

CTET 2022 Paper 2 Maths (Jan 09, 2023)

Answers

1. Answer: b

Explanation:

Understanding Development: Key Aspects and Definitions

Human development is a broad concept encompassing various changes and growth processes throughout a person's life. These changes occur across different domains, including cognitive, social, emotional, and physical aspects. Understanding these domains helps us grasp how individuals learn, interact, and mature.

Analyzing Development Domains

The question asks to identify the aspect of development concerned with the **acquisition of skills, values, and attitudes** within society, as well as the **formation of healthy interpersonal relationships**. Let's examine the options:

- **Cognitive Development:** This domain focuses on mental processes like thinking, learning, memory, problem-solving, and intelligence. While cognitive abilities support social learning, cognitive development itself isn't primarily about acquiring societal values or forming relationships.
- **Social Development:** This area directly deals with how individuals learn to interact with others, understand social rules and norms, and build relationships. It involves internalizing the **values** and **attitudes** of one's **society** and learning the necessary social **skills** to navigate social situations effectively. The **formation of healthy interpersonal relationships** is a central outcome of social development.
- **Emotional Development:** This domain involves understanding, expressing, managing, and regulating emotions. While emotions play a crucial role in social interactions, emotional development's core focus is on the individual's internal emotional world, rather than the direct acquisition of societal values or relationship skills.

- **Physical Development:** This aspect concerns growth, changes in the body, motor skills (like walking, running, fine motor coordination), and health. It is distinct from the social, value-based, and relational aspects mentioned in the question.

Connecting Development to Societal Skills and Relationships

Based on the definitions, social development is the domain that most accurately encompasses the acquisition of societal skills, values, and attitudes, alongside the crucial process of forming interpersonal relationships. It's about learning how to function effectively and appropriately within a social context.

Therefore, the aspect of development dealing with the **acquisition of skills, values and attitudes of the society** and the **formation of healthy interpersonal relationships** is specifically **Social development**.

2. Answer: d

Explanation:

Understanding Factors in Child Development

Child development is a comprehensive process involving changes across various domains – physical, cognitive, emotional, and social – from infancy through adolescence. To ensure healthy growth, several factors interact and influence how a child progresses. This question explores the key elements that contribute to a child's overall development.

Analyzing Key Factors for Child Development

The question presents three critical factors. Let's look at how each one influences a child:

- (i) **Heredity:** This factor relates to the genetic inheritance passed down from parents. Heredity determines a child's biological predispositions, including physical characteristics like eye color and height, as well as potential talents and temperamental tendencies. It lays the foundation for development.
- (ii) **Physical Environment:** This encompasses the tangible surroundings that affect a child's life. It includes elements such as nutrition, quality of housing, access to healthcare, safety conditions, exposure to pollution or toxins, and the overall stimulating nature of the living space. A positive **physical environment** supports physical health and cognitive stimulation.
- (iii) **Social Context:** This factor involves the child's interactions with people and the surrounding culture. It includes family relationships, peer interactions, educational settings, community support, cultural values, and socioeconomic conditions. A supportive **social context** is crucial for emotional well-being, social skills, and cognitive growth.

Synthesis of Development Factors

A child's journey of development is intricately shaped by the interplay of these factors. Genetics (heredity) provides the potential, but the quality of the environment (physical and social) significantly determines how this potential is realized. For instance, a child might inherit a predisposition for musical talent, but without access to instruments or encouragement (physical and social factors), this talent may not flourish.

Considering all these points, it's clear that **heredity**, the **physical environment**, and the **social context** are all vital contributors to a child's **overall development**. Each element plays a distinct yet interconnected role.

3. Answer: b

Explanation:

Understanding Child Social Development Process

The question asks to identify the specific process through which a child acquires fundamental social skills, ideas, and values. This learning occurs via interactions with influential figures in their environment, such as parents, teachers, and peers. This entire process is crucial for a child's development and integration into society.

Analyzing Key Concepts in Social Learning

Let's break down the terms related to learning and development to find the best fit for the description:

- **Social Skills, Ideas, and Values:** These are the building blocks of behavior and understanding within a social context. They include things like learning to share, understanding rules, developing empathy, and forming beliefs about the world.
- **Interaction:** This refers to the communication and engagement a child has with other people (parents, teachers, friends, etc.). It's through these interactions that learning often takes place.
- **Process:** This implies a continuous or developmental pathway of learning and adaptation.

Evaluating the Provided Options

We need to determine which option accurately describes the process of a child picking up social skills, ideas, and values through interaction:

- **Scaffolding:** This term, often used in education, refers to the support given by a more knowledgeable person (like a teacher or parent) to help a child learn a new skill or concept. While scaffolding involves interaction and helps learning, it's a specific instructional technique, not the overall process of acquiring social norms and values.
- **Socialization:** This is the term for the lifelong social learning experience through which individuals acquire norms, values, beliefs, and social skills appropriate to their social position and social roles. It directly involves learning from parents, family, peers, school, and media through various interactions. This aligns perfectly with the definition provided in the question.

- **Metacognition:** This refers to the awareness and understanding of one's own thought processes – essentially, "thinking about thinking." It's a cognitive skill related to self-monitoring and regulating learning, but it doesn't specifically describe the process of learning social behaviors and values from others.
- **Integration:** This means combining or bringing together different parts into a unified whole. While socialization leads to integration into society, integration itself is more of an outcome or a state of being part of a larger group, rather than the learning process described.

Conclusion on Social Learning Process

Based on the definitions, **Socialization** is the process where a child learns essential social skills, ideas, and values by interacting with parents, teachers, peers, and others. It encompasses the entire journey of learning how to function effectively within a society and its various groups.

4. Answer: c

Explanation:

Understanding Piaget's Adaptation in Cognitive Development

This question delves into Jean Piaget's influential theory on cognitive development, specifically asking about the mechanism children use to adjust their mental frameworks when encountering new information from their environment. Piaget believed that cognitive growth occurs through a continuous process of interaction between the child and their surroundings. The core process enabling this growth is termed **Adaptation**.

Defining Adaptation in Piaget's Theory

Adaptation is a fundamental concept in Piaget's theory. It refers to the process by which individuals modify their existing mental structures, known as schemas, or create entirely new ones to better deal with new experiences and information encountered in the environment. It's how children actively make sense of the world around them by adjusting their thinking. This process ensures that a child's schemas remain relevant and effective in understanding reality.

The Two Sides of Adaptation: Assimilation and Accommodation

Piaget described **Adaptation** as having two complementary components:

- **Assimilation:** This is the process of incorporating new information or experiences into existing schemas. Children try to understand new things using the mental frameworks they already possess. For example, a young child who has a schema for 'dog' might see a cat and initially call it a 'dog' because it's a furry, four-legged animal.
- **Accommodation:** This occurs when new information doesn't fit neatly into existing schemas. Children must then modify their current schemas or create new ones to accommodate this new information. Using the previous example, the child learns that the cat behaves differently and looks different from a dog, so they adjust their understanding, perhaps creating a new schema for 'cat' or modifying the existing 'animal' schema.

Through the interplay of assimilation and accommodation, children continually refine their understanding of the world, leading to cognitive development.

Why Other Concepts Don't Fit

Let's look at why the other options are not the correct answer for the process described:

- **Invariation:** This term is not a standard concept within Piaget's core theory of cognitive processes like schema modification. It might relate to the concept of conservation (understanding that certain properties remain unchanged despite changes in appearance), but it doesn't describe the process of modifying schemas through environmental interaction.

- **Conditioning:** This concept comes from behaviorist psychology (e.g., Pavlov, Skinner). It focuses on learning through association (classical conditioning) or reinforcement and punishment (operant conditioning), linking specific stimuli to responses. Piaget's theory, conversely, emphasizes internal cognitive structures and how children actively construct knowledge, rather than simply responding to external stimuli through conditioning.
- **Equilibration:** While closely related to **Adaptation**, equilibration is the broader process that drives cognitive development. It represents the balance between assimilation and accommodation. When a child encounters new information that creates cognitive imbalance (disequilibrium), they are motivated to restore balance (equilibrium) through adaptation (using assimilation and accommodation). So, adaptation is the **mechanism** of change, while equilibration is the **driving force** or the process of achieving balance. The question specifically asks for the **process** of modifying schemas due to interaction, which is precisely what adaptation entails.

Therefore, the process described in the question – modifying schemas or making new ones due to direct interaction with the environment – is best defined as **Adaptation** in Piagetian psychology.

5. Answer: c

Explanation:

Understanding Piaget's Concrete Operational Stage

Jean Piaget, a renowned developmental psychologist, proposed a theory outlining the stages children go through as they develop their thinking and reasoning abilities. The **concrete operational stage** is one of these key stages, typically occurring between the ages of 7 and 11 years.

During this stage, children begin to think logically about **concrete** events and objects. They develop a better understanding of concepts like conservation (understanding that quantity remains the same despite changes in appearance) and seriation

(arranging items in order along a quantitative dimension). They can classify objects and understand that actions can be reversed.

Concrete Operational Stage: Abilities vs. Difficulties

While children in the concrete operational stage show significant advancements in logical thinking compared to the earlier preoperational stage, their reasoning is still largely tied to the tangible and the here-and-now. They struggle with abstract concepts and hypothetical situations.

Why Hypothetical Deductive Reasoning is a Challenge

Hypothetical deductive reasoning refers to the ability to think abstractly and systematically solve problems. It involves forming hypotheses (educated guesses) and deducing or predicting the consequences of these hypotheses. This type of reasoning is characteristic of the next stage in Piaget's theory, the **formal operational stage** (typically starting around age 11).

Children in the concrete operational stage primarily deal with concrete facts and real-world situations. They find it difficult to:

- Think about possibilities that contradict reality.
- Formulate and test hypotheses systematically when dealing with abstract problems.
- Engage in purely abstract reasoning without concrete examples.

Analysis of Other Options

- **Symbolic representation:** This ability, the capacity to use symbols (like words, images, or gestures) to represent objects or events, actually develops significantly during the **preoperational stage** (ages 2–7). Children in the concrete operational stage build upon this foundation.
- **Tasks of conservation:** Understanding conservation (e.g., realizing that the amount of water stays the same when poured into a different shaped glass) is a hallmark achievement and a key characteristic of the **concrete operational stage**, not a difficulty.

- **Tasks of seriation:** Similarly, the ability to arrange items in a logical order (like ordering sticks by length) is an important skill developed during the **concrete operational stage**.

Conclusion on Concrete Operational Thinking

Therefore, according to Piaget's theory, while children in the concrete operational stage can think logically about concrete things and perform tasks like conservation and seriation, they face difficulties when required to engage in **hypothetical deductive reasoning**, which requires abstract thinking.

6. Answer: a

Explanation:

Understanding Kohlberg's Stages and Fixed Rules

The question asks us to identify the specific stage in Lawrence Kohlberg's influential theory of moral development where children perceive rules as being **fixed and absolute**. Kohlberg proposed that moral reasoning develops through distinct stages, and understanding these stages helps us see how children and adults think about right and wrong. The key idea here is the child's view of rules – are they unchangeable commands or something more flexible?

Stage 1: Punishment and Obedience Orientation Explained

According to Kohlberg's framework, the stage where children see rules as **fixed and absolute** is the first stage, known as the **Punishment and Obedience Orientation**. This stage is part of the Pre-conventional Level of moral reasoning. In this orientation:

- Children obey rules primarily to avoid punishment. The physical consequences of an action, like getting punished, are the main focus.

- Authority figures (like parents or teachers) are seen as powerful, and their rules must be followed unquestioningly.
- Rules are viewed as external dictates that exist independently of the individual. They are seen as rigid and unchangeable commands.
- There's little understanding that rules might be based on mutual agreement or could be changed if necessary. The morality of an action is judged by its consequences, not by the intent behind it.

For example, a child in this stage might believe that breaking a rule is wrong simply because they might get punished, not because they understand the rule's purpose or societal importance. The rules themselves are considered absolute truths.

Analyzing Other Kohlberg Stages

Let's look at why the other options don't fit the description of seeing rules as **fixed and absolute**:

- **Good Boy–Nice Girl Orientation (Stage 3):** In this stage, individuals focus on conforming to stereotypes and gaining approval from others. While rules are important, the motivation is social approval rather than absolute obedience. Rules are followed to be seen as "good."
- **Social Contract Orientation (Stage 5):** Here, individuals begin to understand that rules and laws are social agreements created for the greater good. They recognize that laws can be changed or questioned if they are unjust or no longer serve the purpose they were intended for. Rules are seen as flexible, not absolute.
- **Universal Ethical Principles Orientation (Stage 6):** This is the highest stage, where moral reasoning is based on abstract principles of justice, equality, and respect for human dignity. Individuals follow universal ethical principles, even if they conflict with laws or social norms. Rules are secondary to these fundamental principles and certainly not seen as absolute.

Summary Table of Relevant Stages

Kohlberg's Stages and View of Rules

Stage Name	Kohlberg's Level	View of Rules
Punishment and Obedience Orientation	Pre-conventional	Fixed and absolute ; obey to avoid punishment.
Good Boy–Nice Girl Orientation	Conventional	Important for social approval and relationships; follow to be seen as good.
Social Contract Orientation	Post-conventional	Social agreements, can be changed if necessary; focus on mutual benefit.
Universal Ethical Principles Orientation	Post-conventional	Based on abstract, self-chosen ethical principles; higher than laws.

Therefore, the stage characterized by children viewing rules as **fixed and absolute**, primarily driven by the consequences of obedience or punishment, is the **Punishment and Obedience Orientation**. This foundational stage sets the stage for later, more complex moral reasoning development as described by Kohlberg.

Your Personal Exams Guide

7. Answer: d

Explanation:

Identifying the Social Constructivist Theorist

This question requires identifying which of the listed individuals is recognized as a proponent of **Social Constructivism**. Social Constructivism is a learning theory that emphasizes how individuals actively construct knowledge and understanding through social interactions and cultural experiences. It posits that learning is fundamentally a social process.

Lev Vygotsky's Contributions to Social Constructivism

Lev Vygotsky is a prominent figure associated with the theory of Social Constructivism. His work heavily influenced educational psychology by highlighting the importance of social interaction in cognitive development. Key ideas proposed by Vygotsky include:

- **Zone of Proximal Development (ZPD):** Vygotsky defined the ZPD as the difference between what a learner can achieve independently and what they can achieve with guidance from a more knowledgeable person. Learning is most effective when it occurs within this zone.
- **The Role of Social Interaction:** He stressed that higher mental functions originate in social interactions. Collaboration and dialogue with peers and adults are crucial for learning.
- **Language and Culture:** Vygotsky considered language as a vital tool for thought and communication, mediating learning and cognitive development. He also emphasized the role of cultural context and tools in shaping how children think.

Comparing Theorists and Their Primary Theories

To confirm why Lev Vygotsky is the correct answer, it is helpful to briefly look at the main contributions of the other options:

- **B.F. Skinner:** Primarily known for **Behaviorism**, particularly operant conditioning, which focuses on how behavior is shaped by consequences (reinforcement and punishment). His theory is less focused on social interaction as the primary driver of cognitive development.
- **Lawrence Kohlberg:** Developed a theory of **Moral Development**, explaining the stages individuals progress through in their reasoning about right and wrong. While social factors play a role in his theory, he is not primarily classified as a social constructivist theorist in the same way as Vygotsky.
- **J.P. Guilford:** Made significant contributions to the study of intelligence, particularly with his **Structure of Intellect** model, which proposed numerous distinct factors of intelligence. His work primarily concerns the structure and measurement of cognitive abilities, not the social construction of knowledge.

Therefore, based on his foundational theories about the impact of social interaction, language, and culture on cognitive development, Lev Vygotsky is recognized as a key Social Constructivist theorist.

8. Answer: b

Explanation:

This question asks us to identify the teaching strategy used when a teacher provides temporary help, like prompts and cues, to students who are stuck in a group activity, and then allows them to continue on their own. This method aims to support learning without completing the task for the students.

Understanding the Teaching Strategy Used

The scenario describes a teacher actively intervening to help students overcome a hurdle in their learning process. The teacher's role is to provide just enough support to enable the students to progress, and then step back, allowing them to continue independently. This temporary assistance is crucial for learning.

Defining Scaffolding

Scaffolding is an instructional technique where a teacher provides support to students during the learning process. This support acts as a temporary framework, helping students accomplish a task that they might not be able to complete on their own. Key aspects of scaffolding include:

- Providing prompts and cues: Similar to the teacher in the question giving prompts and cues.
- Breaking down complex tasks: Making challenging concepts more manageable.
- Offering encouragement: Motivating students to keep trying.
- Giving direct instruction: Explaining concepts or steps when needed.
- Modeling skills: Showing students how to perform a task.

The support is gradually withdrawn as the student gains confidence and competence. This concept is closely linked to Lev Vygotsky's theory of the Zone of Proximal Development (ZPD), which is the range of tasks a learner can perform with guidance but not yet independently.

Analyzing Other Options

Let's look at why the other options are not the correct fit for the described classroom situation:

- **Conditioning:** This learning theory involves associating a behavior with a consequence (reinforcement or punishment). It doesn't involve providing active, conceptual support in the way described. For example, rewarding a student for answering a question correctly is conditioning, but it's different from guiding them through a difficult problem.
- **Passive imitation:** This involves learning by simply copying or mimicking someone else's actions without necessarily understanding the underlying process or concept. The teacher's intervention in the question is active guidance, not just demonstrating something to be copied passively.
- **Rote memorization:** This is a learning method based on repetition to memorize information without necessarily understanding its meaning or context. The scenario focuses on overcoming a learning obstacle through guided support, not just memorizing facts.

Conclusion on the Teaching Method

The teacher's action of providing specific prompts and cues to help students move forward in their understanding, and then stepping back, perfectly aligns with the definition and practice of **scaffolding**. It's a supportive technique designed to help students learn and become more independent over time.

