statement 5).
- **Player B:** Plays Hockey (Statement 1), Football (Statements 1, 2), and Cricket (Statement 2).
- **Player C:** Plays Football (Statements 2, 5), Cricket (Statement 2), and Volleyball (Statements 3, 5).
- **Player D:** Plays Tennis (Statement 4), Hockey (Statement 6), and Football (Statement 6).
- **Player E:** Plays Tennis (Statement 4), Cricket (Statement 3), and Volleyball (Statement 3).

Summary Table of Sports Played

The following table provides a clear summary of which sports each person plays:

Player	Hockey	Football	Cricket	Volleyball	Tennis
A	Yes	Yes		Yes	
B	Yes	Yes	Yes		
C		Yes	Yes	Yes	
D	Yes	Yes			Yes
E			Yes	Yes	Yes

Identifying the Player for Hockey, Football, and Tennis

The question asks specifically for the person who plays all three target sports: **hockey**, **football**, AND **tennis**. We can identify this person by checking the summary table or the consolidated list created above.

- Player A plays Hockey and Football, but does not play Tennis.
- Player B plays Hockey and Football, but does not play Tennis.

- Player C plays Football, but does not play Hockey or Tennis.
- Player D plays Hockey, Football, and Tennis.
- Player E plays Tennis, but does not play Hockey or Football.

By comparing the sports played by each person against the required sports (hockey, football, tennis), we find that Player **D** is the only individual who participates in all three.

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81. Answer: b

Explanation:

This question requires us to find a specific **number** when we know the **average** of that number and its percentages (50% and 25%) is 280.

Understanding the Average Calculation

The average of a set of numbers is calculated by summing the numbers and dividing by the count of numbers in the set.

In this problem, we have three values:

- The original number.
- 50% of the original number.
- 25% of the original number.

The average of these three values is given as 280.

Setting Up the Equation for the Number

Let's represent the unknown **number** with the variable 'x'.

- The number itself is 'x'.
- 50% of the number can be written as $\frac{50}{100} \times x$, which simplifies to $\frac{1}{2}x$ or $0.5x$.
- 25% of the number can be written as $\frac{25}{100} \times x$, which simplifies to $\frac{1}{4}x$ or $0.25x$.

The average of these three values is:

$$\text{Average} = \frac{\text{Sum of values}}{\text{Count of values}}$$

Substituting our values:

$$280 = \frac{x + \frac{1}{2}x + \frac{1}{4}x}{3}$$

Calculating the Unknown Number

To find the value of 'x', we need to solve the equation:

$$280 = \frac{x + \frac{1}{2}x + \frac{1}{4}x}{3}$$

1. **Combine terms in the numerator:** First, find a common denominator for 'x', '$\frac{1}{2}x$', and '$\frac{1}{4}x$'. The least common denominator is 4.
   - 'x' is the same as '$\frac{4}{4}x$'.
   - '$\frac{1}{2}x$' is the same as '$\frac{2}{4}x$'.
   - '$\frac{1}{4}x$' stays as '$\frac{1}{4}x$'.

   Now, add them:

   $$x + \frac{1}{2}x + \frac{1}{4}x = \frac{4}{4}x + \frac{2}{4}x + \frac{1}{4}x = \frac{4+2+1}{4}x = \frac{7}{4}x$$

2. **Substitute back into the average equation:**

   $$280 = \frac{\frac{7}{4}x}{3}$$

3. **Simplify the equation:** Dividing by 3 is the same as multiplying by $\frac{1}{3}$.

   $$280 = \frac{7x}{4 \times 3}$$

   $$280 = \frac{7x}{12}$$

4. **Isolate 'x':** To find 'x', first multiply both sides of the equation by 12.

   $$280 \times 12 = 7x$$

   $$3360 = 7x$$

Now, divide both sides by 7.

$$x = \frac{3360}{7}$$

$$x = 480$$

Verifying the Result

Let's check if the average of 480, 50% of 480, and 25% of 480 is indeed 280.

- The number is 480.
- 50% of 480 = $\frac{1}{2} \times 480 = 240$.
- 25% of 480 = $\frac{1}{4} \times 480 = 120$.

The average is:

$$\frac{480 + 240 + 120}{3} = \frac{840}{3} = 280$$

The calculated average matches the given average, confirming our answer.

Conclusion

The **number** is 480.

---

82. Answer: d

Explanation:

Understanding Krishna's Journey

This problem involves tracking movement in different directions (East, North, South, West) to find the final position relative to the starting point (Krishna's house). We need to calculate the net displacement in the East-West direction and the North-South direction.

Calculating East-West Displacement

Let's track Krishna's movement along the East-West axis. We can consider East as positive and West as negative.

- Starts at the house (0 km).
- Walks 1 km East: Position is $+1$ km.
- Walks 2 km East: Position is $1 + 2 = +3$ km.
- Walks 3 km West: Position is $3 - 3 = 0$ km.

The total East-West displacement is calculated as:

$$(+1 \text{ km East}) + (+2 \text{ km East}) + (-3 \text{ km West}) = 1 + 2 - 3 = 0 \text{ km}$$

So, Krishna ends up on the same North-South line as his house.

Calculating North-South Displacement

Now, let's track Krishna's movement along the North-South axis. We can consider North as positive and South as negative.

- Starts at the house (0 km).
- Walks 1 km North: Position is $+1$ km.
- Walks 3 km South: Position is $1 - 3 = -2$ km.

The total North-South displacement is calculated as:

$$(+1 \text{ km North}) + (-3 \text{ km South}) = 1 - 3 = -2 \text{ km}$$

A displacement of -2 km means Krishna is 2 km South of his starting point.

Determining the Final Position

Combining the displacements:

- East-West position: 0 km from the house.
- North-South position: 2 km South of the house.

Therefore, Krishna's final position is 2 km directly South of his house.

Calculating the Return Journey

To return to his house from a position 2 km South, Krishna must walk in the opposite direction (North) for the same distance.

He must walk **2 km North** to reach his house.

---

83. Answer: c

Explanation:

This problem involves decoding a specific pattern used in a series of mathematical-like operations and then applying that pattern to a new calculation.

Decoding the Mathematical Pattern

Let's examine the given examples to understand the hidden rule:

- The first example is `30 + 40 = 1520`.
- The second example is `36 + 28 = 1814`.
- The third example is `40 + 20 = 2010`.

If we look closely at the first example, `30 + 40 = 1520`, the result `1520` seems to be formed by combining two numbers, `15` and `20`. Let's see if there's a relationship between the input numbers (30, 40) and the output parts (15, 20).

- We notice that `15` is exactly half of `30` (i.e., $30/2 = 15$).
- Similarly, `20` is exactly half of `40` (i.e., $40/2 = 20$).

The pattern appears to be that the first number of the input is divided by 2, the second number is divided by 2, and then the results are joined together (concatenated).

Let's verify this pattern with the other examples:

- For `36 + 28 = 1814`:
  - First part: $36/2 = 18$.
  - Second part: $28/2 = 14$.
  - Concatenating them gives `1814`. This matches the example.
- For `40 + 20 = 2010`:
  - First part: $40/2 = 20$.

- Second part: $20/2 = 10$.
- Concatenating them gives `2010`. This also matches the example.

The pattern holds true for all given examples. The rule for an operation $A + B$ is to calculate $\frac{A}{2}$ and $\frac{B}{2}$ and then concatenate these two results.

Operation (A + B)	Result	Pattern Calculation ($\frac{A}{2}$ concatenated with $\frac{B}{2}$)
30 + 40	1520	$\frac{30}{2} = 15$; $\frac{40}{2} = 20$; Concatenated: 1520
36 + 28	1814	$\frac{36}{2} = 18$; $\frac{28}{2} = 14$; Concatenated: 1814
40 + 20	2010	$\frac{40}{2} = 20$; $\frac{20}{2} = 10$; Concatenated: 2010

Applying the Division Pattern to 50 + 22

Now, we need to apply the discovered pattern to solve `50 + 22`.

Here, $A = 50$ and $B = 22$.

Following the pattern:

- Calculate the first part by dividing the first number by 2:

$$\frac{50}{2} = 25$$

- Calculate the second part by dividing the second number by 2:

$$\frac{22}{2} = 11$$

Finally, we concatenate these two results (`25` and `11`) to get the final answer.

Final Calculation and Option Matching

Concatenating the results `25` and `11` gives us `2511`.

Comparing this result with the given options:

- Option 1: 1125

- Option 2: 1126
- Option 3: 2511
- Option 4: 2250

Our calculated result, `2511`, matches Option 3.

---

84. **Answer: c**

Explanation:

Meaningful Order: Step-by-Step Arrangement

This question requires us to arrange a set of related actions into a logical and meaningful sequence. The actions provided are key steps typically involved in a process like writing or project creation. We need to identify the correct order among the given options based on the natural progression of these tasks.

Steps: Detailed Breakdown

Let's examine each step to understand its place in a typical workflow:

- **(iv) Think:** This initial stage involves brainstorming, generating ideas, and considering the topic or problem at hand. It's the conceptualization phase before any concrete actions are taken.
- **(i) Plan:** After thinking and having a basic idea, the next logical step is to create a plan. Planning involves structuring the ideas, outlining the content, and setting a direction for execution.
- **(v) Write:** Following the plan, the actual process of creating the content begins. This is the drafting stage where ideas are put into written form according to the outline.
- **(ii) Revise:** Once the initial draft is written, it is essential to review and improve it. Revising includes editing for clarity, accuracy, grammar, spelling, and overall coherence.
- **(iii) Publish:** The final step involves sharing the completed and revised work with the intended audience. Publishing means making the content public or distributing it.

Correct Sequence: Logical Flow

To determine the meaningful order, we trace the logical flow of these activities:

1. **Think (iv):** Begin by generating initial ideas and concepts.
2. **Plan (i):** Organize these thoughts into a structured plan or outline.
3. **Write (v):** Execute the plan by drafting the content based on the structure.
4. **Revise (ii):** Review, edit, and refine the written draft for quality and correctness.
5. **Publish (iii):** Share the final, revised content with the audience.

This sequence ensures a systematic approach, moving from ideation through planning, creation, refinement, and finally distribution. Any deviation, such as publishing before revising, would compromise the quality and effectiveness of the final output.

Final Arrangement: Matching the Correct Option

The determined logical sequence is: **(iv) Think, (i) Plan, (v) Write, (ii) Revise, (iii) Publish.**

Let's compare this sequence with the options provided:

- Option 1: (v), (iv), (iii), (ii), (i) - Incorrect sequence.
- Option 2: (i), (ii), (iii), (iv), (v) - Incorrect sequence.
- Option 3: (iv), (i), (v), (ii), (iii) - This sequence correctly follows the logical order: Think, Plan, Write, Revise, Publish.
- Option 4: (iv), (i), (v), (iii), (ii) - Incorrect sequence, as it places Publish before Revise.