9. Answer: d

Explanation:

Progressive Classroom Characteristics Explained

A **progressive classroom** is a learning environment designed to be student-centered, encouraging active participation, exploration, and individual development. It moves away from traditional, teacher-centric models towards a more dynamic and adaptable approach to education. Understanding the core elements that define such a classroom is key to recognizing its structure and practices.

Key Features of a Progressive Classroom

The question asks to identify the characteristics that define a progressive classroom. Let's examine each characteristic mentioned:

(i) Mobile Teacher

In a progressive setting, the teacher acts as a facilitator and guide, rather than solely a lecturer. This means the teacher is frequently moving around the classroom, interacting with students individually or in small groups, observing their progress, providing support, and asking probing questions. This mobility ensures personalized attention and allows the teacher to manage diverse learning activities simultaneously.

(ii) Flexible Grouping

Flexible grouping is a hallmark of progressive education. Students are not confined to static arrangements. Instead, they work in various configurations—individually, in pairs, small collaborative groups, or as a whole class—depending on the specific learning task, project goals, or student interests. This adaptability caters to different learning needs and encourages social interaction and peer learning.

(iii) Autonomy to Children

Giving **autonomy to children** means empowering them with choices and control over aspects of their learning. This could include selecting topics for projects, choosing learning activities, deciding the pace of their work, or determining how they

demonstrate their understanding. Fostering autonomy cultivates independence, responsibility, and intrinsic motivation in learners.

(iv) Provisioning of a Lot of Materials

A rich learning environment is essential in a progressive classroom. This involves the **provisioning of a lot of materials**—such as books, art supplies, building blocks, technology tools, and scientific equipment. Access to a wide variety of resources encourages curiosity, hands-on exploration, experimentation, and caters to diverse learning styles and interests, enabling students to construct their own knowledge.

Conclusion: Synthesis of Characteristics

Based on the analysis, all four points—a mobile teacher, flexible grouping, autonomy for children, and the availability of abundant materials—are fundamental characteristics of a progressive classroom. These elements work together to create an engaging, student-driven learning experience that promotes critical thinking, collaboration, and self-directed learning.

Therefore, the option that encompasses all these defining features accurately represents a progressive classroom.

Your Personal Exams Guide

10. Answer: d

Explanation:

Understanding Spatial Intelligence and Related Skills

The question asks to identify the type of intelligence that involves **manipulating images, graphic skills, and reasoning** about concepts extending beyond two dimensions.

Defining Spatial Intelligence

Spatial intelligence is one of the multiple intelligences proposed by Howard Gardner. It refers to the capacity to perceive the visual-spatial world accurately and to perform transformations upon one's initial perceptions. Individuals with high spatial intelligence are adept at:

- Visualizing objects
- Mentally rotating objects
- Recognizing patterns
- Understanding maps and diagrams
- Working with graphics and images
- Reasoning about relationships in space
- Thinking in terms of three dimensions (3D)

This intelligence is crucial for professions like architecture, art, design, navigation, and engineering.

Connecting Spatial Skills to the Question

The description in the question directly aligns with the core components of **spatial intelligence**:

- **Manipulating images:** This involves altering, combining, or transforming visual representations, a key aspect of spatial thinking.
- **Graphic skills:** Proficiency in using visual or graphic tools and techniques relies heavily on understanding spatial relationships and visual representation.
- **Reasoning beyond two dimensions:** This specifically points to the ability to think and reason in three dimensions, which is a hallmark of spatial ability.

Therefore, the abilities mentioned fall squarely under the domain of **spatial intelligence**.

Evaluating Other Intelligence Types

Let's look at why the other options are not the best fit:

- **Logico-mathematical intelligence:** This intelligence focuses on logic, numbers, reasoning, abstract patterns, and problem-solving, not specifically visual or

spatial manipulation.

- **Bodily-kinaesthetic intelligence:** This pertains to physical movement, coordination, balance, and using one's body skillfully, like athletes or dancers. It does not primarily involve visual or image manipulation.
- **Interpersonal intelligence:** This relates to understanding the intentions, motivations, and desires of other people and working effectively with others. It is about social interaction, not spatial reasoning.

Conclusion

Based on the connection between **manipulating images**, **graphic skills**, and **reasoning** in dimensions beyond two, **spatial intelligence** is the correct classification for these abilities.

11. Answer: c

Explanation:

Examining the Interplay Between Language and Thought Development

The question asks about the relationship between the development of language and thought. Understanding this connection is crucial in developmental psychology and cognitive science. Let's analyze the options to determine the most accurate description of this relationship.

Analyzing the Options for Language and Thought Development

We need to consider how language acquisition and cognitive development influence each other throughout a person's growth.

- Option 1: Occurs independent of each other.

This statement is incorrect. Major theories, like those proposed by Lev Vygotsky, suggest a strong and dynamic relationship between language and thought. Language provides the tools for complex thought, while thought drives the need for linguistic expression.

- **Option 2: Occurs independent of the socio-cultural contexts.**

This is also incorrect. Socio-cultural contexts play a vital role in shaping both language and thought. The language we learn and the way we think are heavily influenced by our environment, culture, and social interactions, as emphasized by sociocultural theorists.

- **Option 3: Is inter-related since they interact in myriad ways to influence each other.**

This statement accurately reflects the consensus in developmental psychology. Language development provides children with tools for thinking, reasoning, and social interaction. Conversely, cognitive development influences a child's ability to understand and use language effectively. They grow together, constantly impacting one another. For example, learning new vocabulary (language) can lead to new ways of understanding concepts (thought), and developing problem-solving skills (thought) encourages the use of more complex language structures.

- **Option 4: Is influenced by heredity only and not environmental factors.**

This is incorrect. While heredity provides a biological foundation, both language and thought development are significantly shaped by environmental factors, including upbringing, education, and cultural context. Development is typically seen as an interaction between nature (heredity) and nurture (environment).

Conclusion on Language and Thought Interaction

Based on psychological research and developmental theories, language and thought are deeply intertwined. They do not develop in isolation but rather influence each other profoundly through continuous interaction within a specific socio-cultural

environment. Therefore, the most accurate description is that their development is inter-related.

12. Answer: b

Explanation:

Exploring the Impact of Observing Non-Conformist Gender Roles

Understanding how children perceive and react to their parents' behavior is crucial in developmental psychology. This question focuses on the potential effects when a child witnesses parents engaging in **'non-conformist' gender roles**. Let's break down what this means and how it might influence a child's perspective on gender.

Understanding 'Non-Conformist' Gender Roles

'Non-conformist' gender roles refer to behaviors, activities, or attitudes that deviate from the traditional expectations associated with a particular gender (masculine or feminine). For instance, a father actively participating in childcare and household chores, traditionally seen as 'feminine' roles, or a mother being the primary breadwinner, traditionally seen as a 'masculine' role, are examples of such non-conformity.

Analyzing the Options

When a child observes parents performing **'non-conformist' gender roles**, several developmental and social learning processes come into play. We can evaluate the likely outcomes:

- **Following Gender Stereotypes:** This is less likely. Gender stereotypes are rigid beliefs about how males and females **should** behave. Observing parents breaking these norms would challenge, rather than reinforce, stereotypical thinking.

- **Questioning 'Traditional' Gender Roles:** This is a highly probable outcome. Children learn about gender roles partly through observation (social learning theory). Seeing parents defy traditional expectations can lead a child to understand that these 'traditional' roles are not the only way or necessarily the 'correct' way to behave based on gender. It encourages flexibility in thinking about gender.
- **Having Gender Constancy:** Gender constancy is a stage in cognitive development where a child understands that gender is a permanent characteristic, regardless of superficial changes like clothing or hairstyle. While important, observing parental role behavior doesn't directly cause or prevent the achievement of gender constancy itself.
- **Being Gender Biased:** Gender bias involves prejudice or discrimination based on gender. Exposure to diverse and non-traditional gender roles, as performed by parents, is more likely to reduce gender bias by showing that abilities and interests are not strictly tied to gender.

Developmental Implications

Children internalize societal norms, but direct observation of parental behavior provides powerful learning experiences. When parents model behavior that defies **traditional gender roles**, they provide concrete examples that challenge rigid notions. This exposure can foster a more flexible and critical understanding of societal expectations regarding gender, encouraging children to question stereotypes and appreciate a wider range of behaviors as acceptable for everyone, regardless of gender.

13. Answer: a

Explanation:

Catering to Diversity in the Classroom

Creating an effective learning environment involves acknowledging and valuing the differences among students. This concept is known as catering to **diversity**. Diversity in a classroom can include variations in learning styles, abilities, cultural backgrounds, socio-economic status, languages, and much more. A teacher's primary goal when facing this **classroom** diversity is to ensure that every student feels included, respected, and supported in their learning journey.

Understanding Teacher's Role in Diversity

A **teacher** plays a crucial role in managing and leveraging **classroom** diversity. Instead of viewing differences as obstacles, teachers should see them as opportunities to enrich the learning experience for everyone. This requires specific strategies and a sensitive approach.

Analyzing Options for Catering to Diversity

Let's examine the given options to understand how a teacher can best cater to diversity:

- **Option 1: Be sensitive to the socio-cultural background of the students.**

This approach is fundamental. Understanding a student's **socio-cultural background** means recognizing how their culture, family life, and community experiences might influence their learning, behavior, and perspectives.

Sensitivity involves respecting these backgrounds and incorporating them positively into the classroom activities and interactions. This helps build trust and makes learning more relevant for students.

- **Option 2: Give uniform instructions and disregard individual differences.**

This strategy ignores the core principle of catering to **diversity**. Providing the same instructions to all students without considering their unique learning needs or backgrounds can disadvantage many. It fails to address individual differences, making it difficult for some students to comprehend or participate effectively.

- **Option 3: Disregard the social context of the students completely.**

Ignoring the social context is detrimental. A student's social environment significantly impacts their educational experience. A teacher should be aware of and responsive to the social context, not disregard it. This option is contrary to creating an inclusive and supportive **classroom**.

- **Option 4: Label the children on the basis of their parents occupation.**

Labeling students based on their parents' occupation is a form of stereotyping and prejudice. It creates unfair divisions and biases within the classroom. Effective teaching requires looking beyond such labels and focusing on each student's individual potential and needs, embracing the diversity rather than categorizing students based on external factors.

Conclusion on Catering to Diversity

To effectively cater to **diversity**, a **teacher** must adopt strategies that acknowledge, respect, and respond to the unique characteristics of each student. Being **sensitive to the socio-cultural background** is a key element in creating an inclusive and equitable learning environment where all students can thrive.

14. Answer: a

Explanation:

Understanding the Purpose of Assessment in Education

Assessment in an educational context refers to the process of gathering information and making judgments about student learning and progress. It plays a vital role in shaping the educational experience. Evaluating the intended purpose of assessment helps ensure it contributes positively to the learning environment.

Identifying the Primary Focus of Assessment

The effectiveness of assessment strategies is often determined by their primary objective. The question asks what the main focus of assessment should be. Let's examine the provided options in the context of effective educational practices:

- **Enhancement of learning:** This is widely considered the most crucial goal of assessment. When assessment focuses on learning enhancement, it serves as a tool to:
 - Pinpoint specific areas where a student excels or needs more support.
 - Provide constructive feedback that guides students toward improvement.
 - Help educators understand the effectiveness of their teaching methods and make necessary adjustments.
 - Encourage students to take ownership of their learning journey and strive for mastery.

This perspective views assessment as an integral part of the learning process itself, aimed at fostering growth.

- **Categorisation and labelling of children:** Using assessment primarily to categorize or label students (e.g., 'fast learner', 'slow learner') can be limiting and potentially harmful. While assessment results might inform grouping strategies, the act of labelling should not be the main focus, as it can create fixed mindsets and affect student self-perception.
- **Increasing competition among the children:** While some level of competition may naturally arise from assessments, making it the central focus is generally discouraged in modern pedagogy. An overemphasis on competition can lead to anxiety, discourage collaboration, and negatively impact students who may not perform well under competitive pressure. The goal should be individual progress and development.
- **Generation of fear and stress among children:** Assessment should ideally be a supportive process. Creating fear and stress is a sign of poor assessment design or implementation, not its intended purpose. Effective assessment practices aim to reduce test anxiety and build student confidence.

Conclusion on the Goal of Assessment

In conclusion, the fundamental purpose of assessment should be to support and improve the learning process for every student. Therefore, focusing on the

enhancement of learning is paramount for effective and meaningful educational assessment.

15. Answer: a

Explanation:

Evaluating Assessment Strategies for Children's Learning

This question focuses on the best practices for assessing how children learn and track their progress. It presents an Assertion about the methods used and a Reason explaining why those methods are necessary. Let's break down both parts to understand their validity and connection.

Assertion Analysis: Importance of Diverse Assessment Methods

Assertion (A) states that a **variety of methods and tools** should be employed when assessing children's learning and progress. This means using different ways to check what a child knows and how they are developing.

- Why is using multiple methods important? Different children learn and show their understanding in different ways. Some might excel in written tests, while others might demonstrate their knowledge better through projects, discussions, or creative activities.
- Using a range of tools helps capture a more complete picture of the child's abilities. Examples of assessment methods include:
 - Observations of the child during activities
 - Portfolios showcasing their work over time
 - Projects and assignments
 - Classroom participation and discussions
 - Formal tests and quizzes
 - Checklists and rating scales

Therefore, Assertion (A) is accurate, as educational best practices strongly advocate for a multi-faceted approach to assessment.

Reason Analysis: Limits of Single Assessment Approaches

Reason (R) suggests that **no single method of assessment** can provide comprehensive information about a child across different areas of development. This points out the limitations inherent in relying on just one assessment tool.

- Consider a scenario: A single written test might only measure a child's knowledge in one subject area, like math calculations. It might not show their problem-solving skills, creativity, or how they work with others.
- Similarly, an observation might reveal a child's social skills but might not accurately reflect their understanding of specific academic concepts.
- Development happens across various domains – cognitive (thinking, learning), social (interacting with others), emotional (understanding feelings), and physical. Each domain might require different ways of being assessed to get a full understanding.

Thus, Reason (R) is also true. Relying on only one method would provide an incomplete and potentially misleading view of the child's overall development and learning.

Connecting Assessment Variety and Comprehensiveness

Now, let's see if Reason (R) correctly explains Assertion (A). Assertion (A) recommends using a variety of methods, and Reason (R) explains that this variety is needed because single methods are not enough to get comprehensive information. The reason directly supports the assertion.

Because no single assessment method is sufficient to cover all aspects of a child's learning and development (Reason R), it logically follows that we must use a variety of methods and tools to achieve a comprehensive understanding (Assertion A).

Conclusion: Selecting the Correct Option

Based on the analysis:

- Assertion (A) is true.
- Reason (R) is true.
- Reason (R) correctly explains why Assertion (A) is necessary.

This matches the first option provided.

Therefore, the correct choice is that both (A) and (R) are true, and (R) is the correct explanation of (A).

16. Answer: b

Explanation:

- The core idea of creating an **inclusive school** is to build an environment where every student feels welcomed, valued, safe, and supported to participate fully in their learning journey. It means embracing diversity and ensuring that the needs of all learners are met.

Inclusive School Principles Explained

Let's look at the different aspects mentioned in the options to understand what truly contributes to building an inclusive school:

- **Accepting labelling and stigmatisation:** This approach is contrary to inclusion. Labelling students (e.g., "slow learner" or "gifted") and applying stigmas can create negative feelings, lower self-esteem, and lead to exclusion. An inclusive school actively works to break down these labels and avoid creating divisions among students.
- **Questioning stereotypes and prejudices:** This is a fundamental aspect of fostering inclusion. Stereotypes are oversimplified ideas about groups of people, and prejudices are preconceived negative judgments. An inclusive

school challenges these biases, encouraging students and staff to think critically about their assumptions and to treat everyone with respect, regardless of their background, ability, or identity. This helps create a truly welcoming atmosphere.

- **Endorsing categorisation and segregation:** Categorisation (grouping students based on certain characteristics) and segregation (keeping groups separate) are practices that work against the principles of inclusion. Inclusion aims to bring students together and provide support within the same learning environment, rather than separating them.
- **Promoting rigidity and standardisation of curriculum and pedagogy:** While consistency is important, promoting *rigidity* can be harmful in an inclusive setting. Inclusive schools need flexibility in their curriculum (what is taught) and pedagogy (how it is taught) to cater to the diverse learning styles, paces, and needs of all students. Standardisation without flexibility can lead to students being left behind if they don't fit the standard mold.

Key Element for Inclusive Environments

Therefore, the most crucial step in the creation of an inclusive school involves actively **questioning stereotypes and prejudices**. By challenging biased views and promoting understanding, schools can build a positive and supportive community where every student thrives.

Your Personal Exams Guide

17. Answer: a

Explanation:

To create an inclusive learning environment that values diversity and actively works towards addressing barriers to inclusion.

★ Key Points

- **Listening to children's voices**, particularly those from socially disadvantaged groups, is crucial to understanding their needs and perspectives.

- By listening to these voices, teachers and educators can identify and address barriers to inclusion, such as discrimination, cultural misunderstandings, and lack of resources.
- When teachers listen to children, they create a safe and supportive learning environment that promotes children's social and emotional well-being.

Thus, it is concluded that **the intervention strategy that can help in the inclusion of children from socially disadvantaged groups is patiently listening to all children's voices.**

18. Answer: a

Explanation:

Understanding Writing Difficulties: Identifying the Symptoms

This question asks us to identify the condition characterized by specific challenges related to writing. The key indicators mentioned are 'omission of words in written work', a 'slow copying pace', and a general 'difficulty in writing'. Let's explore the options to find the best fit.

Defining Dysgraphia

Dysgraphia is a specific learning disability that affects a person's handwriting, spelling, and the physical act of writing. People with **Dysgraphia** often struggle with the fine motor skills needed for writing, as well as organizing their thoughts on paper.