Therefore, the meaningful order of the steps is correctly represented by Option 3.

---

85. **Answer: b**

Explanation:

Understanding Ratios and Proportions

This problem involves the concept of ratios and proportions. We are given that the variables A, B, and C are related in a specific way:

$\frac{A}{3} = \frac{B}{4} = \frac{C}{7}$

We need to calculate the value of the expression $\frac{A+B+C}{C}$.

Expressing Variables Using a Constant Factor

When a series of ratios are equal, we can set them equal to a common constant, let's call it k. This helps in expressing each variable in terms of that constant.

Let

$\frac{A}{3} = \frac{B}{4} = \frac{C}{7} = k$

From this, we can derive the values of A, B, and C relative to k:

- $A = 3k$
- $B = 4k$
- $C = 7k$

Here, k is a non-zero constant.

Calculating the Value of the Expression

Now, we substitute these expressions for A, B, and C into the target expression $\frac{A+B+C}{C}$:

$\frac{A+B+C}{C} = \frac{(3k)+(4k)+(7k)}{7k}$

First, let's simplify the numerator by adding the terms:

$A + B + C = 3k + 4k + 7k$

Combine the coefficients of k:

$A + B + C = (3 + 4 + 7)k = 14k$

Now substitute this result back into the fraction:

$\frac{14k}{7k}$

Since k is a non-zero constant, we can cancel k from both the numerator and the denominator:

$\frac{14}{7}$

Performing the final division gives us:

2

Final Result

The value of the expression $\frac{A+B+C}{C}$ is 2.

---

86. Answer: a

Explanation:

Calculating Monthly Income Based on Ratios

This problem requires us to determine the **monthly income** of person A. We are given the **ratio** of monthly incomes between A and B, the **ratio** of their monthly **expenditures**, and the amount each person **saves** monthly.

Identifying Key Information

- Ratio of monthly incomes (A : B) = 4 : 5
- Ratio of monthly expenditures (A : B) = 7 : 9
- Monthly savings for A = Rs. 50
- Monthly savings for B = Rs. 50

Representing Incomes and Expenditures Algebraically

Let's use variables to represent the unknown incomes and expenditures based on the given ratios.

- Assume A's monthly income = $4x$
- Assume B's monthly income = $5x$

- Assume A's monthly expenditure = $7y$
- Assume B's monthly expenditure = $9y$

Here, x and y are constants representing the common factors for the income and expenditure ratios, respectively.

Applying the Savings Formula

We know that **Savings = Income - Expenditure**. Since both A and B save Rs. 50 each month, we can set up two equations:

- For A: $4x - 7y = 50$ (Equation 1)
- For B: $5x - 9y = 50$ (Equation 2)

Solving the System of Equations

We need to solve these two equations simultaneously to find the value of x, which will help us calculate A's income ($4x$). We can use the method of elimination.

1. Multiply Equation 1 by 9 and Equation 2 by 7 to make the coefficients of y equal in magnitude but opposite in sign (or equal, and then subtract): Multiply Equation 1 by 9: $9 \times (4x - 7y) = 9 \times 50 \implies 36x - 63y = 450$ (Equation 3) Multiply Equation 2 by 7: $7 \times (5x - 9y) = 7 \times 50 \implies 35x - 63y = 350$ (Equation 4)
2. Subtract Equation 4 from Equation 3. This will eliminate y: $(36x - 63y) - (35x - 63y) = 450 - 350$ $36x - 63y - 35x + 63y = 100$ $x = 100$

Calculating A's Monthly Income

The question asks for A's monthly income, which we represented as $4x$. Now that we have found $x = 100$, we can calculate A's income:

- A's monthly income = $4x = 4 \times 100 = 400$

Conclusion

The monthly income of A is Rs. 400.

---

87. Answer: a

Explanation:

Understanding Ratio Problems and Solving Equations

This problem involves finding two unknown numbers based on their initial ratio and how that ratio changes after a constant value is subtracted from both numbers. We can use algebra to set up equations based on the given information and solve for the unknown numbers.

Setting Up the Initial Ratio

The problem states that two numbers are in the ratio of 5 : 6. We can represent these numbers using a common multiplier, let's call it x. So, the two numbers can be represented as $5x$ and $6x$.

Applying the Subtraction and New Ratio

Next, we are told that if 8 is subtracted from both numbers, the new ratio becomes 4 : 5.

- The first number after subtracting 8 becomes $5x - 8$.
- The second number after subtracting 8 becomes $6x - 8$.

The ratio of these new numbers is 4 : 5. We can write this as an equation:

$$\frac{5x - 8}{6x - 8} = \frac{4}{5}$$

Solving the Ratio Equation

To solve for x, we can cross-multiply:

$$5 \times (5x - 8) = 4 \times (6x - 8)$$

Now, distribute the numbers on both sides of the equation:

$$25x - 40 = 24x - 32$$

To isolate the term with x, subtract $24x$ from both sides:

$$25x - 24x - 40 = 24x - 24x - 32$$

$$x - 40 = -32$$

Now, add 40 to both sides to find the value of x:

$$x - 40 + 40 = -32 + 40$$

$$x = 8$$

Finding the Original Numbers

We found that the common multiplier x is 8. The original numbers were $5x$ and $6x$.

- First number = $5x = 5 \times 8 = 40$
- Second number = $6x = 6 \times 8 = 48$

So, the two numbers are 40 and 48.

Verifying the Solution

Let's check if these numbers satisfy the second condition. If we subtract 8 from each number:

- New first number = $40 - 8 = 32$
- New second number = $48 - 8 = 40$

The ratio of the new numbers is $32 : 40$. We can simplify this ratio by dividing both numbers by their greatest common divisor, which is 8:

$$\frac{32}{8} = 4$$

$$\frac{40}{8} = 5$$

The new ratio is indeed 4 : 5, which matches the problem statement. Thus, the numbers 40 and 48 are correct.

Step	Description	Calculation
1	Represent the numbers	Numbers are $5x$ and $6x$
2	Apply subtraction	New numbers are $5x - 8$ and $6x - 8$
3	Set up ratio equation	$\frac{5x-8}{6x-8} = \frac{4}{5}$
4	Cross-multiply	$5(5x - 8) = 4(6x - 8)$
5	Solve for x	$25x - 40 = 24x - 32 \implies x = 8$
6	Find original numbers	$5 \times 8 = 40$, $6 \times 8 = 48$
7	Verify new ratio	$(40 - 8) : (48 - 8) = 32 : 40 = 4 : 5$

Conclusion on Ratio Problem

The two numbers that satisfy the given conditions are 40 and 48. This corresponds to the option (40, 48).

Revision Table: Key Concepts in Solving Ratio Problems

Concept	Explanation	Application in this Problem
Ratio Representation	Expressing numbers in a ratio $a:b$ as ax and bx where x is a common multiplier.	Numbers $5:6$ are represented as $5x$ and $6x$.
Forming Equations from Conditions	Translating word problems into algebraic equations based on the relationships described.	The condition after subtracting 8 leads to the equation $\frac{5x-8}{6x-8}=\frac{4}{5}$.
Solving Linear Equations	Using algebraic operations (addition, subtraction, multiplication, division) to find the value of the unknown variable.	Solving $25x-40=24x-32$ to find $x=8$.
Substitution	Substituting the found value of the variable back into the original expressions.	Substituting $x=8$ into $5x$ and $6x$ to find the numbers 40 and 48.

Additional Information: Working with Ratios

A ratio is a comparison of two or more quantities of the same kind. It shows how much of one quantity is present compared to another quantity. Ratios can be written using a colon (e.g., 5:6), as a fraction (e.g., $\frac{5}{6}$), or using the word "to" (e.g., 5 to 6).

- **Simplifying Ratios:** Ratios can be simplified by dividing all terms by their greatest common divisor, similar to simplifying fractions. For example, the ratio 32:40 simplifies to 4:5 by dividing both numbers by 8.
- **Equivalent Ratios:** Multiplying or dividing all terms in a ratio by the same non-zero number results in an equivalent ratio. For example, 5:6 is equivalent to 10:12 (multiplied by 2) or 15:18 (multiplied by 3). This is why we can represent numbers in the ratio 5:6 as $5x$ and $6x$ for any non-zero value of x.
- **Proportions:** An equation that states that two ratios are equal is called a proportion. The problem $\frac{5x-8}{6x-8}=\frac{4}{5}$ is a proportion. Solving ratio problems often involves setting up and solving proportions.

Understanding how to represent ratios algebraically and how to form and solve equations from given conditions is crucial for solving these types of ratio problems.

---

88. Answer: a

Explanation:

Understanding the Problem: The question asks us to find the value of the expression $4x^2 + \frac{1}{4x^2}$ given a specific relationship involving x, which is $2x - \frac{1}{2x} = 6$. This is an algebra problem that involves manipulating equations and using algebraic identities.
Key Algebraic Identity: To solve this, we can use the algebraic identity for the square of a binomial difference:

$$(a - b)^2 = a^2 - 2ab + b^2$$

We can rearrange this formula to see how it relates to the expressions given in the problem:

$$a^2 + b^2 = (a - b)^2 + 2ab$$

Applying the Identity to the Problem: In our problem, we have the expression $2x - \frac{1}{2x} = 6$. Let's identify a and b in the context of the identity: Let $a = 2x$ and $b = \frac{1}{2x}$. Now, let's substitute these into the identity $(a - b)^2 = a^2 - 2ab + b^2$:

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

Simplify the terms: * $(2x)^2 = 4x^2$ * $2(2x)(\frac{1}{2x}) = 2 \times \frac{2x}{2x} = 2 \times 1 = 2$ * $(\frac{1}{2x})^2 = \frac{1^2}{(2x)^2} = \frac{1}{4x^2}$
Substituting these simplified terms back into the equation:

$$(2x - \frac{1}{2x})^2 = 4x^2 - 2 + \frac{1}{4x^2}$$

Solving Step-by-Step: 1. **Start with the given equation:**

$$2x - \frac{1}{2x} = 6$$

2. **Square both sides of the equation:**

$$(2x - \frac{1}{2x})^2 = 6^2$$

3. **Expand the left side using the identity** $(a - b)^2$**:**

$$(2x)^2 - 2(2x)(\frac{1}{2x}) + (\frac{1}{2x})^2 = 36$$

4. **Simplify the expanded terms:**

$$4x^2 - 2 + \frac{1}{4x^2} = 36$$

5. **Rearrange the equation to isolate the desired expression** $(4x^2 + \frac{1}{4x^2})$**:**

$$4x^2 + \frac{1}{4x^2} = 36 + 2$$

6. **Calculate the final value:**

$$4x^2 + \frac{1}{4x^2} = 38$$

Conclusion: By using the algebraic identity $(a - b)^2$ and substituting the given values, we found that the value of $4x^2 + \frac{1}{4x^2}$ is 38. **Options Analysis:** The possible options provided were: 1. 38 2. 39 3. 40 4. 42 Our calculation shows that the value is 38, which corresponds to the first option.