The characteristics mentioned in the question align perfectly with **Dysgraphia**:

- **Omission of words in written work:** This can happen because of difficulties with working memory, sequencing letters or words, or simply losing their place while writing.

- **Slow copying pace:** Individuals with **Dysgraphia** often find it very slow and laborious to copy text from one source to another. This relates to challenges in visual processing and the motor execution of writing.
- **Difficulty in writing:** This is a broad symptom that encompasses issues like poor letter formation, inconsistent spacing between letters and words, awkward pencil grip, and trouble organizing written expression.

Analyzing Other Options

It's important to understand why the other options are not the correct answer for these specific writing challenges:

- **Dyscalculia:** This learning difficulty specifically affects a person's ability to understand numbers and learn math. Symptoms include trouble with math concepts, memorizing math facts, and performing calculations. It does not primarily involve writing difficulties.
- **Autism Spectrum Disorder (ASD):** ASD is a neurodevelopmental condition characterized by challenges with social interaction, communication, and restricted or repetitive behaviors. While some individuals with ASD may experience writing difficulties (sometimes co-occurring with Dysgraphia), these specific symptoms are not the defining characteristics of ASD itself.
- **Giftedness:** Giftedness refers to having advanced intellectual abilities and potential. Gifted individuals typically excel in learning and may even show advanced writing skills, not difficulties like those described.

Conclusion on Writing Challenges

Based on the direct association between the described symptoms (omission of words, slow copying, general writing difficulty) and the definition of the condition, **Dysgraphia** is the most accurate identification for these specific characteristics.

19. Answer: b

Explanation:

Understanding Aarav's Close Viewing Behavior

The question describes Aarav exhibiting specific behaviors: sitting very close to the blackboard and holding reading materials near his eyes. These actions are strong indicators that Aarav might be experiencing difficulty seeing distant objects clearly. Such difficulties often point towards potential vision impairments, like myopia (nearsightedness), where close objects appear clear, but distant ones are blurry. It is crucial for a teacher to recognize these signs as a potential health or learning concern rather than simple misbehavior.

Evaluating Potential Teacher Actions

When faced with a student like Aarav displaying signs of potential vision problems, a teacher must consider the most effective and supportive course of action. Let's analyze the given options:

- **Option 1: Punish Aarav for his behaviour.**

Punishing Aarav is inappropriate. His actions stem from a potential physical issue (vision impairment), not defiance. Punishment would be counterproductive, potentially causing distress and failing to address the underlying problem.

- **Option 2: Seek professional support to check for low vision.**

This is the most appropriate response. "Professional support" typically involves recommending that Aarav's parents have his vision checked by an eye care professional (like an optometrist or ophthalmologist). Early detection and intervention for vision problems are vital for a child's academic success and overall well-being. This professional evaluation can determine if Aarav has a vision impairment, the extent of it (e.g., low vision), and suggest appropriate solutions like corrective lenses or specific educational support.

- **Option 3: Send report card with poor scores to parents.**

While Aarav might be performing poorly due to his vision issue, sending a report card with poor scores without addressing the cause is unhelpful. It

highlights a symptom (poor performance) without tackling the root cause (potential vision problem). The focus should be on diagnosing and addressing the vision issue first.

- **Option 4: Send Aarav to special school for visually impaired.**

Recommending a special school is a significant step and should only be considered after a thorough professional assessment confirms a substantial vision impairment that cannot be adequately managed in a regular classroom setting with appropriate accommodations. It is not the initial or immediate step a teacher should take based solely on the observed behaviors.

Recommended Strategy for Aarav

The most effective strategy for the teacher is to address the potential vision issue proactively and supportively. Observing Aarav sitting too close and holding his book extremely close are clear signals warranting attention. The best course of action involves communicating these observations to Aarav's parents or guardians and recommending a professional eye examination. This ensures that Aarav receives the necessary assessment and any required support, whether it be corrective lenses or classroom accommodations, enabling him to learn effectively and comfortably.

Your Personal Exams Guide

20. Answer: b

Explanation:

Understanding Thinking Characteristics: Originality, Fluency, and Flexibility

The question asks to identify the concept characterized by **originality**, **fluency**, and **flexibility** in thinking. These terms are key components often associated with a specific cognitive ability.

Defining Key Thinking Traits

Let's break down what each characteristic means in the context of thinking:

- **Originality:** This refers to the ability to generate ideas or solutions that are unique, novel, and uncommon. It's about thinking outside the box and coming up with something new.
- **Fluency:** This relates to the ability to produce a large number of ideas or responses to a given problem or question. It measures the quantity of thoughts generated.
- **Flexibility:** This involves the capacity to approach problems from multiple perspectives and to shift thinking strategies easily. It means being adaptable and not getting stuck on one way of thinking.

Creativity as the Core Concept

Creativity is widely defined as the ability to produce work that is both novel (original) and appropriate (useful or valuable). The characteristics mentioned directly align with this definition:

- A **creative** thinker can exhibit **originality** by producing unique ideas.
- **Fluency** is essential for **creativity**, as generating many different possibilities often leads to a better final outcome.
- **Flexibility** allows a **creative** individual to explore various approaches and adapt their thinking, which is crucial for problem-solving and innovation.

Therefore, the combination of **originality**, **fluency**, and **flexibility** in **thinking** are hallmark traits of **creativity**.

Evaluating Other Options

While conditions like Autism, Dyslexia, and ADHD involve unique cognitive profiles, they are not primarily defined by the combination of originality, fluency, and flexibility in thinking as their core identifying characteristics:

- **Autism:** Often associated with intense focus on specific interests, challenges in social communication, and repetitive behaviors. While individuals with autism can be creative, these three traits are not its defining features.

- **Dyslexia:** Primarily characterized by difficulties with reading, writing, and spelling, despite average intelligence. It doesn't directly relate to the core definition of thinking fluency or flexibility.
- **Attention Deficit Hyperactivity Disorder (ADHD):** Marked by patterns of inattention and/or hyperactivity-impulsivity. While some individuals with ADHD might display bursts of creativity, the core defining traits are different and relate to attention regulation.

In summary, the specific thinking characteristics of **originality**, **fluency**, and **flexibility** are most strongly and typically identified with **creativity**.

21. Answer: d

Explanation:

Promoting Essential Skills for Effective Learning

Effective learning in students goes beyond memorizing facts; it involves developing a set of cognitive and practical skills that enable them to understand, adapt, and thrive in various situations. Teachers play a crucial role in nurturing these abilities. Let's explore the key skills mentioned and their importance:

Understanding Critical Thinking

Critical thinking involves the ability to analyze information objectively, evaluate arguments, and make reasoned judgments. For students, this means not just accepting information but questioning it, looking for evidence, and understanding different perspectives. Teachers can promote this by:

- Asking open-ended questions that encourage deeper thought.
- Facilitating classroom discussions and debates.
- Presenting problems with multiple possible solutions.
- Encouraging students to evaluate sources of information.

Fostering Creativity

Creativity is the ability to generate new ideas, think unconventionally, and approach tasks from novel angles. In an educational context, creativity helps students engage more deeply with subjects and find innovative solutions. Teachers can encourage creativity by:

- Providing opportunities for imaginative work, like storytelling or art projects.
- Allowing students to explore different methods to complete assignments.
- Creating a supportive environment where experimentation is valued.
- Incorporating project-based learning that allows for unique approaches.

Developing Problem Solving Abilities

Problem solving refers to the process of identifying challenges, devising strategies, and implementing solutions. This skill is fundamental for academic success and life outside the classroom. Students need to learn how to tackle difficulties systematically. Teachers can support this by:

- Introducing real-world problems for students to solve.
- Guiding students through the steps of problem-solving (identifying, planning, executing, evaluating).
- Encouraging collaboration among students to solve problems together.
- Providing constructive feedback on their approaches.

Cultivating Learning How to Learn

Learning how to learn, also known as metacognition, is perhaps the most vital skill for lifelong learning. It involves students understanding their own learning processes, identifying effective strategies, and taking responsibility for their own learning journey. Teachers foster this by:

- Teaching students various study techniques and time management skills.
- Encouraging students to reflect on their learning experiences (what worked, what didn't).
- Helping students set realistic learning goals.
- Promoting self-assessment and self-correction.

Conclusion: Integrating Key Skills for Holistic Development

Effective learning is achieved when students are equipped with a blend of analytical, innovative, practical, and self-aware skills. Critical thinking allows them to understand deeply, creativity enables them to innovate, problem-solving equips them to overcome challenges, and learning how to learn empowers them for continuous growth. Therefore, teachers should focus on promoting all these skills – critical thinking, creativity, problem solving, and learning how to learn – to ensure holistic and effective development for their students.

22. Answer: a

Explanation:

Assertion-Reason Analysis: Collaborative Learning and Knowledge Co-construction

This solution provides a detailed explanation for the given Assertion (A) and Reason (R) concerning teaching methodologies, specifically focusing on **promoting dialogue** for collaborative learning and the nature of learning as **co-construction**.

Evaluating Assertion (A): Promoting Dialogue for Collaborative Learning

The Assertion states that teachers should encourage dialogue among students to foster **collaborative learning**. Let's break this down:

- **Collaborative Learning:** This teaching approach involves students working together in groups to achieve a common learning goal. It emphasizes shared learning experiences and mutual support.
- **Role of Dialogue:** Dialogue, or discussion, is essential in collaborative learning. It allows students to:
 - Share different viewpoints and ideas.

- Explain their thinking processes to peers.
- Engage in constructive debate and problem-solving.
- Receive feedback from others.
- Build shared understanding.
- **Teacher's Role:** A teacher's role in facilitating collaborative learning includes creating opportunities for meaningful interaction and dialogue.

Therefore, the statement that teachers should promote dialogue to facilitate collaborative learning is accurate and aligns with effective pedagogical practices.

Evaluating Reason (R): Learning as Co-construction with Support

The Reason posits that learning is a process of **co-construction**, supported by others. This concept is rooted in social constructivist learning theories, notably Lev Vygotsky's work.

- **Co-construction of Knowledge:** This theory suggests that learners actively build their understanding and knowledge, not passively receive it. This building process is often done in collaboration with others (peers, teachers), where knowledge is constructed together.
- **Social Interaction and Support:** Vygotsky highlighted the importance of social interaction and guidance (scaffolding) from more knowledgeable individuals (peers or adults) in the learning process. This support helps learners achieve tasks they couldn't accomplish alone, moving them forward through their Zone of Proximal Development (ZPD).
- **Dialogue as Support:** Dialogue serves as a key mechanism for this social interaction and support, enabling the co-construction of meaning and understanding.

Thus, the statement that learning is a process of co-construction with support from others is a fundamental principle in many learning theories.

Relationship Between Assertion (A) and Reason (R)

We need to determine if Reason (R) correctly explains Assertion (A).

- Assertion (A) suggests promoting dialogue for collaborative learning.

- Reason (R) explains that learning involves co-construction with support from others.

The reason directly supports the assertion. Promoting dialogue is a practical strategy (mentioned in A) precisely because learning is inherently a social and collaborative process involving co-construction with the help of others (explained in R). The interactions and shared understanding developed through dialogue are the very means by which co-construction happens, making (R) a correct explanation for why (A) is an effective teaching strategy.

Conclusion

Both the Assertion and the Reason are true statements. Furthermore, the Reason provides a strong theoretical basis for the practical strategy suggested in the Assertion. The concept of learning as co-construction through social support explains why encouraging student dialogue is crucial for effective collaborative learning.

Therefore, the correct option is:

Both (A) and (R) are true and (R) is the correct explanation of (A).

23. Answer: b

Explanation:

Analyzing Statements on Children's Learning Processes

Understanding how children learn is key to effective teaching and development. Children's learning is a complex process influenced by various factors, including their experiences, environment, and cognitive development. Let's examine the provided statements to identify which one does not accurately describe how children learn.

Key Concepts in Children's Learning

Several theories and observations highlight specific characteristics of how children acquire knowledge and skills. We will look at each statement in the context of established educational principles.

Statement 1: Children Learn in a Spiral Way

This statement suggests that children revisit concepts or topics multiple times, encountering them at increasing levels of complexity. This is often referred to as **spiral learning**. For example, a child might first learn basic addition, then subtraction, and later revisit addition with larger numbers or multiple digits. This approach builds upon prior knowledge and reinforces understanding over time. This is generally considered a **correct** description of a learning pattern.

Statement 2: Children Learn in a Linear Manner

A **linear manner** of learning implies a strict, step-by-step progression. In this model, one topic or skill must be fully mastered before moving on to the next, with little or no revisiting of previous material. This contrasts with how children often naturally explore and integrate information. While structure is important, learning is rarely purely sequential. Children often jump back and forth, connect seemingly unrelated ideas, and revisit topics organically. Therefore, this statement is often considered **NOT correct** as a universal description of children's learning.

Statement 3: Children Learn from Their Mistakes and Errors

Making mistakes is a natural and vital part of the learning journey for children. When children try an activity, encounter an error, and reflect on why it happened, they often gain deeper understanding. This process, sometimes called 'trial and error' or learning through 'scaffolding', allows children to experiment, identify problems, and find solutions. This is a well-recognized and **correct** aspect of cognitive development and learning.

Statement 4: Children Learn When They Are Able to Make Active Connections

Effective learning occurs when children can connect new information to their existing knowledge and experiences. **Active connections** help children make sense

of the material and integrate it into their understanding of the world. When learning is relevant and meaningful, children are more engaged and retain information better. This principle of making connections is a fundamental aspect of constructivist learning theories and is considered **correct**.

Conclusion on Children's Learning Patterns

Based on the analysis of educational principles:

- Spiral learning is a valid approach where concepts are revisited and deepened.
- Learning from mistakes is crucial for understanding and problem-solving.
- Making active connections enhances comprehension and retention.
- Learning strictly in a linear manner, without revisiting or flexibility, does not fully capture the dynamic and often non-sequential way children learn.

Therefore, the statement that is NOT correct regarding children's learning is that they learn in a linear manner.

24. Answer: c

Explanation:

Understanding the Constructivist Classroom

A **constructivist classroom** is a learning environment where students are actively involved in the learning process. The core idea of constructivism is that learners don't just receive information passively; instead, they construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences. This approach contrasts with traditional methods where the teacher is the primary source of information and students are expected to absorb it.

Meaning-Making: The Core of Constructivism

In a **constructivist classroom**, **meaning-making** is absolutely central to learning. This means that students learn by actively trying to make sense of new information and experiences. They connect what they are learning to their existing knowledge and beliefs. When faced with new concepts, students work to integrate them into their mental frameworks, creating a personal understanding. This process involves:

- Actively engaging with learning materials.
- Solving problems and reflecting on the process.
- Collaborating with peers to share perspectives.
- Building upon prior knowledge and experiences.
- Developing personal interpretations and understanding.

Essentially, learning is seen as an active process of constructing meaning, rather than passively acquiring facts.

Evaluating Other Learning Approaches

Let's look at why the other options are not considered central to a **constructivist classroom**:

- **Conditioning:** This concept is primarily associated with behaviorist theories, like Pavlov's classical conditioning or Skinner's operant conditioning. It focuses on stimulus-response associations and reinforcement, which is different from the active construction of knowledge.
- **Rote Memorization:** This involves learning information by memorizing it without necessarily understanding its meaning or context. While memorization can be a part of learning, it is not the central focus or goal in a constructivist setting, which emphasizes deep understanding over superficial recall.
- **Drill and Practice:** While useful for reinforcing skills, drill and practice often involves repetition without necessarily focusing on the underlying conceptual understanding or personal **meaning-making**. In a constructivist view, practice should follow understanding and be applied in meaningful contexts.

Conclusion on Central Learning Activity

Given the principles of constructivism, where learners build knowledge through active engagement and interpretation, **meaning-making** is the most fitting activity that is central to learning in such an environment. Students actively construct their understanding by making connections and deriving personal significance from their learning experiences.

25. Answer: d

Explanation:

Developing Self-Regulated Learning in Children

Helping children become capable of regulating their own learning involves empowering them to take control and manage their educational journey actively. Teachers play a crucial role in fostering this independence. Let's analyze the options to understand the best approach.

Understanding Self-Regulated Learning

Self-regulated learning refers to the process where students become active participants in their own learning. This means they can:

- Set personal learning goals.
- Plan and employ strategies to achieve these goals.
- Monitor their progress and performance.
- Adjust their strategies based on feedback and self-reflection.
- Maintain motivation and persistence.

Analyzing the Teacher's Role in Self-Regulation

Teachers can foster self-regulation by shifting from a directive role to a facilitative one. The goal is to equip children with the skills and mindset needed to manage their learning effectively.

Evaluating the Options Provided

- **Option 1: Encourage the children to follow instructions passively.**

This approach contradicts the core idea of self-regulation. Passive following of instructions does not help children develop the ability to manage their own learning processes, set goals, or choose strategies. Instead, it promotes dependence on external guidance.

- **Option 2: Rigidly maintain control over the processes of learning.**

While structure is important, rigid control by the teacher stifles the child's autonomy and initiative. Self-regulation requires children to have some level of control over their learning activities, pacing, and strategy choices. Excessive teacher control hinders this development.

- **Option 3: Discourage the children themselves to set goals and work out strategies to achieve them.**

This option is directly counterproductive to developing self-regulated learners. Setting goals and devising strategies are fundamental components of self-regulation. Discouraging these activities prevents children from learning how to manage their learning independently.

- **Option 4: Focus on development of metacognitive capabilities in children.**

This is the most effective approach. Metacognition is often described as "thinking about thinking" or "learning about learning." It involves skills like planning, monitoring, and evaluating one's own learning processes. When children develop metacognitive capabilities, they understand how they learn best, can identify effective strategies, track their progress, and adapt their approach when needed. These skills are the very essence of self-regulation. Teachers can foster metacognition by encouraging children to reflect on their learning, ask questions about their strategies, and identify challenges and solutions.