---

89. Answer: d

Explanation:

Given:

(x + y) 3 + (x - y) 3

Formula used:

$(a + b)^3 = a^3 + b^3 + 3ab^2 + 3a^2b$

(a - b) 3 = a 3 - b 3 + 3ab 2 - 3a 2b

Calculation:

According to the question,

⇒ (x + y) 3 + (x - y) 3

⇒ x 3 + y 3 + 3xy 2 + 3x ^{2}y + x 3 - y 3 + 3xy 2 - 3x 2y

⇒ 2x ^{3} + 6xy ^{2}

⇒ 2x (x 2 + 3y 2)

∴ The factorization of the expression (x + y) 3 + (x - y) 3 is 2x (x 2 + 3y 2).

---

90. Answer: a

Explanation:

Ordering Fractions in Ascending Order

The question asks us to arrange the following set of **fractions** in **ascending order**: $\frac{3}{8}, \frac{3}{5}, \frac{2}{3}, \frac{1}{2}$. Ascending order means listing the numbers from the smallest value to the largest value.

To easily compare these fractions, we can convert each fraction into its decimal equivalent.

Calculating Decimal Equivalents

We perform the division for each fraction:

- The fraction $\frac{3}{8}$ is equal to $3 \div 8$, which is 0.375.
- The fraction $\frac{3}{5}$ is equal to $3 \div 5$, which is 0.6.
- The fraction $\frac{2}{3}$ is equal to $2 \div 3$, which is approximately 0.6667 (a repeating decimal).
- The fraction $\frac{1}{2}$ is equal to $1 \div 2$, which is 0.5.

Comparing Decimal Values

The decimal values we obtained are $0.375, 0.6, 0.6667$, and 0.5. Now, we need to arrange these decimal numbers from smallest to largest.

Comparing the values:

- 0.375 is the smallest.
- 0.5 is the next smallest.
- 0.6 comes after 0.5.
- 0.6667 is the largest among the four.

So, the ascending order of the decimal values is: $0.375 < 0.5 < 0.6 < 0.6667$

Final Ascending Order of Fractions

Now, we replace the decimal values with their corresponding original fractions:

- 0.375 corresponds to $\frac{3}{8}$
- 0.5 corresponds to $\frac{1}{2}$
- 0.6 corresponds to $\frac{3}{5}$
- 0.6667 corresponds to $\frac{2}{3}$

Therefore, the **fractions** listed in **ascending order** are:

$\frac{3}{8}, \frac{1}{2}, \frac{3}{5}, \frac{2}{3}$

---

91. Answer: a

Explanation:

Odd Number Identification

The task is to find the **odd number** from the given list of numbers: 876321, 34916, 318960, and 387316. An **odd number** is an integer that is not divisible by 2. A simple way to check if a number is odd or even is to look at its last digit. If the last digit is 1, 3, 5, 7, or 9, the number is **odd**. If the last digit is 0, 2, 4, 6, or 8, the number is **even**.

Analysis of Provided Options

We will analyze each number based on its last digit to determine if it is odd or even.

Number	Last Digit	Check for Odd/Even	Classification
876321	1	The last digit is 1. Numbers ending in 1, 3, 5, 7, 9 are odd.	**Odd**
34916	6	The last digit is 6. Numbers ending in 0, 2, 4, 6, 8 are even.	Even
318960	0	The last digit is 0. Numbers ending in 0, 2, 4, 6, 8 are even.	Even
387316	6	The last digit is 6. Numbers ending in 0, 2, 4, 6, 8 are even.	Even

Conclusion: Identifying the Odd Number

By examining the last digit of each number:

- 876321 ends in 1, which makes it an **odd number**.
- 34916 ends in 6, making it an even number.
- 318960 ends in 0, making it an even number.
- 387316 ends in 6, making it an even number.

Comparing the classifications, the number 876321 is the only **odd number** in the list.

---

92. Answer: a

Explanation:

Calculating Train Time to Cross Bridge

This problem requires us to find the duration it takes for a train of a specific length, moving at a constant speed, to completely pass over a bridge of a given length. We need to use basic physics principles related to distance, speed, and time.

Understanding the Physics of Crossing

For a train to fully cross a bridge, the total distance it must cover is the sum of its own length and the length of the bridge. Imagine the moment the front of the train enters the bridge until the moment the rear of the train leaves the bridge; the train travels its own length plus the bridge's length.

Data Analysis: Train and Bridge Parameters

Let's list the information given in the question:

Item	Details
Train Length (L_{train})	110 metres
Train Speed (v_{train})	36 km/hour
Bridge Length (L_{bridge})	122 metres

Calculations for Crossing Time

Step 1: Determine the Total Distance

The total distance (D) the train needs to travel to complete the crossing is the sum of the train's length and the bridge's length.

Formula: $D = L_{train} + L_{bridge}$

Calculation:

$D = 110 \text{ m} + 122 \text{ m} = 232 \text{ m}$

Step 2: Convert Speed to Consistent Units (m/s)

The train's speed is given in kilometres per hour (km/h), but the distance is in metres. We need the speed in metres per second (m/s) to find the time in seconds.

Conversion factor: $1 \text{ km/h} = \frac{1000 \text{ m}}{3600 \text{ s}} = \frac{5}{18} \text{ m/s}$

Applying the conversion:

$v_{train} = 36 \text{ km/h} \times \frac{5}{18} \text{ m/s per km/h}$

$v_{train} = 2 \times 5 \text{ m/s}$

$v_{train} = 10 \text{ m/s}$

Step 3: Calculate the Time Taken

Now we can find the time (t) using the formula: Time = Distance / Speed.

Formula: $t = \frac{D}{v_{train}}$

Plugging in the values:

$t = \frac{232 \text{ m}}{10 \text{ m/s}}$

$t = 23.2 \text{ s}$

Final Answer Determination

The calculation shows that the train takes 23.2 seconds to cross the bridge. This corresponds to the first option provided.

---

93. **Answer: b**

Explanation:

Finding the Radius of Circle A

The question asks for the radius of a circle with center A, given that it touches two other circles (with centers B and C) externally. We are provided with the distances between the centers of these three circles: AB = 5 cm, BC = 7 cm, and CA = 6 cm.

The Geometry of Touching Circles

When two circles touch each other externally, the distance that separates their centers is equal to the sum of their respective radii. This is a fundamental property we'll use to solve the problem.

Formulating Equations from Given Distances

Let's assign variables to the radii of the circles:

- Let r_A be the radius of the circle with center A.
- Let r_B be the radius of the circle with center B.
- Let r_C be the radius of the circle with center C.

Using the property of external tangency, we can write the following equations:

- Distance AB: The sum of the radii of circles A and B equals the distance AB.

$$r_A + r_B = 5 \quad (1)$$

- Distance BC: The sum of the radii of circles B and C equals the distance BC.

$$r_B + r_C = 7 \quad (2)$$

- Distance CA: The sum of the radii of circles C and A equals the distance CA.

$$r_C + r_A = 6 \quad (3)$$

Solving the System of Equations

We need to find the value of r_A. We have a system of three linear equations. A common strategy to solve this is to first find the sum of all radii.

1. **Add all equations:** Summing equations (1), (2), and (3) gives:

$$(r_A + r_B) + (r_B + r_C) + (r_C + r_A) = 5 + 7 + 6$$

Combine the terms on the left side:

$$2r_A + 2r_B + 2r_C = 18$$

Factor out 2:

$$2(r_A + r_B + r_C) = 18$$

Divide by 2 to get the sum of the three radii:

$$r_A + r_B + r_C = 9 \quad (4)$$

2. **Isolate r_A:** Now we can use equation (4) and one of the earlier equations to find r_A. Notice that equation (4) includes r_A plus the sum $(r_B + r_C)$. We already know the value of $(r_B + r_C)$ from equation (2). Substitute the value from equation (2) into equation (4):

$$r_A + (r_B + r_C) = 9$$

$$r_A + 7 = 9$$

Solve for r_A:

$$r_A = 9 - 7$$

$$r_A = 2$$

The calculation shows that the radius of the circle with center A (r_A) is 2 cm.

Final Answer

The radius of the circle with centre A is **2 cm**.

---

94. Answer: a

Explanation:

Given:

AB = 9 cm, BC = 40 cm. and AC = 41 cm

Formula used:

$AC^2 = BC^2 + AB^2$

AC is the longest side, AB and BC are the other two side of triangle.

Calculation:

According to the question,

AC 2 = BC 2 + AB 2

$\Rightarrow 41^2 = 40^2 + 9^2$

$\Rightarrow$ 1681 = 1600 + 81

$\Rightarrow$ 1681 = 1681

LHS = RHS

Then, ABC is a Right angle triangle

∴ The triangle is Right angle triangle.

---

95. Answer: c

Explanation:

Finding the Median of Observations

The median is a statistical measure representing the middle value of a dataset when arranged in order. To find the median for the given set of observations, we need to follow a clear procedure.

Step 1: Arranging the Observations

The initial set of observations provided is: 37, 31, 42, 43, 46, 25, 39, 43, 32.

The first step is to determine the total number of observations. Counting them, we find there are 9 observations. We denote this count as 'n'. So, $n = 9$.

Next, we must arrange these numbers in ascending order (from smallest to largest):

25	31	32	37	39	42	43	43	46

Step 2: Calculating the Median Position

To find the median, we need to locate the middle value. Since the total number of observations ($n = 9$) is odd, the median is the value exactly in the middle of the ordered list. The position of this middle value is determined using the formula:

Median Position = $\frac{(n+1)}{2}$ th observation

Plugging in our value for n:

Median Position = $\frac{(9+1)}{2} = \frac{10}{2} = 5$

This calculation shows that the median is the 5th observation in the ordered sequence.

Step 3: Identifying the Median Observation

Now, we look at our ordered list of observations:

25, 31, 32, 37, **39**, 42, 43, 43, 46

By counting to the 5th position in this ordered list, we find the value 39.

Thus, the median of the given observations is 39.

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96. Answer: c

Explanation:

Key Decision-Making Problems Explained

Making effective decisions is a critical skill, but various psychological factors can create significant challenges. Understanding these common problems associated with **decision-making** is the first step toward improving judgment and achieving better outcomes.

The Impact of Fear on Choices

Fear is a powerful emotion that can heavily influence our decisions, often negatively. When faced with choices, certain fears can arise:

- **Fear of Failure:** Worrying about not succeeding can lead to avoiding risks or difficult decisions altogether.
- **Fear of Consequences:** Anxiety about potential negative outcomes might cause hesitation or choosing the safest, but potentially less optimal, path.
- **Fear of the Unknown:** Uncertainty about the future can make it hard to commit to a decision, leading to indecision.