Conclusion on Fostering Self-Regulation

To make children capable of regulating their own learning, teachers should prioritize the development of their **metacognitive capabilities**. This empowers students to become active, strategic, and independent learners by teaching them how to manage and improve their own learning processes.

26. Answer: a

Explanation:

Strategies for Effective Problem-Solving

Effective problem-solving is a key skill for students. It involves understanding how to approach challenges and find solutions. The way students learn and practice these skills is important. Teaching methods should focus on helping students develop genuine understanding and adaptability, rather than just memorizing steps.

The Role of Worked Examples in Learning

Worked examples are helpful tools that show students how to solve problems step-by-step. They can guide students and provide a model for problem-solving. However, the benefit students get from worked examples depends heavily on how they interact with them. Simply reading through them isn't as effective as actively engaging with the process.

Analyzing Student Approaches to Problem-Solving

Let's examine different ways students might approach learning problem-solving:

- **Promoting Active Thinking on Worked Examples:** Encouraging students to actively **think** about the methods shown in **worked examples** is highly beneficial. This involves asking questions like "Why was this step taken?", "What is the goal here?", and "How does this relate to similar problems?". This active engagement helps students truly understand the **strategies** and makes them more likely to apply them successfully in new situations.

- **Passive Transfer of Strategies:** If students are just given worked examples and told to transfer the strategies passively, they are less likely to learn effectively. Passive learning means they might just try to copy the steps without really understanding the logic. True learning involves active thought and adaptation, not just passive observation.
- **Discouraging Thinking Aloud:** Thinking aloud is a useful technique where students verbalize their thought process as they solve a problem. This helps them organize their thoughts, track their progress, and identify any mistakes. Discouraging students from doing this hinders their ability to develop self-awareness and metacognitive skills, which are vital for **effective problem-solving**.
- **Discouraging Use of Worked Examples:** Worked examples provide valuable insights into problem-solving methods. Discouraging students from looking at them removes a useful resource. While it's important for students to eventually solve problems independently, worked examples can be crucial scaffolding, especially when learning new or complex topics.

Enhancing Problem-Solving Skills

For students to achieve **effective problem-solving**, they need to be actively involved in their learning. The best approach involves encouraging them to deeply engage with and **think** critically about **worked examples**. This active learning process empowers students to understand and adapt problem-solving **strategies**, leading to better long-term comprehension and skill development.

27. Answer: b

Explanation:

Effective Learning Strategy Analysis

Understanding what constitutes an **effective learning strategy** is key to academic success. Effective strategies help learners grasp, retain, and apply information

meaningfully. Let's analyze the given options to identify the most beneficial approach to learning.

Evaluating Learning Process Options

We will examine each strategy to determine its effectiveness based on educational principles:

- **Option 1: Total teacher control of learning processes**

While teacher guidance is important, learning is most effective when students are actively engaged and have some autonomy. Complete teacher control can sometimes limit student exploration and critical thinking, making it less effective than more collaborative or student-centered approaches.

- **Option 2: Creating concept maps and associating new information with previous one**

This strategy is highly effective. **Concept maps** visually organize information and show relationships between ideas. Crucially, linking **new information** to **previous knowledge** (or prior learning) helps build a robust mental framework (schema). This process aids comprehension, memory retention, and the ability to apply knowledge in different contexts. It fosters meaningful learning rather than rote memorization.

- **Option 3: Decontextualizing information and remembering it in disconnected chunks**

Learning information without its context and remembering it in isolated pieces is generally an inefficient strategy. This method, often associated with rote learning, makes it difficult to understand the 'why' behind the information and hinders the ability to use it effectively in new situations. It leads to superficial understanding and poor long-term retention.

- **Option 4: Meaningless drill and practice**

Practice and repetition can be beneficial for skill development and memory consolidation. However, when the drill is perceived as **meaningless** – lacking purpose or connection to understanding – its effectiveness is greatly reduced. Effective practice is usually focused, provides feedback, and reinforces meaningful concepts.

Conclusion on Effective Learning

Comparing the options, creating concept maps and linking new learning to existing knowledge stands out as the most effective learning strategy. It promotes deep understanding, better retention, and facilitates the transfer of knowledge by building connections within the learner's existing cognitive structure.

28. Answer: a

Explanation:

Children's Theories and Meaning-Making: Assertion-Reason Analysis

This question asks us to evaluate an Assertion (A) about children creating their own theories and a Reason (R) explaining why they do so. We need to determine if both statements are true and if the Reason correctly explains the Assertion.

Evaluating Assertion (A): Children's Self-Generated Theories

The assertion states: Children often make up theories of their own to explain various phenomena.

- This statement is accurate. Children are naturally curious and observe the world around them.
- Based on their observations and existing knowledge (which might be limited), they actively construct explanations for events they witness.
- These explanations are often referred to as "children's theories" or "misconceptions." For example, a child might believe that the sky is crying when it rains, or that the sun moves across the sky because it's being pulled by something.
- This process reflects their active engagement in understanding their environment, a core concept in developmental psychology.

Therefore, Assertion (A) is true.

Evaluating Reason (R): Children as Active Meaning-Makers

The reason states: **Children are active beings always engaged in processes of meaning-making.**

- This statement is also accurate. Children are not passive recipients of information; they are active participants in their own learning.
- From a very young age, they explore, experiment, interact with their surroundings, and try to make sense of their experiences.
- This continuous process of interpreting experiences and building understanding is what is meant by "meaning-making."
- This perspective is central to constructivist learning theories, emphasizing that knowledge is built or constructed by the learner.

Therefore, Reason (R) is true.

Assessing the Relationship Between Assertion (A) and Reason (R)

We need to determine if Reason (R) provides a valid explanation for Assertion (A).

- Assertion (A) describes a behavior: children creating their own theories.
- Reason (R) describes a fundamental characteristic of children: their active engagement in making meaning.
- The reason explains the assertion because children's innate drive to understand and make sense of the world (R) naturally leads them to form their own explanations or theories (A) about phenomena they encounter. Their active meaning-making process is the very reason **why** they develop these self-made theories.

In essence, the active nature of children in constructing meaning directly results in them formulating their unique theories about how things work.

Final Conclusion

Based on the analysis:

- Both Assertion (A) and Reason (R) are true statements.
- Reason (R) correctly explains why Assertion (A) is true.

This corresponds to the first option.

29. Answer: a

Explanation:

Learning Control and Its Impact on Motivation and Learner Type

Understanding the connection between a student's feeling of control over their learning activities, their motivation, and the type of learner they become is crucial in education. Let's break down how these elements interact:

The Role of Perceived Control in Learning

When students believe they have autonomy and can influence their learning path – for instance, by choosing research topics, selecting assignment formats, or managing their study schedule – they possess a sense of **perceived control**. This feeling of agency is a powerful factor in the learning process.

Impact on Motivation Levels

A strong sense of perceived control directly influences a student's motivation. Research in educational psychology indicates that autonomy and control foster intrinsic motivation. Intrinsic motivation arises from internal rewards, like enjoyment and interest in the learning itself, rather than external pressures (like grades). Consequently, students who feel in control are likely to maintain a **high** level of motivation.

- **High Motivation:** This stems from genuine interest and the satisfaction derived from the learning activity.

- **Contrast with Low Control:** Conversely, when students lack control and feel dictated by external requirements, their motivation tends to be lower and more reliant on external factors (extrinsic motivation) or may diminish significantly.

Development into Self-Regulating Learners

Students who are highly motivated and feel in control of their learning are better positioned to develop into **self-regulating learners**. These learners are characterized by:

- **Proactive Engagement:** They actively participate in their learning, setting personal goals and actively seeking knowledge.
- **Strategy Use:** They employ various learning strategies (like summarizing, note-taking, or practice testing) and monitor their effectiveness.
- **Metacognitive Awareness:** They understand their own learning processes ("thinking about thinking") and can adapt their approach as needed.
- **Responsibility:** They take ownership of their learning journey, managing their time, effort, and focus.

This is in direct contrast to **passive learners**, who typically wait for instructions, exert minimal effort, and do not take initiative in their learning process. A lack of control often contributes to students becoming passive rather than active, self-directed learners.

Conclusion

In summary, when students perceive that they have control over their learning activities, it cultivates a **high** level of motivation. This heightened motivation, coupled with the sense of agency, empowers them to become proactive, strategic, and responsible **self-regulating learners**.

30. Answer: a

Explanation:

Understanding Emotions and Their Impact on Learning

Meaningful learning involves deeply understanding concepts and connecting new information with existing knowledge. Emotions significantly influence how effectively we learn. This explanation explores how different emotions affect the learning process, focusing on identifying which emotion typically hinders meaningful learning.

The Hindering Role of Anxiety in Learning

Anxiety is an emotion that often obstructs meaningful learning. When learners experience anxiety, particularly related to academic performance or fear of failure, several negative effects can occur:

- **Cognitive Load:** Anxiety consumes mental energy. Learners preoccupied with worry have fewer cognitive resources available to focus on understanding new material or engaging in complex thinking processes required for deep learning.
- **Reduced Attention and Focus:** High levels of anxiety can make it difficult to concentrate. Attention may be diverted to anxious thoughts rather than the subject matter, preventing the learner from fully absorbing and processing information.
- **Memory Impairment:** Anxiety can interfere with both the encoding (storing) and retrieval (recalling) of information. This makes it harder to remember what has been learned, a key aspect of meaningful learning.
- **Impact on Problem-Solving:** Complex cognitive tasks, like problem-solving and critical thinking, demand focused mental effort. Anxiety can disrupt these processes, making it harder for students to find solutions or connect ideas meaningfully.

Therefore, anxiety creates a psychological state that is generally detrimental to the concentration, processing, and retention needed for meaningful learning.

Evaluating Other Emotions in the Learning Context

The other options provided represent emotions that typically support or facilitate learning:

- **Enthusiasm:** This positive emotion boosts motivation and engagement. Learners who are enthusiastic about a subject are more likely to invest effort, explore topics independently, and persist in the face of difficulties, all contributing to meaningful learning.
- **Happiness:** Positive emotions, including happiness, are associated with broader attention spans and enhanced cognitive flexibility. This positive state can make the learning experience more enjoyable and improve the ability to process and integrate information.
- **Pride:** Experiencing pride, often after achieving a learning goal or mastering a skill, acts as positive reinforcement. It can increase confidence and motivate learners to seek further challenges, thereby supporting continued learning.

Identifying the Emotion that Hinders Learning

Comparing the effects, **anxiety** stands out as the primary emotion that hinders the process of meaningful learning among the choices given. While enthusiasm, happiness, and pride generally foster a more conducive environment for learning and academic success, anxiety creates barriers to effective cognitive functioning.

31. Answer: c

Explanation:

Exploring Properties of Integers in Mathematics

The question asks us to identify which specific mathematical property holds true for the set of integers. Integers are whole numbers, including negative numbers and zero (... , -3, -2, -1, 0, 1, 2, 3, ...). Let's examine each property mentioned in the options to see if it applies correctly to integers.

Understanding Mathematical Properties for Integers

We will analyze four common properties: Commutativity and Associativity for subtraction and division, and the Closure property for subtraction and division.

Analysis of Commutativity in Subtraction

Commutativity means that the order of operands does not change the result. For subtraction, this property would mean that for any two integers ' a ' and ' b ', the equation ' $a - b = b - a$ ' is always true.

Let's test this with an example:

- Let $a = 5$ and $b = 3$.
- Then $a - b = 5 - 3 = 2$.
- And $b - a = 3 - 5 = -2$.

Since $2 \neq -2$, the equation $a - b = b - a$ is not always true for integers. Therefore, integers do **not** exhibit commutativity in subtraction.

Analysis of Associativity in Division

Associativity refers to whether the grouping of operands affects the result. For division, this property implies that for any three integers ' a ', ' b ', and ' c ' (where $b \neq 0$ and $c \neq 0$), the equation ' $(a \div b) \div c = a \div (b \div c)$ ' holds true.

Let's test this with an example:

- Let $a = 12$, $b = 4$, and $c = 2$.
- Calculate the left side: $(a \div b) \div c = (12 \div 4) \div 2 = 3 \div 2 = 1.5$.
- Calculate the right side: $a \div (b \div c) = 12 \div (4 \div 2) = 12 \div 2 = 6$.

Since $1.5 \neq 6$, the equation $(a \div b) \div c = a \div (b \div c)$ is not always true for integers. Thus, integers do **not** have associativity in division.

Analysis of Closure in Subtraction

The **Closure property** states that if you perform an operation on any two elements within a set, the result must also be an element of that same set. For subtraction, this means that if ' a ' and ' b ' are integers, then ' $a - b$ ' must also be an integer.

Let's test this with various examples:

- Example 1: $a = 7, b = 3$. Both are integers. $a - b = 7 - 3 = 4$. 4 is an integer.
- Example 2: $a = 3, b = 7$. Both are integers. $a - b = 3 - 7 = -4$. -4 is an integer.
- Example 3: $a = -2, b = 5$. Both are integers. $a - b = -2 - 5 = -7$. -7 is an integer.
- Example 4: $a = -5, b = -3$. Both are integers. $a - b = -5 - (-3) = -5 + 3 = -2$. -2 is an integer.

In all cases, subtracting one integer from another integer results in another integer. Therefore, integers are **closed** under subtraction.

Analysis of Closure in Division

For the closure property in division, if ' a ' and ' b ' are integers (with $b \neq 0$), then ' $a \div b$ ' must always result in an integer.

Let's test this:

- Example 1: $a = 6, b = 3$. Both are integers. $a \div b = 6 \div 3 = 2$. 2 is an integer.
- Example 2: $a = 5, b = 2$. Both are integers. $a \div b = 5 \div 2 = 2.5$. 2.5 is not an integer.

Since we found a case ($5 \div 2$) where the division of two integers does not result in an integer, the set of integers is **not closed** under division.

Conclusion on Integer Properties

Based on the analysis:

- Commutativity in subtraction does NOT hold.
- Associativity in division does NOT hold.
- **Closure in subtraction DOES hold.**
- Closure in division does NOT hold.

Therefore, the property that holds true for integers among the given options is Closure in subtraction.

32. Answer: c

Explanation:

This solution explains the step-by-step process to find the **value** of the given mathematical expression: $8 - [(-2) \times (-3) - \{2 - (4 - 5)\}]$. We will use the order of operations (PEMDAS/BODMAS) to correctly evaluate the expression.

Understanding the Mathematical Expression

The expression involves several nested grouping symbols: square brackets [...], curly braces {...}, and parentheses (...). It also includes subtraction and multiplication operations. To find the correct **value**, we must follow the standard order of operations:

- Parentheses/Brackets (innermost first)
- Exponents/Orders
- Multiplication and Division (from left to right)
- Addition and Subtraction (from left to right)

The mathematical expression we need to solve is:

$$8 - [(-2) \times (-3) - \{2 - (4 - 5)\}]$$

Step-by-Step Calculation Breakdown

Evaluating the Innermost Parenthesis

We begin by evaluating the expression inside the innermost parentheses: $(4 - 5)$.

Calculation using LaTeX:

$$4 - 5 = -1$$

Substituting this result back into the main expression, we get:

$$8 - [(-2) \times (-3) - \{2 - (-1)\}]$$

Simplifying the Inner Brackets

Next, we simplify the expression within the curly braces: $\{2 - (-1)\}$.

Remember that subtracting a negative number is equivalent to adding its positive counterpart.

Calculation using LaTeX:

$$2 - (-1) = 2 + 1 = 3$$

The expression is updated to:

$$8 - [(-2) \times (-3) - 3]$$

Performing the Multiplication

Now, we perform the **multiplication** operation within the square brackets: $(-2) \times (-3)$.

The product of two negative numbers always results in a positive number.

Calculation using LaTeX:

$$(-2) \times (-3) = 6$$

The expression simplifies to:

$$8 - [6 - 3]$$

Completing the Square Bracket Calculation

We now evaluate the expression inside the square brackets: $[6 - 3]$.

Calculation using LaTeX:

$$6 - 3 = 3$$

The expression further simplifies to:

$$8 - 3$$

Final Calculation

Finally, we perform the last **subtraction** operation to determine the overall **value** of the expression.

Calculation using LaTeX:

$$8 - 3 = 5$$

Therefore, the final **value** of the given mathematical expression $8 - [(-2) \times (-3) - \{2 - (4 - 5)\}]$ is 5.

33. Answer: d

Explanation:

Calculation:

To arrange the numbers $4/3$, $-3/2$, $-9/8$, $7/4$ in descending order using the Least Common Multiple (LCM) method, we need to find a common denominator for these fractions.

The LCM of the denominators 3, 2, and 8 is 24.

$4/3$ can be written as $(4/3) \times (8/8) = 32/24$

$-3/2$ can be written as $(-3/2) \times (12/12) = -36/24$

$-9/8$ can be written as $-9/8 \times (3/3) = -27/24$

$7/4$ can be written as $(7/4) \times (6/6) = 42/24$

Arrange them in descending order,

$42/24, 32/24, -27/24, -36/24 \Rightarrow 7/4, 4/3, -9/8, -3/2$

34. Answer: c

Explanation:

Simplifying the Initial Exponent Equation

We are given the equation: $\frac{[(15)^a]^{bc}}{[(5)^{ab}]^c} = 1$

Let's simplify this equation using the laws of exponents. The relevant law here is $(x^m)^n = x^{mn}$. Applying this to the numerator and the denominator:

- Numerator: $[(15)^a]^{bc} = (15)^{a \times b \times c} = (15)^{abc}$
- Denominator: $[(5)^{ab}]^c = (5)^{ab \times c} = (5)^{abc}$

Substituting these back into the equation gives:

$$\frac{(15)^{abc}}{(5)^{abc}} = 1$$

Now, we use another exponent rule, $\frac{x^m}{y^m} = (\frac{x}{y})^m$:

$$(\frac{15}{5})^{abc} = 1$$

Simplifying the fraction inside the parenthesis:

$$(3)^{abc} = 1$$

For any non-zero base (like 3), an expression equals 1 only if the exponent is 0. Therefore:

$$\implies abc = 0$$

Calculating the Value of 'b'

The problem states that $a = 2$ and $c = 3$. We can use these values in the equation we derived ($abc = 0$) to find the value of b .

Substitute $a = 2$ and $c = 3$:

$$(2)(b)(3) = 0$$

Multiplying the known numbers:

$$\implies 6b = 0$$

Solving for b :

$$\implies b = \frac{0}{6} \implies b = 0$$

So, the value of b is 0.

Evaluating the Final Expression

We need to find the value of the expression $\frac{5^{a(b+c)}}{5^{a+2}}$. We now know the values for a , b , and c :

- $a = 2$
- $b = 0$
- $c = 3$

First, let's calculate the exponent in the numerator, $a(b+c)$:

$$\text{Numerator exponent} = a(b+c) = 2(0+3) = 2(3) = 6$$

Next, calculate the exponent in the denominator, $a+2$:

$$\text{Denominator exponent} = a+2 = 2+2 = 4$$

Now substitute these exponents back into the expression:

$$\frac{5^6}{5^4}$$

Using the quotient rule for exponents, $\frac{x^m}{x^n} = x^{m-n}$:

$$= 5^{6-4} = 5^2$$

Finally, calculate the value:

$$= 25$$

Final Answer Verification

The calculation shows that the value of the expression $\frac{5^{a(b+c)}}{5^{a+2}}$ when $a = 2$ and $c = 3$ (which implies $b = 0$) is 25.

Comparing this result with the given options:

- Option 1: $\frac{1}{5}$
- Option 2: 1
- Option 3: 25
- Option 4: 625
- Option 5: (empty)

Our calculated value matches Option 3.

35. Answer: a

Explanation:

Calculations:

with the smallest non-zero digit at the highest place value and the remaining digits arranged in ascending order, ensuring that the last digit is odd.

The smallest six-digit odd number using the digits 8, 3, 0, 5, 1, 4 without repetition would be 103485

with the largest digit at the highest place value and the remaining digits arranged in descending order, ensuring that the last digit is even.

The largest four-digit even number using these same digits without repetition would be 8540

Now, to find the difference between these two numbers:

$$\begin{array}{r} 103485 \\ - 8540 \\ \hline = 94945 \end{array}$$

Hence, The Correct Option is 1.

36. Answer: b

Explanation:

Persons and Work Completion

This question asks us to determine the number of days required for 12 persons to complete a specific work, given that 8 persons can complete the same work in 9 days. This type of problem typically relies on the concept of inverse proportionality in work and time scenarios.

Work Calculation Principle

The core idea is that the total amount of work required to complete a task remains constant. The relationship between the number of persons working and the time (days) they take is inversely proportional. This means that if you increase the number of persons, the time needed decreases, and vice versa, assuming everyone works at the same rate.

We can express this relationship as:

$$\text{Number of Persons} \propto \frac{1}{\text{Number of Days}}$$

Or, keeping the total work constant:

$$(\text{Number of Persons}_1) \times (\text{Number of Days}_1) = (\text{Number of Persons}_2) \times (\text{Number of Days}_2)$$

Total Work Determination

First, let's calculate the total work required in terms of "person-days". A person-day represents the amount of work one person can do in one day.

Given:

- Initial number of persons (P_1) = 8
- Initial number of days (D_1) = 9

$$\text{Total Work} = P_1 \times D_1$$

$$\text{Total Work} = 8 \text{ persons} \times 9 \text{ days} = 72 \text{ person-days}$$

This means the task requires a total effort equivalent to 72 person-days.

Days Calculation for New Group

Now, we need to find out how many days (D_2) it will take for a different number of persons (P_2) to complete this same work (72 person-days).

Given:

- New number of persons (P_2) = 12
- Total Work = 72 person-days

Using the relationship $P_2 \times D_2 = \text{Total Work}$:

$$12 \text{ persons} \times D_2 = 72 \text{ person-days}$$

To find D_2 , we rearrange the equation:

$$D_2 = \frac{72 \text{ person-days}}{12 \text{ persons}}$$

$$D_2 = 6 \text{ days}$$

Final Calculation Result

Therefore, 12 persons will complete the same work in 6 days. This result aligns with the inverse proportionality principle: as the number of workers increased from 8 to 12, the number of days required decreased from 9 to 6.

37. Answer: d

Explanation:

Concept use:

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

Calculation:

$$(3x - \frac{1}{2x})^2 = 9x^2 + \frac{1}{4x^2} - 3/2 \times 2$$

$$\Rightarrow 64 = 9x^2 + \frac{1}{4x^2} - 3$$

$$\Rightarrow 67 = 9x^2 + \frac{1}{4x^2}$$

Hence, the Correct option is 4.

38. Answer: b

Explanation:

Solving the Algebraic Equation

We are given an equation involving a variable x : $0.5 \times [-(0.6 - 0.2x)] = 0.3x - 0.2$ Our first step is to solve this equation to find the value of x . Let's break down the process:

- **Simplify the left side:** We start by simplifying the expression inside the brackets and then multiplying by 0.5.
 - Distribute the negative sign inside the bracket: $-(0.6 - 0.2x) = -0.6 + 0.2x$.
 - Now the equation becomes: $0.5 \times (-0.6 + 0.2x) = 0.3x - 0.2$.
 - Distribute the 0.5: $(0.5 \times -0.6) + (0.5 \times 0.2x) = 0.3x - 0.2$.
 - This simplifies to: $-0.3 + 0.1x = 0.3x - 0.2$.
- **Isolate the variable x :** Now, we rearrange the equation to get all the terms with x on one side and the constant terms on the other.
 - Subtract $0.1x$ from both sides: $-0.3 = 0.3x - 0.1x - 0.2$.
 - Combine the x terms: $-0.3 = 0.2x - 0.2$.
 - Add 0.2 to both sides: $-0.3 + 0.2 = 0.2x$.
 - Simplify: $-0.1 = 0.2x$.
- **Solve for x :** Divide both sides by 0.2 to find the value of x .

Using LaTeX for the calculation:

$$x = \frac{-0.1}{0.2}$$

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

$$x = -0.5$$

Evaluating the Expression $(2x + 1)$

Now that we have found the value of x , we need to calculate the value of the expression $(2x + 1)$.

- Substitute the value $x = -0.5$ into the expression:

$$2x + 1 = 2(-0.5) + 1$$

- Perform the multiplication:

$$2(-0.5) = -1$$

- Complete the addition:

$$-1 + 1 = 0$$

So, the value of the expression $(2x + 1)$ is 0. This matches one of the given options.

Your Personal Exams Guide

39. Answer: d

Explanation:

Simplifying Expressions to Find Equivalence to $5x - 2$

The question asks us to identify which of the given algebraic expressions simplifies to the target expression $5x - 2$. We need to carefully simplify each option provided.

Evaluating Each Expression Option

We will evaluate each option step by step, using the distributive property and combining like terms. All calculations will use LaTeX formatting for clarity.

Simplifying Option 1

The first expression is $\frac{3(4x+3)+4(2x-5)}{4}$.

- First, distribute the constants in the numerator:
 - $3(4x + 3) = 12x + 9$
 - $4(2x - 5) = 8x - 20$
- Now, add these results together: $(12x + 9) + (8x - 20)$
- Combine the x terms and the constant terms: $(12x + 8x) + (9 - 20) = 20x - 11$
- So, the expression becomes: $\frac{20x-11}{4}$

This simplified expression, $\frac{20x-11}{4}$, is not equal to $5x - 2$.

Simplifying Option 2

The second expression is $\frac{5(2-2x)-2(5x+1)}{4}$.

- Distribute the constants in the numerator:
 - $5(2 - 2x) = 10 - 10x$
 - $-2(5x + 1) = -10x - 2$
- Add these results together: $(10 - 10x) + (-10x - 2)$
- Combine the x terms and the constant terms: $(10 - 2) + (-10x - 10x) = 8 - 20x$
- So, the expression becomes: $\frac{8-20x}{4}$
- Factor out 4 from the numerator: $\frac{4(2-5x)}{4}$
- Simplify by cancelling the 4s: $2 - 5x$

This simplified expression, $2 - 5x$, is not equal to $5x - 2$.

Simplifying Option 3

The third expression is $\frac{6(5x-4)-5(2x-3)}{4}$.

- Distribute the constants in the numerator:
 - $6(5x - 4) = 30x - 24$
 - $-5(2x - 3) = -10x + 15$

- Add these results together: $(30x - 24) + (-10x + 15)$
- Combine the x terms and the constant terms: $(30x - 10x) + (-24 + 15) = 20x - 9$
- So, the expression becomes: $\frac{20x-9}{4}$

This simplified expression, $\frac{20x-9}{4}$, is not equal to $5x - 2$.

Simplifying Option 4

The fourth expression is $\frac{2(3x+1)+2(7x-5)}{4}$.

- Distribute the constants in the numerator:
 - $2(3x + 1) = 6x + 2$
 - $2(7x - 5) = 14x - 10$
- Add these results together: $(6x + 2) + (14x - 10)$
- Combine the x terms and the constant terms: $(6x + 14x) + (2 - 10) = 20x - 8$
- So, the expression becomes: $\frac{20x-8}{4}$
- Factor out 4 from the numerator: $\frac{4(5x-2)}{4}$
- Simplify by cancelling the 4s: $5x - 2$

This simplified expression, $5x - 2$, matches the target expression.

Identifying the Correct Expression

After simplifying all the options, we found that Option 4 simplifies exactly to $5x - 2$. Therefore, Option 4 is the correct answer.

40. Answer: b

Explanation:

Calculating Compound Interest on Rs. 4000 at 10% for $2\frac{1}{2}$ Years

This explanation details the calculation of **compound interest** for a principal amount of Rs. 4000 over a period of $2\frac{1}{2}$ years at an annual interest **rate** of 10%, compounded

annually. We'll break down the process step-by-step.

Key Financial Terms

- **Principal (P):** The initial amount of money, which is Rs. 4000.
- **Rate (R):** The percentage at which interest is charged per year, given as 10%.
- **Time (T):** The duration for which the money is invested or borrowed, which is $2\frac{1}{2}$ years.
- **Compounding Frequency:** The interest is compounded annually, meaning interest is added to the principal once a year.

Strategy for Fractional Time Periods

Since the interest is compounded annually, but the **time** period includes a half-year ($\frac{1}{2}$), we handle it in two parts:

1. Calculate the amount accumulated after the full years (2 years).
2. Calculate the simple interest on the accumulated amount for the remaining fractional period ($\frac{1}{2}$ year).

Calculating Amount After 2 Full Years

We use the compound interest formula for the first 2 years:

$$A_n = P \left(1 + \frac{R}{100} \right)^n$$

Where:

- P = Rs. 4000
- R = 10%
- n = 2 years

Substituting these values into the formula:

$$A_2 = 4000 \left(1 + \frac{10}{100} \right)^2$$

$$A_2 = 4000 (1 + 0.1)^2$$

$$A_2 = 4000 (1.1)^2$$

$$A_2 = 4000 \times 1.21$$

$$A_2 = 4840$$

The amount accumulated after 2 years is Rs. 4840.

Calculating Interest for the Remaining Half Year

Now, we calculate the simple interest on the amount Rs. 4840 for the remaining $\frac{1}{2}$ year at the same annual rate of 10%.

The formula for Simple Interest (SI) is:

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

Here, the Principal for this calculation is the amount after 2 years:

- P = Rs. 4840
- R = 10%
- T = $\frac{1}{2}$ year

Calculating the simple interest:

$$SI_{\frac{1}{2}} = \frac{4840 \times 10 \times \frac{1}{2}}{100}$$

$$SI_{\frac{1}{2}} = \frac{4840 \times 5}{100}$$

$$SI_{\frac{1}{2}} = \frac{24200}{100}$$

$$SI_{\frac{1}{2}} = 242$$

The interest earned during the last half year is Rs. 242.

Total Amount and Final Compound Interest

To find the total amount after $2\frac{1}{2}$ years, we add the interest earned in the last half year to the amount accumulated after 2 years.

Total Amount (A) = Amount after 2 years + Interest for $\frac{1}{2}$ year

$$A = 4840 + 242$$

$$A = 5082$$

The total amount after $2\frac{1}{2}$ years is Rs. 5082.

The **compound interest** is the total amount minus the original principal:

Compound Interest (CI) = Total Amount - Original Principal

$$CI = 5082 - 4000$$

$$CI = 1082$$

Thus, the **compound interest** earned is Rs. 1082.

41. Answer: d

Explanation:

Adjacent Angles Summing to 180 Degrees Explained

The question asks to identify the specific term for two **adjacent angles** whose sum equals 180 degrees. Let's break down the concepts involved.

Understanding Adjacent Angles

Adjacent angles are angles that share a common vertex (the corner point) and a common side (ray), but they do not overlap. Imagine two slices of a pie next to each other; they share a cut line and the center point.

The Condition: Sum of 180 Degrees

The key condition given is that the sum of these two adjacent angles is 180° . This specific sum has a significant geometric meaning.

Defining a Linear Pair

A **linear pair** is a special case of adjacent angles. It is formed when two lines intersect. The two angles in a linear pair:

- Are adjacent (share a vertex and a common side).
- Have non-common sides that are opposite rays, meaning they form a straight line.

Because their non-common sides form a straight line, the sum of the angles in a linear pair is always 180° . This perfectly matches the condition stated in the question.

For example, if two lines intersect, they form four angles. Take any two angles that are next to each other and whose outer sides form one of the straight lines; these two angles form a linear pair and their sum will be 180° .

Evaluating Other Options

- **Pair of corresponding angles:** These angles are in the same position at different intersections when a line (transversal) crosses two other lines. They are only equal if the two lines are parallel, and their sum is not generally 180° . They are also not necessarily adjacent.
- **Pair of alternate angles:** These angles are on opposite sides of the transversal and between the two lines. Like corresponding angles, they are equal if the lines are parallel, but their sum is not generally 180° , nor are they necessarily adjacent.
- **Complementary angles:** These are two angles whose sum is 90° , not 180° .

Conclusion

Based on the definitions, when two **adjacent angles** have a sum of 180° , they form a linear pair.

42. Answer: a

Explanation:

Finding the Angle x in Intersecting Line Segments

This problem requires us to find the value of an unknown angle, denoted by x , formed by two intersecting line segments AB and CD.

We are given:

- Line segments AB and CD intersect at point O.
- Angle $\angle OAC = 40^\circ$
- Angle $\angle OCA = 60^\circ$
- Angle $\angle ODB = 50^\circ$
- Angle $\angle OBD = x$

To find x , we will use the properties of triangles and vertically opposite angles.

Applying the Angle Sum Property in $\triangle OAC$

The sum of the interior angles in any triangle is always 180 degrees. We can apply this property to the triangle $\triangle OAC$.

The angles in $\triangle OAC$ are $\angle OAC$, $\angle OCA$, and $\angle AOC$.

Using the angle sum property:

$$\angle OAC + \angle OCA + \angle AOC = 180^\circ$$

Substitute the given values:

$$40^\circ + 60^\circ + \angle AOC = 180^\circ$$

Combine the known angles:

$$100^\circ + \angle AOC = 180^\circ$$

Solve for $\angle AOC$:

$$\angle AOC = 180^\circ - 100^\circ$$

$$\angle AOC = 80^\circ$$

Using Vertically Opposite Angles

When two lines intersect, the angles opposite each other at the intersection point are called vertically opposite angles. They are equal in measure.

In this case, line segments AB and CD intersect at O. Therefore, $\angle AOC$ and $\angle BOD$ are vertically opposite angles.

$$\angle BOD = \angle AOC$$

Since we found $\angle AOC = 80^\circ$, we have:

$$\angle BOD = 80^\circ$$

Calculating the Value of x in $\triangle ODB$

Now, we can use the angle sum property again, this time for the triangle $\triangle ODB$.

The angles in $\triangle ODB$ are $\angle ODB$, $\angle OBD$ (which is x), and $\angle BOD$.

Using the angle sum property:

$$\angle ODB + \angle OBD + \angle BOD = 180^\circ$$

Substitute the known values:

$$50^\circ + x + 80^\circ = 180^\circ$$

Combine the known angles:

$$130^\circ + x = 180^\circ$$

Solve for x :

$$x = 180^\circ - 130^\circ$$

$$x = 50^\circ$$

Conclusion

By applying the angle sum property of triangles and the concept of vertically opposite angles, we determined that the value of angle $\angle OBD$, represented by x , is 50 degrees.

43. Answer: d

Explanation:

Establishing Triangle Congruence Using SAS

We are given two triangles, $\triangle ABC$ and $\triangle PQR$. The problem provides the following information:

- Equality of two angles: $\angle A = \angle P$.
- Equality of two pairs of sides: $AB = PR$ and $AC = PQ$.

To determine if the triangles are congruent, we can use the standard congruence rules. The Side-Angle-Side (SAS) congruence rule states that if two sides and the angle *included* between them in one triangle are equal to the corresponding two sides and the included angle in another triangle, then the triangles are congruent.

In $\triangle ABC$, the sides AB and AC are given, and the angle $\angle A$ is the angle included between them.

In $\triangle PQR$, the sides PR and PQ are given, and the angle $\angle P$ is the angle included between them.

We are given that $AB = PR$, $AC = PQ$, and $\angle A = \angle P$. Since the included angle $\angle A$ equals the included angle $\angle P$, and the adjacent sides are equal ($AB=PR$, $AC=PQ$), we can conclude that the triangles are congruent by the SAS rule.