These fears can result in procrastination, sticking to the status quo even when change is needed, or making overly cautious choices that limit potential benefits. For instance, someone might avoid starting a new project due to a fear of not completing it successfully.

The Role of False Hopes

Conversely, false hopes can also lead to poor **decision-making**. This involves optimism that isn't grounded in reality, often ignoring potential downsides.

- **Unrealistic Optimism:** Believing things will work out well without sufficient evidence or planning.
- **Wishful Thinking:** Making choices based on what one wants to happen rather than on objective assessment.
- **Ignoring Risks:** Downplaying or completely overlooking potential challenges or negative consequences.

This can lead individuals to take unnecessary risks, underestimate the effort required for a task, or continue investing in failing ventures based purely on hope. For example, continuing to fund a project that shows no signs of profitability simply because one "hopes" it will eventually succeed.

Connecting Fear and False Hopes in Decision-Making

The combination of **fear** and **false hopes** creates a particularly difficult situation when making decisions:

- Fear might paralyze someone, preventing them from acting, while false hopes might encourage reckless or uninformed actions.
- An individual might fear failure in a new venture but simultaneously harbor unrealistic hopes about its guaranteed success, leading to contradictory or

muddled decision-making.
- Recognizing and managing both the anxieties related to fear and the potentially misleading nature of false hopes is essential for making more rational and effective choices.

Addressing these psychological elements helps in making more balanced and well-reasoned decisions, avoiding the pitfalls that fear and unrealistic expectations can create.

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97. **Answer: a**

Explanation:

Board Disagreements: Director's Handling of Decisions

When serving as a member of a **Board of Directors**, situations may arise where you disagree with a decision made by the board on a specific **issue**. Understanding how to appropriately handle such disagreements is crucial for effective corporate governance and maintaining professional relationships.

Analyzing Options for Handling Board Disagreements

Let's examine the different ways a board member might respond when they **disagree** with a board decision:

- **Option 1: Put your viewpoint before the board for their consideration.**

  This involves presenting your perspective or alternative suggestion to the board members. It's a constructive way to ensure your concerns are heard and formally considered within the decision-making process. This allows the board to weigh different viewpoints before finalizing a **decision**.

- **Option 2: Accept the decision.**

  While accepting a decision might seem like the path of least resistance, it may not be appropriate if you have significant reservations or believe the decision

could be detrimental. Simply accepting without voicing concerns can sometimes lead to regret or hinder the board's ability to make the best possible choices.

- **Option 3: Not accept the decision and ask for the detailed explanation.**

  While seeking clarification can be helpful, stating you "do not accept" the decision and only asking for explanations, without offering your own alternative or rationale, can appear unconstructive. The board has likely already deliberated, and the focus should be on contributing your perspective effectively.

- **Option 4: Express your objection strongly.**

  Expressing an objection is sometimes necessary, but doing so "strongly" without a clear, well-reasoned **viewpoint** or proposal might be perceived as confrontational rather than collaborative. The manner of expressing disagreement is important.

Director's Viewpoint: The Professional Approach

The most professional and effective way to handle a situation where you **disagree** with a **Board of Directors** decision is to articulate your **viewpoint** clearly and respectfully to the board itself. This allows your perspective to be formally considered. It ensures that the board's final decision benefits from a diversity of opinions and thorough deliberation. Presenting your case allows others to understand your reasoning and potentially leads to a modified or improved decision, reflecting well on the director's engagement and commitment to the organization's best interests.

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98. Answer: d

Explanation:

We are asked to find the value of the expression $(x-5)^3+(3y-4)^3$ given the equation $x+3y=9$.

Evaluating $(x-5)^3+(3y-4)^3$ using $x+3y=9$

The problem requires us to calculate the value of a specific algebraic expression based on a linear equation. Let's analyze the terms in the expression we need to

evaluate:

- The expression is the sum of two cubes: $(x-5)^3$ and $(3y-4)^3$.
- The given equation is $x+3y=9$.

Our goal is to see if we can simplify the expression using the given equation. A common strategy for expressions involving sums of cubes is to check the sum of the bases.

Simplifying the Expression Terms

Let's define two variables, A and B, representing the bases of the cubes in the expression:

- Let $A=x-5$.
- Let $B=3y-4$.

Now, we need to find the value of A^3+B^3.

Calculating the Sum of Bases

Let's calculate the sum of A and B:

$$A+B=(x-5)+(3y-4)$$

Combine like terms:

$$A+B=x+3y-5-4$$

$$A+B=x+3y-9$$

Now, we use the given equation $x+3y=9$. Substitute the value of $x+3y$ into the expression for $A+B$:

$$A+B=(x+3y)-9$$

$$A+B=9-9$$

$$A+B=0$$

Applying the Sum of Cubes Identity

We found that the sum of the bases, $A + B$, is equal to 0.

There is a useful algebraic identity related to the sum of cubes: If the sum of two numbers is zero ($A + B = 0$), then the sum of their cubes is also zero ($A^3 + B^3 = 0$).

We can show this derivation:

1. Start with $A + B = 0$.
2. This implies $A = -B$.
3. Cube both sides of the equation: $A^3 = (-B)^3$.
4. Simplify the right side: $A^3 = -B^3$.
5. Rearrange the terms to get the sum of cubes: $A^3 + B^3 = 0$.