The specific correspondence of vertices is determined by the equal sides and angles:

- Vertex A corresponds to Vertex P (since $\angle A = \angle P$).
- Side AB corresponds to Side PR . This implies Vertex B corresponds to Vertex R .

- Side AC corresponds to Side PQ. This implies Vertex C corresponds to Vertex Q.

Therefore, the congruence statement is: $\triangle ABC \cong \triangle PRQ$.

Using CPCTE for Corresponding Sides

The principle of "Corresponding Parts of Congruent Triangles are Equal" (CPCTE) states that all corresponding sides and angles of congruent triangles are equal.

Based on the congruence $\triangle ABC \cong \triangle PRQ$, we can identify the corresponding sides:

- Side BC in $\triangle ABC$ corresponds to Side RQ in $\triangle PRQ$.

Therefore, according to CPCTE:

$$BC = RQ$$

The problem provides expressions for the lengths of BC and QR:

- $BC = x + 7$
- $QR = 3x - 5$

Since $BC = RQ$, we can write:

$$x + 7 = 3x - 5$$

Solving the Equation for x

We now need to solve the algebraic equation $x + 7 = 3x - 5$ to find the value of x.

Step 1: Rearrange the equation to group terms with x and constant terms.

Subtract 'x' from both sides:

$$7 = 3x - x - 5$$

$$7 = 2x - 5$$

Step 2: Isolate the term with x.

Add 5 to both sides:

$$7 + 5 = 2x$$

$$12 = 2x$$

Step 3: Solve for x.

Divide both sides by 2:

$$x = \frac{12}{2}$$

$$x = 6$$

Final Answer Calculation

The calculation shows that the value of x is 6. We can verify this by plugging $x = 6$ back into the expressions for BC and QR:

- $BC = x + 7 = 6 + 7 = 13$
- $QR = 3x - 5 = 3(6) - 5 = 18 - 5 = 13$

Since $BC = QR$ when $x = 6$, our solution is correct.

44. Answer: c

Explanation:

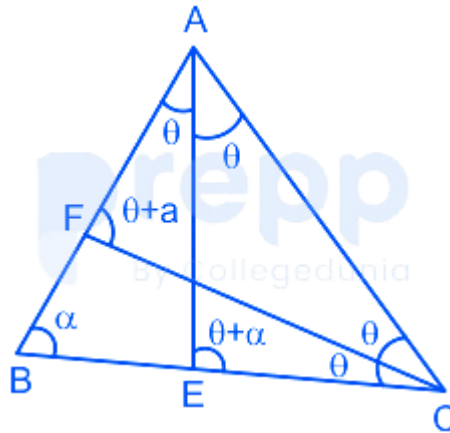
Given:

$BA = BC$ and AE and CF are the bisectors of $\angle A$ and $\angle C$ respectively, we know that $\angle BAE = \angle EAC$ and $\angle BCF = \angle FCA$.

Concept used:

Angles opposite to equal sides of triangle are equal.

Calculations:



In triangle ABC, since $BA = BC$, we know that $\angle ABC = \angle ACB$ by the isosceles triangle properties (angles opposite to equal sides are equal).

In $\triangle AEC$ and $\triangle CFA$:

1. AC is a common side to both triangles.
2. $\angle AEC = \angle CFA$ (each of these angles is a combination of the half angles we found before).
3. $AE = CF$ (since they are the bisectors of $\angle A$ and $\angle C$ respectively and in an isosceles triangle, the angle bisectors are also the altitude, median, and the perpendicular bisector).

Hence, by SAS congruence criterion, we have $\triangle AFC \cong \triangle CEA$. So, the correct option is 3:
 $\triangle AFC \cong \triangle CEA$

★ Mistake Points

The order determines the corresponding sides and angles.

When we say that two triangles are similar, we mean that the corresponding sides are in proportion and the corresponding angles are equal.

Hence do not get confused between $\triangle CAE$ & $\triangle CEA$

45. Answer: b

Explanation:

Calculations:

A hexagonal prism is a prism with a hexagonal base and top. It is a 3D shape and thus, is a polyhedron with 8 faces, 18 edges, and 12 vertices.

option 2.

$$3F + 4V - 2E = 3(8) + 4(12) - 2(18) = 24 + 48 - 36 = 24 + 12 = 36$$

46. Answer: d

Explanation:

Right Angled Triangle Sides and Altitudes Explained

This question asks us to determine the length of the **smallest altitude** for a **right-angled triangle**. We are given the lengths of the two sides that are not the hypotenuse, which are 16 cm and 30 cm.

Key Data: Right Triangle Legs

We know the following about the triangle:

- It's a **right-angled triangle**.
- The two legs (the sides forming the right angle) measure 16 cm and 30 cm.
- We need to find the shortest altitude.

Calculating the Hypotenuse Length

The sides measuring 16 cm and 30 cm are the legs of the right-angled triangle. The side opposite the right angle is the hypotenuse. We can find the length of the **hypotenuse** using the Pythagorean theorem, which states $a^2 + b^2 = c^2$, where a and b are the lengths of the legs and c is the length of the hypotenuse.

Let the legs be $a = 16$ cm and $b = 30$ cm.

Using the Pythagorean theorem:

$$c^2 = a^2 + b^2$$

$$c^2 = 16^2 + 30^2$$

$$c^2 = 256 + 900$$

$$c^2 = 1156$$

Now, we find the square root of 1156:

$$c = \sqrt{1156}$$

$$c = 34 \text{ cm}$$

The hypotenuse is 34 cm long.

Understanding Altitudes in a Right Triangle

A triangle has three altitudes. In a right-angled triangle, two of these altitudes are simply the legs themselves, because each leg is perpendicular to the other leg.

- The altitude corresponding to the 16 cm leg is the 30 cm leg.
- The altitude corresponding to the 30 cm leg is the 16 cm leg.
- The third altitude is the one drawn from the vertex of the right angle perpendicular to the hypotenuse.

A key principle is that the shortest altitude corresponds to the longest side of the triangle. In this right-angled triangle, the longest side is the hypotenuse (34 cm).

Finding the Smallest Altitude (to the Hypotenuse)

We need to calculate the length of the altitude to the hypotenuse. We can do this using the area of the triangle.

Calculating Triangle Area

The area of a triangle is given by $\frac{1}{2} \times \text{base} \times \text{height}$. For a right-angled triangle, we can easily calculate the area using the two legs:

$$\text{Area} = \frac{1}{2} \times \text{leg}_1 \times \text{leg}_2$$

$$\text{Area} = \frac{1}{2} \times 16 \text{ cm} \times 30 \text{ cm}$$

$$\text{Area} = 8 \text{ cm} \times 30 \text{ cm}$$

$$\text{Area} = 240 \text{ cm}^2$$

Calculating Altitude to Hypotenuse

Now we use the area and the hypotenuse length to find the altitude (h) corresponding to the hypotenuse:

$$\text{Area} = \frac{1}{2} \times \text{hypotenuse} \times h$$

$$240 \text{ cm}^2 = \frac{1}{2} \times 34 \text{ cm} \times h$$

$$240 = 17 \times h$$

Solving for h :

$$h = \frac{240}{17} \text{ cm}$$

Converting the Altitude to a Mixed Number

To better compare this altitude with the legs, let's convert the improper fraction $\frac{240}{17}$ into a mixed number. We perform the division:

$$240 \div 17$$

17 goes into 240 fourteen times ($17 \times 14 = 238$), with a remainder of 2 ($240 - 238 = 2$).

So,

$$h = 14\frac{2}{17} \text{ cm}$$

Identifying the Smallest Altitude

The three altitudes of this right-angled triangle are:

- 16 cm (one leg)
- 30 cm (the other leg)
- $14\frac{2}{17}$ cm (altitude to the hypotenuse)

Comparing these lengths, the smallest altitude is $14\frac{2}{17}$ cm.

The final answer is the length of this smallest altitude.

47. Answer: d

Explanation:

Finding the Total Surface Area of a Cylinder

This solution explains how to calculate the **total surface area** of a **cylinder** given the **ratio** of its **base radius** to its **height** and the actual value of the radius.

Understanding Cylinder Properties

We are given information about a **cylinder**:

- The **ratio** of the base radius (r) to the height (h) is 5 : 2. This can be written as $\frac{r}{h} = \frac{5}{2}$.
- The actual base **radius** (r) is 35 cm.
- The value of pi (π) to be used is $\frac{22}{7}$.

Our goal is to find the **total surface area** of this cylinder.

Step 1: Calculating the Cylinder's Height

First, we need to determine the **height** (h) of the cylinder. We know the ratio $\frac{r}{h} = \frac{5}{2}$ and that $r = 35$ cm.

Substitute the known radius into the ratio equation:

$$\frac{35}{h} = \frac{5}{2}$$

To find h , we can cross-multiply:

$$5 \times h = 35 \times 2$$

$$5h = 70$$

Now, divide both sides by 5 to solve for h :

$$h = \frac{70}{5}$$

$$h = 14 \text{ cm}$$

So, the **height** of the cylinder is 14 cm.

Step 2: Formula for Total Surface Area

The formula for the **total surface area (TSA)** of a **cylinder** is given by:

$$TSA = 2\pi r(r + h)$$

This formula includes the area of the two circular bases ($2\pi r^2$) and the lateral surface area ($2\pi rh$).

Step 3: Calculating the Total Surface Area

Now, we substitute the values we have into the TSA formula:

- Radius (r) = 35 cm
- Height (h) = 14 cm
- Pi (π) = $\frac{22}{7}$

Plugging these into the formula:

$$TSA = 2 \times \frac{22}{7} \times 35 \times (35 + 14)$$

First, calculate the sum inside the parentheses:

$$35 + 14 = 49$$

Now, substitute this back into the equation:

$$TSA = 2 \times \frac{22}{7} \times 35 \times 49$$

We can simplify the calculation:

$$TSA = 2 \times 22 \times \left(\frac{35}{7}\right) \times 49$$

Since $\frac{35}{7} = 5$:

$$TSA = 2 \times 22 \times 5 \times 49$$

Multiply the numbers:

$$TSA = 44 \times 5 \times 49$$

$$TSA = 220 \times 49$$

Performing the final multiplication:

$$TSA = 10780$$

Conclusion

The calculated **total surface area** of the **cylinder** is 10780 cm², based on the given **radius**, the calculated **height**, and the specified value of π .

48. Answer: a

Explanation:

- **Question Analysis:** The problem asks us to compare the oil capacity (volume) of two tins: one with a square base and another with a circular base. We need to determine which tin holds more oil and the exact amount by which its capacity exceeds the other.

- **Key Information Provided:**

- Square Base Tin: Side length (s) = 16 cm, Height (h_{sq}) = 12 cm.
- Circular Base Tin: Radius (r) = 10 cm, Height (h_{circ}) = 10 cm.
- Value of Pi (π) to use: 3.14.

Calculating Square Base Tin Volume

The tin with the square base is essentially a cuboid. The volume of a cuboid is calculated by multiplying the area of its base by its height.

- **Base Area Calculation:** The base is a square with a side length (s) of 16 cm.

$$\text{Area}_{\text{square}} = s^2$$

$$\text{Area}_{\text{square}} = (16 \text{ cm})^2 = 256 \text{ cm}^2$$

- **Volume Calculation:** The height (h_{sq}) of this tin is 12 cm.

$$V_{\text{square tin}} = \text{Base Area} \times \text{Height}$$

$$V_{\text{square tin}} = 256 \text{ cm}^2 \times 12 \text{ cm}$$

$$V_{\text{square tin}} = 3072 \text{ cm}^3$$

So, the square base tin holds 3072 cubic centimeters of oil.

Calculating Circular Base Tin Volume

The tin with the circular base is a cylinder. The volume of a cylinder is calculated using the formula $\pi r^2 h$, where r is the radius and h is the height.

- **Volume Calculation:** We are given the radius (r) = 10 cm, height (h_{circ}) = 10 cm, and $\pi = 3.14$.

$$V_{\text{circular tin}} = \pi r^2 h_{\text{circ}}$$

$$V_{\text{circular tin}} = 3.14 \times (10 \text{ cm})^2 \times 10 \text{ cm}$$

$$V_{\text{circular tin}} = 3.14 \times 100 \text{ cm}^2 \times 10 \text{ cm}$$

$$V_{\text{circular tin}} = 3.14 \times 1000 \text{ cm}^3$$

$$V_{\text{circular tin}} = 3140 \text{ cm}^3$$

Therefore, the circular base tin holds 3140 cubic centimeters of oil.

Comparing Tin Volumes and Finding the Difference

Now, let's compare the volumes calculated:

- Volume of Square Base Tin: 3072 cm^3
- Volume of Circular Base Tin: 3140 cm^3

By comparing the values, 3140 cm^3 is greater than 3072 cm^3 . This means the **circular base tin** has more oil.

To find out how much more oil the circular tin holds, we calculate the difference:

- Difference = Volume of Circular Tin – Volume of Square Tin
- Difference = $3140 \text{ cm}^3 - 3072 \text{ cm}^3$
- Difference = 68 cm^3

Conclusion

The circular base tin holds more oil than the square base tin. The difference in volume is 68 cm^3 .

49. Answer: c

Explanation:

Finding the Value of (Mean + Median – Mode) for the Dataset

This problem requires us to calculate the **Mean**, **Median**, and **Mode** for the given set of numbers and then find the value of the expression **Mean + Median – Mode**.

The dataset provided is: 8, 3, 6, 2, 7, 5, 3, 8, 3.

Step 1: Ordering the Data

To easily find the Median and Mode, it's helpful to arrange the data in ascending order.

Ordered data: 2, 3, 3, 3, 5, 6, 7, 8, 8.

The total number of observations (n) is 9.

Step 2: Calculating the Mean

The **Mean** is the sum of all observations divided by the total number of observations.

Sum of observations = $2 + 3 + 3 + 3 + 5 + 6 + 7 + 8 + 8 = 45$

Number of observations (n) = 9

$$\text{Mean} = \frac{\sum \text{observations}}{n}$$

$$\text{Mean} = \frac{45}{9}$$

$$\text{Mean} = 5$$

Step 3: Determining the Median

The **Median** is the middle value in an ordered dataset. Since we have 9 observations (an odd number), the median is the $\frac{n+1}{2}$ th observation.

$$\text{Position of Median} = \frac{9+1}{2} = \frac{10}{2} = 5 \text{ th position.}$$

Looking at the ordered data (2, 3, 3, 3, 5, 6, 7, 8, 8), the 5th value is 5.

$$\text{Median} = 5$$

Step 4: Calculating the Mode

The **Mode** is the value that appears most frequently in the dataset.

Let's check the frequency of each number in the ordered data (2, 3, 3, 3, 5, 6, 7, 8, 8):

- 2 occurs 1 time
- 3 occurs 3 times
- 5 occurs 1 time
- 6 occurs 1 time
- 7 occurs 1 time
- 8 occurs 2 times

The number 3 appears most frequently (3 times).

Mode = 3

Step 5: Calculating Mean + Median – Mode

Now, we plug the calculated values into the given expression:

Expression = Mean + Median – Mode

Expression = 5 + 5 – 3

Expression = 10 – 3

Expression = 7

Conclusion

The value of (Mean + Median – Mode) for the data 8, 3, 6, 2, 7, 5, 3, 8, 3 is 7.

50. Answer: c

Explanation:

Analyzing the Marks Distribution Using Pie Chart Data

This problem involves calculating the difference in marks obtained in two subjects, Mathematics and Hindi, based on data presented in a pie chart. We are given the total marks scored and the central angles representing each subject's share of the total.

Understanding Pie Charts for Subject Marks

A pie chart represents the total marks (630) as a full circle (360 degrees). Each slice's angle indicates the proportion of marks obtained in that subject relative to the total marks. To find the marks for a subject, we use its central angle.

Calculating the Marks per Degree

First, let's determine the number of marks represented by each degree of the pie chart. This helps us convert angles directly into marks.

The formula is:

$$\text{Marks per Degree} = \frac{\text{Total Marks}}{360^\circ}$$

Substituting the given values:

$$\text{Marks per Degree} = \frac{630}{360^\circ}$$

We can simplify this fraction:

$$\text{Marks per Degree} = \frac{63}{36} = \frac{7}{4} \text{ marks/degree}$$

Finding the Difference Between Mathematics and Hindi Marks

The question asks for the difference between the marks obtained in Mathematics and Hindi. We can calculate this by finding the difference in their central angles and then converting that angular difference into marks.

- The central angle for Mathematics is 85° .
- The central angle for Hindi is 65° .

First, find the difference in the central angles:

$$\text{Difference in Angles} = \text{Angle}_{\text{Mathematics}} - \text{Angle}_{\text{Hindi}}$$

$$\text{Difference in Angles} = 85^\circ - 65^\circ = 20^\circ$$

Now, use the marks per degree calculated earlier to find the difference in marks:

$$\text{Difference in Marks} = \text{Marks per Degree} \times \text{Difference in Angles}$$

$$\text{Difference in Marks} = \frac{7}{4} \times 20^\circ$$

Calculate the result:

$$\text{Difference in Marks} = 7 \times \frac{20}{4}$$

$$\text{Difference in Marks} = 7 \times 5$$

$$\text{Difference in Marks} = 35$$

Final Answer

The student obtained **35** more marks in Mathematics than in Hindi.

51. Answer: c

Explanation:

NCF 2005 Aims for Upper Primary Mathematics

The National Curriculum Framework (NCF), 2005, provides guidelines for education in India, emphasizing a child-centric approach and meaningful learning. For mathematics teaching at the upper primary level, NCF, 2005, outlines several key objectives designed to build a strong foundation for students.

The framework stresses moving away from rote learning towards understanding concepts, developing reasoning skills, and fostering an appreciation for

mathematics. The goal is to make mathematics a living subject, connected to the child's experiences and relevant for future learning.