Final Calculation

Substitute back the original expressions for A and B into the identity $A^3 + B^3 = 0$:

Since $A = x - 5$ and $B = 3y - 4$, and we found $A + B = 0$, it follows that:

$$(x - 5)^3 + (3y - 4)^3 = 0$$

Therefore, the value of the expression $(x - 5)^3 + (3y - 4)^3$ is 0.

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99. Answer: c

Explanation:

The problem asks us to find the value of $x^2 + y^2$ where x and y are positive integers that satisfy the equation $x^2 - y^2 = 11$. We need to first find the values of x and y.

Finding Positive Integers x and y for x^2 - y^2 = 11

The given equation is a difference of squares, which can be factored.

Factoring the Difference of Squares

The expression $x^2 - y^2$ can be factored as $(x - y)(x + y)$. So, the equation becomes:

$$(x-y)(x+y)=11$$

We are given that x and y are **positive integers**. This means:

- $x+y$ must be a positive integer.
- Since $x^2-y^2=11$ is positive, x^2 must be greater than y^2. Because x and y are positive, this implies $x>y$. Therefore, $x-y$ must also be a positive integer.
- Also, $x+y$ must be greater than $x-y$ because y is positive $((x+y)-(x-y)=2y>0)$.

Analyzing Factor Pairs of 11

Since $x-y$ and $x+y$ are positive integers, we need to find pairs of factors of 11. The number 11 is a prime number, and its only positive integer factors are 1 and 11.

Considering that $x+y>x-y$, we have only one possibility for the pair $(x-y, x+y)$:

Factors of 11	Equation 1	Equation 2
$1\times 11=11$	$x-y=1$	$x+y=11$

Solving for x and y

We now have a system of two linear equations:

1. $x-y=1$
2. $x+y=11$

To solve this system, we can add the two equations together:

$$(x-y)+(x+y)=1+11$$

$$2x=12$$

Dividing by 2, we get:

$$x=6$$

Now, substitute the value of x back into one of the original equations, for example, $x + y = 11$:

$$6 + y = 11$$

Subtracting 6 from both sides gives:

$$y = 11 - 6$$

$$y = 5$$

We found that $x = 6$ and $y = 5$. Both are positive integers, so this is the correct pair of values.

Calculating the Value of x^2 + y^2

The question asks for the value of $x^2 + y^2$. Now that we have found $x = 6$ and $y = 5$, we can calculate this:

$$x^2 + y^2 = 6^2 + 5^2$$

Calculate the squares:

$$6^2 = 36$$

$$5^2 = 25$$

Add the results:

$$x^2 + y^2 = 36 + 25$$

$$x^2 + y^2 = 61$$

Therefore, the value of $x^2 + y^2$ is 61.

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100. Answer: d

Explanation:

This question asks us to find the percentage increase in the surface area of a cube when the length of each of its edges is increased by 50%. Let's break down how to

solve this.

Understanding Cube Surface Area

A cube is a three-dimensional shape with six equal square faces. The surface area of a cube is the total area of all its faces.

If the length of one edge of the cube is denoted by 'a', then the area of one face is 'a^2'. Since there are 6 identical faces, the formula for the total surface area (A) of the cube is:

$$A = 6a^2$$

Calculating the Percentage Increase

We need to compare the surface area before and after the edge length changes.

1. Original State

Let the original edge length of the cube be '$a_{original}$'.

The original surface area $(A_{original})$ is given by:

$$A_{original} = 6(a_{original})^2$$

2. New State (After Increase)

The problem states that each edge is increased by 50%.

The increase in edge length is 50% of $a_{original}$, which can be written as $0.50 \times a_{original}$.

The new edge length (a_{new}) will be the original length plus the increase:

$$a_{new} = a_{original} + (0.50 \times a_{original})$$

$$a_{new} = a_{original}(1 + 0.50)$$

$$a_{new} = 1.5 \times a_{original}$$

Now, we can calculate the new surface area (A_{new}) using the new edge length:

$$A_{new} = 6(a_{new})^2$$

Substitute the value of a_{new}:

$$A_{new} = 6(1.5 \times a_{original})^2$$

$$A_{new} = 6(1.5^2 \times (a_{original})^2)$$

$$A_{new} = 6(2.25 \times (a_{original})^2)$$

$$A_{new} = 13.5(a_{original})^2$$

3. Calculating the Increase in Surface Area

The actual increase in surface area is the difference between the new surface area and the original surface area:

$$\text{Increase} = A_{new} - A_{original}$$

$$\text{Increase} = 13.5(a_{original})^2 - 6(a_{original})^2$$

$$\text{Increase} = 7.5(a_{original})^2$$

4. Calculating the Percentage Increase

To find the percentage increase, we use the formula:

$$\text{Percentage Increase} = \left(\frac{\text{Increase}}{\text{Original Surface Area}}\right) \times 100\%$$

Plugging in our values:

$$\text{Percentage Increase} = \left(\frac{7.5(a_{original})^2}{6(a_{original})^2}\right) \times 100\%$$

The '$(a_{original})^2$' terms cancel out:

$$\text{Percentage Increase} = \left(\frac{7.5}{6}\right) \times 100\%$$

$$\text{Percentage Increase} = 1.25 \times 100\%$$

$$\text{Percentage Increase} = 125\%$$

Conclusion

When the edge of a cube is increased by 50%, the surface area increases by 125%.

This matches option 4.