Developing Mathematical Thinking and Abstraction

One of the primary aims highlighted by NCF, 2005, for teaching mathematics in upper primary school is to **help students develop mathematical thinking**. This involves:

- Enhancing logical reasoning abilities.
- Improving problem-solving skills through systematic approaches.
- Encouraging children to explore patterns and make connections.
- Fostering the ability to think critically and creatively.

Crucially, NCF, 2005, emphasizes the importance of enabling students to **handle abstractions**. Mathematics inherently involves abstract concepts. At the upper primary stage, students begin to transition from concrete operations to more abstract ideas. This includes:

- Understanding and using variables (like ' x ' or ' y ').
- Generalizing patterns and rules (e.g., understanding the commutative property ' $a + b = b + a$ ' holds true for all numbers, not just specific examples).
- Working with symbolic representations and abstract structures.
- Developing the capacity to think conceptually rather than just algorithmically.

Developing these skills equips students with a powerful cognitive toolkit applicable beyond mathematics.

Analyzing Other Aims in Mathematics Teaching

Let's consider the other options in the context of NCF, 2005:

- **Helping students understand that mathematics is a difficult subject:** This is contrary to the NCF's philosophy, which aims to make learning accessible, engaging, and build confidence, rather than reinforcing notions of difficulty.
- **Inculcating discipline in the students:** While learning mathematics can contribute to developing discipline (like persistence in problem-solving), it is

not considered the *main* or primary aim of mathematics education itself according to NCF, 2005. The focus is more on cognitive and conceptual development.

- **Preparing students for professional occupations in future:** While mathematical proficiency is valuable for many careers, the specific aim at the upper primary level, as per NCF, 2005, is foundational conceptual understanding and thinking skills development, rather than direct vocational preparation. Preparation for specific occupations typically becomes more relevant at higher educational levels.

Conclusion on NCF Mathematics Goals

In summary, the National Curriculum Framework, 2005, strongly advocates for mathematics education that builds robust thinking skills and the ability to engage with abstract mathematical ideas. Developing mathematical thinking and the capacity to handle abstraction are central to achieving a deeper and more meaningful understanding of the subject at the upper primary stage.

52. Answer: d

Explanation:

A counter-example is a specific example that contradicts a general statement or hypothesis.

★ Key Points

- In mathematics, generalisations are often made based on a finite number of observations or examples.
- However, a counter-example is a specific instance where the **generalisation does not hold true**. It is a way to prove that a generalisation is false.
- For example, a conjecture might be made that "all prime numbers are odd".
- Counter-examples play an important role in mathematics as they help to identify false generalisations and refine conjectures.

- They are a key tool in the process of developing and testing mathematical theories.

Hence, it can be concluded that a specific instance that shows a mathematical generalisation to be false is a counter-example.

53. Answer: c

Explanation:

Mathematics is a subject that is based on logical reasoning and proof. Students should be encouraged to question and challenge statements and conjectures, and to seek evidence to support or refute them.

★ Key Points

- By initiating a discussion on this topic, the mathematics teacher is encouraging her students to think critically, explore the reasoning behind the statement, and evaluate its validity.
- Through this discussion, students will learn that in mathematics, there can be different points of view and different ways to approach a problem.
- They will also learn the importance of presenting logical arguments and providing evidence to support their claims.
- Overall, the aim of the mathematics teacher in initiating the discussion is to promote a culture of inquiry and critical thinking in her class and to help her students develop the skills and attitudes necessary for success in mathematics and other fields.

Hence, it can be concluded that option 3 is the correct answer.

54. Answer: b

Explanation:

Exploring Place Value: Helpful Teaching Aids

Place value is a core mathematical concept that explains how the position of a digit in a number determines its value. For example, in the number 234, the '2' represents 2 hundreds, the '3' represents 3 tens, and the '4' represents 4 ones. Building a solid understanding of place value is essential for children as they learn arithmetic operations. Several manipulative tools and methods can greatly assist in teaching this concept effectively.

Comparing Tools for Teaching Place Value

Let's examine the effectiveness of the different options provided for helping children understand place value:

- **Abacus:** The abacus is an excellent tool for teaching place value. It consists of rods representing different place values (like ones, tens, hundreds). Children can move beads on these rods to represent numbers. This provides a concrete, visual, and hands-on way to see how numbers are composed and how values change based on position. Sliding 10 beads from the ones place to the tens place visually reinforces the concept of regrouping ($10 \text{ ones} = 1 \text{ ten}$).
- **Dienes Blocks (Base-Ten Blocks):** These blocks are specifically designed to represent quantities based on place value. They typically include unit cubes (ones), rods (tens), flats (hundreds), and larger cubes (thousands). Children can physically build numbers using these blocks, seeing directly that 10 unit cubes make one ten rod, and 10 ten rods make one flat. This tangible representation makes the abstract concept of place value much easier to grasp.
- **Bundling of Match Sticks:** This is a simple, practical activity that effectively demonstrates the base-ten grouping principle. Children can take individual match sticks (representing ones), group them into bundles of ten (tens), and perhaps bundle ten of these tens together (hundreds). This process physically shows how items are grouped according to place value, making the transition from ones to tens and tens to hundreds intuitive.
- **Geogebra:** Geogebra is a dynamic mathematics software platform primarily used for geometry, algebra, and calculus. It excels at visualizing graphs,

geometric constructions, and exploring mathematical functions. While Geogebra can be used creatively to create number lines or interactive exercises, it is not specifically designed as a manipulative tool for teaching the foundational concept of place value, especially the concrete grouping and positional representation that aids young learners. Its focus is generally on more abstract or graphical mathematical concepts rather than the concrete manipulation essential for early place value understanding.

Identifying the Least Helpful Tool for Place Value

Based on the nature of these tools:

- The Abacus, Dienes Blocks, and Bundling of match sticks are all concrete or visual manipulative tools directly suited for teaching the principles of place value through grouping and positional representation.
- Geogebra, while a valuable educational tool, serves a different purpose in mathematics education, focusing more on visualization in higher-level concepts rather than the foundational building blocks of place value.

Therefore, Geogebra is the option that is NOT typically helpful in building the fundamental concept of place value in children compared to the other listed aids.

Your Personal Exams Guide

55. Answer: a

Explanation:

Evaluating Activities for an Elementary Mathematics Teacher's Professional Growth

This question asks us to identify the activity that is **least appropriate** for Abhishek, an **elementary school mathematics teacher**. Abhishek's focus is on understanding **alternate concepts**, children's **misconceptions** in mathematics, and exploring various **teaching strategies** for different topics.

Analyzing Abhishek's Professional Development Focus

Let's examine each option to see how well it aligns with Abhishek's stated goals:

- **Option 1: He is preparing for an upcoming school inspection**

While teachers need to prepare for inspections, this activity is primarily administrative. It focuses on meeting requirements and showcasing existing practices rather than directly enhancing deep understanding of mathematical concepts, identifying student misconceptions, or developing new pedagogical approaches. Therefore, it seems less aligned with his core professional development goals compared to other options.

- **Option 2: He is focusing on developing pedagogical-content-knowledge**

This option aligns perfectly with Abhishek's aims. **Pedagogical-Content Knowledge (PCK)** refers to the specialized knowledge teachers need to make subject matter understandable to students. It involves understanding how to represent concepts, knowing common student misconceptions, and choosing effective **teaching strategies**. Since Abhishek is studying alternate concepts and misconceptions, he is actively building his PCK.

- **Option 3: He is focusing on developing subject-matter knowledge**

Having strong **subject-matter knowledge (SMK)** is essential for any teacher. A deep understanding of the mathematics itself allows Abhishek to better grasp **alternate concepts** and anticipate potential student **misconceptions**. This directly supports his goal of understanding children's thinking in mathematics.

- **Option 4: He is focusing on learning new methods to solve textbook questions**

Learning new methods to solve problems contributes to both subject-matter knowledge and potentially pedagogical knowledge. Different methods can offer various ways to understand a concept, which can be valuable for teaching and addressing different student learning styles or difficulties. This supports his exploration of alternative concepts and strategies.

Conclusion: Identifying the Least Appropriate Activity

Abhishek's primary goal is professional growth focused on the teaching and understanding of mathematics, specifically addressing concepts and student difficulties. Activities aimed at deepening his knowledge of math content (SMK) and how to teach it effectively (PCK), including learning new methods, directly support this goal.

Preparing for a school inspection, while a necessary task, is not intrinsically linked to the specific pedagogical and conceptual development Abhishek is pursuing. It's an external requirement rather than a direct enhancement of his teaching expertise in the areas he is focusing on.

Therefore, preparing for an upcoming school inspection is the activity that is **least appropriate** given Abhishek's specific professional development interests.

56. Answer: d

Explanation:

Exploring Number Properties Through Classroom Magic

This question describes a classroom activity designed by a mathematics teacher for Class VII students. The activity involves a 2-digit number, reversing its digits, adding the original and reversed numbers, and then dividing the sum by 11. The core of the question asks for the primary educational purpose behind conducting this specific mathematical "magic trick".

Understanding the Mathematical Activity

Let's break down the mathematical process involved in the teacher's activity:

- **Step 1: Choose a 2-digit number.** Let's represent a 2-digit number using algebra. If the tens digit is ' a ' and the units digit is ' b ', the number can be written as $10a + b$. (For example, if the number is 42, then $a = 4$ and $b = 2$, so the number is $10 \times 4 + 2 = 42$).

- **Step 2: Reverse the digits.** The reversed number will have 'b' as the tens digit and 'a' as the units digit. This number can be written as $10b + a$. (For the example 42, the reversed number is 24, which is $10 \times 2 + 4$).
- **Step 3: Add the two numbers.** The sum is $(10a + b) + (10b + a)$.
- **Step 4: Simplify the sum.** Combining like terms, the sum is $10a + a + 10b + b = 11a + 11b$. We can factor out 11 to get $11(a + b)$.
- **Step 5: Divide the sum by 11.** Dividing the sum $11(a + b)$ by 11 gives us the result $\frac{11(a+b)}{11} = a + b$.

This calculation shows that the sum of any 2-digit number and its reverse is always divisible by 11, and the result is simply the sum of the digits of the original number.

Example Calculation

Let's take the 2-digit number 63.

- The number is 63. Here, $a = 6$ and $b = 3$.
- The reversed number is 36.
- The sum is $63 + 36 = 99$.
- Dividing the sum by 11: $\frac{99}{11} = 9$.
- Notice that the result, 9, is equal to the sum of the digits of the original number ($6 + 3 = 9$). This demonstrates the property explored in the activity.

Evaluating the Aims of the Activity

The question asks for the **most appropriate aim**. Let's analyze the given options:

- **Option 1: To provide some leisure time in the class**

While the activity might be enjoyable and break the routine, its primary purpose isn't solely leisure. Math activities usually have a learning objective.

- **Option 2: To make the lecture joyful**

Making the lecture joyful is a positive side effect. However, the joy stems from understanding the mathematical concept, not just the act itself. Therefore, this isn't the core pedagogical aim.

- Option 3: To engage students while she is busy

Engaging students is important, especially when the teacher has other tasks. But like leisure, engagement is a means, not the ultimate end. The activity is structured to teach something specific.

- Option 4: To let students explore various properties of numbers and patterns

This option directly addresses the mathematical nature of the activity. The "magic" is a result of a specific **property of numbers** (divisibility by 11) and reveals an underlying **pattern**. The activity encourages students to observe, question, and discover this mathematical rule, fostering an exploratory learning environment.

Conclusion on the Activity's Aim

The described activity is a classic example used in mathematics education to encourage students to discover number patterns and properties. By performing the steps and observing the consistent result (divisibility by 11), students learn about number theory in an engaging way. Therefore, the most fitting educational objective is to facilitate student exploration of these numerical properties and patterns.

Your Personal Exams Guide

57. Answer: d

Explanation:

Data Analysis: Developing Student Understanding

Effectively teaching **Data Analysis** involves choosing classroom strategies that actively engage students and build their comprehension through practical experience. The goal is to make the process of working with data understandable and manageable for students.

Evaluating Classroom Practices for Learning Data Analysis

Let's look at the provided options and see how well they serve as a strategy for developing student understanding in **Data Analysis** within a classroom setting:

- **Role Play:** This method can be useful for exploring specific scenarios, like how data might be collected in different situations or discussing the ethics of data usage. However, it doesn't directly involve the core steps of organizing, analyzing, and interpreting data, which are central to **Data Analysis**.
- **Tests and Quiz:** These are excellent tools for assessing what students already know or have learned. They measure understanding. But, as strategies for *developing* that understanding in the first place, they are less effective than methods that involve active participation and application during the learning phase.
- **Survey:** This is a highly practical and effective strategy for developing a student's understanding of **Data Analysis**. When students participate in creating and conducting a **Survey**, they engage directly with the data lifecycle:
 - Designing questions requires thinking about what data needs to be collected.
 - Collecting responses provides raw data.
 - Organizing the collected responses (e.g., into tables) is a key step in preparation for analysis.
 - Analyzing the organized data helps students identify patterns, calculate basic statistics (like counts or averages), and understand relationships within the data.
 - Interpreting the findings helps them draw conclusions based on the evidence, a core skill in **Data Analysis**.

This hands-on process makes the abstract concepts of **Data Analysis** more concrete and easier to grasp.

Why Survey is the Preferred Strategy

The most appropriate strategy for developing student understanding in **Data Analysis** among the choices is a **Survey** because it provides a real-world, step-by-

step application of data handling principles. Unlike tests or quizzes, which assess knowledge, or role-play, which simulates situations, conducting a **Survey** requires students to actively perform tasks fundamental to **Data Analysis**. This active involvement significantly deepens their practical understanding and skills.

58. Answer: c

Explanation:

Strategies for Addressing Mathematical Misconceptions

Misconceptions in mathematics arise when students develop incorrect ideas or faulty reasoning about **mathematical concepts**. Effectively helping students overcome these requires the **teacher** to understand the root cause of the misunderstanding. It's a common challenge faced by educators aiming for deep student learning.

Analyzing Teacher Approaches to Student Misconceptions

A teacher has several potential strategies to help **students** with their **misconceptions**. Let's examine the provided options:

- Option 1: By not interfering at all as children will learn eventually

This passive approach is unlikely to be effective. While some students might eventually self-correct, many **misconceptions** become deeply ingrained if not addressed. Waiting for students to learn eventually can lead to persistent errors and hinder their progress in **mathematical concepts**.

- Option 2: By demonstrating correct procedures followed by revision

While demonstrating correct procedures and providing opportunities for practice (revision) are important parts of teaching, they may not be sufficient on their own. If the teacher doesn't understand the specific nature of the

student's **misconception**, simply showing the right way might not help the student connect it to their faulty thinking.

- **Option 3: By observing their work and talking to them to know their understanding**

This strategy focuses on diagnosing the problem before prescribing a solution. A **teacher** who **observes their work** can see the steps the student took and identify patterns of errors. Crucially, **talking to them** allows the teacher to ask probing questions, encouraging students to articulate their thought process. This dialogue helps reveal the student's **understanding** and the specific point where the **misconception** occurs. This allows for targeted intervention and correction.

- **Option 4: By suggesting some good books for practice**

Providing practice resources like books can supplement learning, but it's not a primary method for addressing **misconceptions**. Practice reinforces existing understanding (or misunderstanding). Without identifying the specific error through observation or dialogue, additional practice might not resolve the core issue.

The Value of Diagnostic Teaching

The most effective way for a **teacher** to help **students** with **mathematical misconceptions** is through diagnostic teaching. This involves:

- **Observation:** Carefully reviewing student work (e.g., calculations, written explanations) to identify errors and the methods used.
- **Communication:** Engaging students in conversation to understand their reasoning. Asking questions like, "How did you arrive at this answer?" or "Can you explain your thinking here?" is key.

By combining these methods, the **teacher** gains insight into the student's current level of **understanding** and can then provide tailored explanations or activities to correct the specific **misconception**, ensuring a firmer grasp of the underlying **mathematical concepts**.

59. Answer: d

Explanation:

Understanding Formative Assessment in Mathematics

Formative assessment is a crucial part of the learning process in mathematics. Its main goal is to monitor student learning and provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning. It's about checking understanding during the learning journey, not just at the end.

Analyzing Assessment Methods

Let's look at how different methods align with the goals of formative assessment:

- **Analysis of Errors:** Examining mistakes students make in math problems is a powerful formative tool. It helps teachers understand specific areas where students are struggling (like with fractions, algebra, or geometry concepts) and allows teachers to provide targeted instruction or reteaching. This directly supports improving learning *during* the course.
- **Classwork and Homework:** Regularly assigned classwork and homework provide excellent opportunities for formative assessment. Teachers can review student work to gauge understanding of recently taught mathematical concepts, identify common errors, and adjust future lessons accordingly. This continuous feedback loop is central to formative assessment.
- **Projects and Portfolios:** Projects allow students to apply mathematical concepts in different contexts, and portfolios collect student work over time. Both can be used formatively. Teachers can provide feedback on drafts of projects or review portfolio entries to track progress and understanding, guiding students as they develop their skills.
- **Term-End Examinations:** These are typically designed to evaluate student achievement at the end of a specific instructional period (like a term or semester). They measure what has already been learned. This type of

assessment is known as **summative assessment**, as its primary purpose is to sum up or evaluate the learning that has occurred, rather than to guide or improve learning during the process.

Why Term-End Examinations Aren't Formative

Term-end examinations, by their nature, happen after the learning period is mostly complete. While the results can inform future curriculum design, they don't provide the immediate feedback needed to adjust teaching strategies or help students correct misunderstandings *during* the learning process. Formative assessment is about learning **in** action, whereas term-end exams are about evaluating learning **after** action.

Therefore, formative assessment in mathematics cannot typically be done through term-end examinations because they serve a summative purpose.

60. Answer: a

Explanation:

Evaluating Mathematics Achievement in Ikaya's Class

This question focuses on a situation faced by Ikaya, an elementary school mathematics teacher. She observes that **girls' achievement** in her mathematics class has consistently been **better than boys' achievement** throughout the year. The core issue is identifying the most effective and responsible course of action for the teacher in response to this observed performance difference between genders.

Analyzing Teacher Responses to Performance Gaps

Effective teaching involves understanding and addressing disparities in student performance. Let's examine the options presented:

- **Option 1: Reflect upon her classroom practices and the participation of students in her mathematics class.**

This approach encourages the teacher to critically examine her teaching methods, lesson delivery, assessment techniques, and how students, both boys and girls, are engaged and participating. Investigating **classroom practices** and **student participation** can reveal factors contributing to the achievement gap, allowing for targeted improvements.

- **Option 2: Be satisfied with the achievements of the two groups in her class.**

This option suggests complacency. Ignoring a performance difference, even if one group is performing well, is not ideal. A teacher's role is to ensure all students reach their potential. Satisfaction without investigation might mean overlooking potential issues affecting the boys' performance or missed opportunities to further challenge the girls.

- **Option 3: Not bother as it is the natural talent of girls to be good at mathematics than boys.**

This option relies on harmful gender stereotypes. Attributing mathematical ability to innate gender talent is unscientific and goes against modern educational principles that emphasize creating equitable learning environments for all students. Teaching effectiveness should not be dismissed based on such stereotypes.

- **Option 4: Make the boys in her class practice more questions.**

While extra practice can be beneficial, this option offers a simplistic solution. It assumes the performance gap is solely due to the boys needing more practice, without exploring potential reasons related to teaching methods, classroom environment, student engagement, or other factors that might influence learning. A deeper analysis is needed before implementing specific interventions like increased practice.

Identifying Best Practices for Teachers

A key principle in teaching is continuous improvement and ensuring equitable learning opportunities. When a teacher observes differences in **achievement** between groups of students, the most professional and effective first step is self-reflection and analysis of their own teaching.

Ikaya should consider questions such as:

- Are the teaching methods equally accessible and engaging for both boys and girls?
- Are there differences in how boys and girls participate in class discussions or activities?
- Are the learning materials and examples used relevant and inclusive?
- Are the assessment methods accurately reflecting the knowledge and skills of all students?

By reflecting on these aspects of her **classroom practices** and monitoring **student participation**, Ikaya can better understand the root causes of the performance difference and implement strategies to support the learning of all her students, ensuring both boys and girls have the opportunity to excel in mathematics.

61. Answer: c

Explanation:

Analyzing Motion Concepts: Distance, Displacement, Speed, Velocity, and Acceleration

This explanation breaks down the core concepts of motion in physics, specifically distance, displacement, speed, velocity, and acceleration, to determine the correctness of the given statements.

Understanding Key Terms in Kinematics

Before evaluating the statements, let's clarify the definitions:

- **Distance:** The total length of the path traveled by an object. It's a scalar quantity (magnitude only) and is always non-negative.
- **Displacement:** The shortest straight-line distance between the initial and final positions of an object, along with its direction. It's a vector quantity (magnitude and direction). Mathematically, displacement is represented as $\Delta \vec{x} = \vec{x}_{final} - \vec{x}_{initial}$.
- **Speed:** The rate at which an object covers distance. It's the magnitude of velocity and is a scalar quantity. Average speed = Total Distance / Total Time.
- **Velocity:** The rate at which an object changes its displacement. It's a vector quantity. Average velocity = Total Displacement / Total Time ($\vec{v}_{avg} = \Delta \vec{x} / \Delta t$).
- **Acceleration:** The rate at which an object's velocity changes. It's a vector quantity. Average acceleration ($\vec{a}_{avg} = \Delta \vec{v} / \Delta t$).

Evaluating Statement (A): Zero Distance, Non-zero Displacement

Statement (A) claims a body can have zero distance but non-zero displacement.

- If the **distance** covered is zero, it implies the object has not moved at all.
- If an object hasn't moved, its initial position is the same as its final position.
- This means the **displacement** ($\vec{x}_{final} - \vec{x}_{initial}$) must also be zero.
- Therefore, it's impossible for an object to have zero distance and simultaneously have a non-zero displacement.

Statement (A) is **incorrect**.

Evaluating Statement (B): Zero Speed, Non-zero Velocity

Statement (B) suggests a body can have zero speed but non-zero velocity.

- **Speed** is the magnitude of **velocity**.
- If the speed is zero, it means the magnitude of the velocity vector is zero.
- A vector with zero magnitude is the zero vector, meaning the velocity itself is zero.
- Hence, zero speed implies zero velocity. They cannot be zero and non-zero, respectively, at the same time.

Statement (B) is **incorrect**.

Evaluating Statement (C): Zero Velocity, Non-zero Acceleration

Statement (C) proposes that a body can have zero velocity but non-zero acceleration.

- Consider an object thrown vertically upwards. At the very peak of its trajectory, just before it starts falling down, its instantaneous velocity is zero.
- However, the acceleration due to gravity (g) is still acting on the object throughout its motion, directed downwards.
- So, at the highest point, velocity is zero ($\vec{v} = 0$), but acceleration is non-zero ($\vec{a} = -g\hat{j}$, assuming upward is positive y -direction).

Statement (C) is **correct**.

Evaluating Statement (D): Zero Displacement, Non-zero Velocity

Statement (D) posits that a body can have zero displacement but non-zero velocity.

- **Zero displacement** means the object's final position is the same as its initial position. This happens, for example, if the object completes a closed path.
- During the motion along this closed path, the object might have been moving with a non-zero **velocity**.
- Example: An object moving in a perfect circle. After completing one full revolution, it returns to its starting point, making its net displacement zero. However, throughout the circular motion, it had a non-zero velocity (constantly changing direction, but magnitude, speed, was non-zero).

Statement (D) is **correct**.

Conclusion on Correct Statements

Based on the analysis, statements (C) and (D) accurately describe possible physical scenarios in motion.

- Statement (C) is correct: An object can momentarily have zero velocity while experiencing acceleration (e.g., at the peak of vertical projectile motion).

- Statement (D) is correct: An object can return to its starting point (zero displacement) after undergoing motion where it had non-zero velocity (e.g., completing a circular path).

62. Answer: a

Explanation:

Water Boiling Point Explained

Pure water has specific properties at standard conditions, known as normal temperature and pressure. Typically, pure water boils at 100°C and freezes at 0°C .

The question describes a sample of water that boils at 102°C under these same conditions. This observed boiling point is higher than that of pure water (100°C).

Boiling Point Elevation in Water Solutions

The elevation of the boiling point is a physical phenomenon that occurs when a solute is dissolved in a solvent. In this case, the water sample boiling at 102°C suggests it is not pure water. It likely contains dissolved substances (solutes).

The presence of these dissolved solutes disrupts the solvent's (water's) ability to transition into the gaseous phase (steam). This means more energy (a higher temperature) is required to reach the boiling point. This increase in boiling point due to dissolved solutes is termed **boiling point elevation**.

Freezing Point Depression Principle

Boiling point elevation and **freezing point depression** are related concepts known as colligative properties. Colligative properties depend on the concentration of solute particles, not their identity.

Just as solutes raise the boiling point, they also lower the freezing point of the solvent. This is called **freezing point depression**. The dissolved solute particles

interfere with the formation of the organized crystal lattice structure characteristic of the solid solvent (ice). Consequently, a lower temperature is needed for the solution to freeze compared to the pure solvent.

Analyzing the Water Sample's Freezing Point

Based on the principles of colligative properties:

- The water sample boils at 102°C , which is higher than pure water's boiling point (100°C).
- This indicates the presence of dissolved solutes in the sample.
- Due to the presence of these solutes, the freezing point of the water sample will be depressed.
- The normal freezing point of pure water is 0°C .
- Therefore, the freezing point of this specific water sample must be lower than 0°C .

Conclusion on Water Freezing Point

The fact that the water sample boils at a temperature above 100°C directly implies that it contains dissolved impurities. These impurities lower the freezing point below the normal 0°C .

Your Personal Exams Guide

63. Answer: b

Explanation:

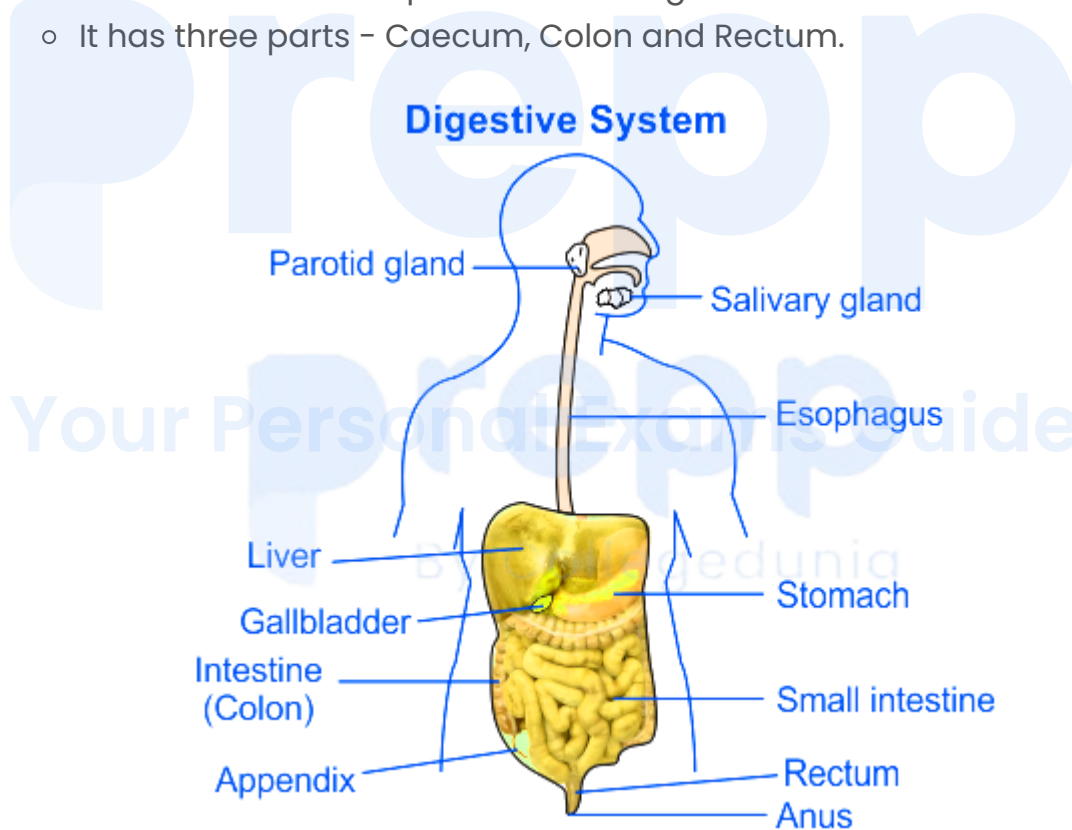
Concept:

- The **human alimentary canal** consists of various organs and glands for the purpose of digestion and uptake of nutrition.

Parts of Alimentary Canal (in order) -

- Mouth -

- It is the part where the food is ingested.
- The buccal cavity of mouth consists of the tongue and the teeth.
- **Oesophagus -**
 - It is also known as the food pipe.
 - It is a muscular tube through which the food passes from the mouth to the stomach.
- **Stomach -**
 - Stomach is the J shaped muscular bag which is located at the upper left part of the abdominal cavity.
- **Small intestine -**
 - It is the longest part of the alimentary, that can be divided into three parts - Duodenum, Jejunum and Ileum.
- **Large Intestine -**
 - The small intestine opens into the large intestine.
 - It has three parts - Caecum, Colon and Rectum.



★ Important Points

Stomach -

- The stomach **receives the food from the oesophagus** and **passes it on to the small intestine**.
- The muscular walls of the stomach secrete:
 - **Pepsin** – protein-digesting enzyme
 - **Hydrochloric acid (HCl)** – that makes the medium acidic
 - **Mucus** – that protects the inner lining of the stomach from HCl.
- This **HCl** serves two major **functions**:
 - **Killing any bacteria or other pathogens** that might have been ingested with the food.
 - Maintaining the acidic pH of the stomach for **activation of pepsinogen into pepsin**.

Therefore, we can identify the given blanks as:

- (i) – stomach
- (ii) – food pipe
- (iii) – small intestine
- (iv) – hydrochloric acid

Hence, the correct answer is option 2.

64. Answer: a

Explanation:

Calculating Average Speed for the Entire Cycling Trip

This solution explains how to calculate the **average speed** for a round trip, considering different speeds for each leg of the journey. We will break down the problem into calculating the time taken for each part of the trip and then use the total distance and total time to find the average speed.

Understanding Average Speed

Average speed is defined as the total distance traveled divided by the total time taken to travel that distance. It's important to note that the average speed is NOT simply the average of the two speeds, especially when the time spent traveling at each speed is different.

The formula is:

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

Given Information

Let's list the details provided in the question:

- Distance to the bank (one way): $d = 5 \text{ km}$
- Speed going to the bank: $v_1 = 20 \text{ km/h}$
- Speed returning from the bank: $v_2 = 30 \text{ km/h}$

Step-by-Step Calculation

1. Calculate Time Taken for Each Part of the Trip

We use the formula: $\text{Time} = \frac{\text{Distance}}{\text{Speed}}$

- Time to the bank (t_1):

$$t_1 = \frac{d}{v_1} = \frac{5 \text{ km}}{20 \text{ km/h}} = \frac{1}{4} \text{ h}$$

- Time for the return trip (t_2):

$$t_2 = \frac{d}{v_2} = \frac{5 \text{ km}}{30 \text{ km/h}} = \frac{1}{6} \text{ h}$$

2. Calculate Total Distance

The total distance is the distance to the bank plus the distance returning home.

$$\text{Total Distance} = d + d = 5 \text{ km} + 5 \text{ km} = 10 \text{ km}$$

3. Calculate Total Time

The total time is the sum of the time taken for each part of the trip.

$$\text{Total Time} = t_1 + t_2$$

To add the times, we find a common denominator:

$$\text{Total Time} = \frac{1}{4} \text{ h} + \frac{1}{6} \text{ h} = \frac{3}{12} \text{ h} + \frac{2}{12} \text{ h} = \frac{5}{12} \text{ h}$$

4. Calculate Average Speed

Now, we use the total distance and total time in the average speed formula:

$$\text{Average Speed} = \frac{\text{Total Distance}}{\text{Total Time}} = \frac{10 \text{ km}}{\frac{5}{12} \text{ h}}$$

To divide by a fraction, we multiply by its reciprocal:

$$\text{Average Speed} = 10 \text{ km} \times \frac{12}{5 \text{ h}} = \frac{10 \times 12}{5} \text{ km/h}$$

$$\text{Average Speed} = \frac{120}{5} \text{ km/h} = 24 \text{ km/h}$$

Summary of Calculation

The calculation shows that the average speed for the entire trip is 24 km/h.

Component	Distance (km)	Speed (km/h)	Time (h)
To the bank	5	20	$\frac{1}{4}$
Return trip	5	30	$\frac{1}{6}$
Total	10	–	$\frac{5}{12}$

$$\text{Average Speed} = \frac{10}{\frac{5}{12}} = 24 \text{ km/h.}$$

Conclusion

The average speed for the entire trip, considering the different speeds for going to the bank and returning, is 24 km/h. This is the harmonic mean of the two speeds when the distances are equal.

65. Answer: d

Explanation:

Understanding Key Agricultural Processes

Farming involves several important steps performed in a specific order to grow crops successfully. Let's look at the common sequence:

- **Tilling (or Ploughing):** This is the first step where the soil is prepared by loosening it. This makes it ready for seeds to be planted.
- **Sowing:** After tilling, seeds are planted into the prepared soil.
- **Harvesting:** This is when the mature crops are cut and collected from the field.
- **Threshing:** Once harvested, the crop stalks (straw) are beaten or processed to separate the grains from the straw.
- **Winnowing:** This step follows threshing. It's a method used to separate the lighter grain from the heavier grain or chaff, often using wind or a fan.

Analyzing Statements on Agricultural Processes Sequence

Let's examine each statement provided in the options to determine its accuracy based on the standard agricultural workflow:

- **Statement 1: Winnowing is done before harvesting**

This statement is incorrect. Harvesting is the process of collecting the mature crop, while winnowing is done later to separate the grain from the chaff after the crop has been harvested and threshed.

- **Statement 2: Sowing is done before tilling**

This statement is incorrect. Tilling the soil is essential to prepare the seedbed *before* sowing the seeds. Sowing happens after tilling.

- **Statement 3: Tilling is done after threshing**

This statement is incorrect. Tilling is one of the very first steps in crop cultivation, done to prepare the soil for sowing. Threshing occurs much later, after harvesting.

- **Statement 4: Threshing is done after harvesting**

This statement is correct. After the crops are harvested (cut and gathered), the next crucial step is threshing, which involves separating the valuable grain from the non-edible parts like straw and husks.

Identifying the Correct Agricultural Process Order

Based on the analysis of each statement and the standard sequence of agricultural activities, the only correct statement is that threshing follows harvesting. This process is vital for obtaining the grain ready for storage or further processing.

Therefore, the correct statement highlights the proper sequence: **Threshing is done after harvesting.**

Your Personal Exams Guide

66. Answer: b

Explanation:

This solution analyzes the provided weather data to identify the Indian city described.

Weather Data Analysis for Indian City Identification

The question provides monthly weather data, including maximum temperature, minimum temperature, and precipitation, for an unnamed Indian city. We need to

determine which of the given options (Chennai, Jodhpur, Kochi, Shimla) best matches this climatic data.

Weather Observations

Let's examine the key features of the provided data:

- **Temperature Trend:** Temperatures rise significantly from January to May, reaching a peak in May (Max Temp: 40.3°C, Min Temp: 27°C). Temperatures then slightly decrease in June and July but remain high (Max Temp around 34–38°C). This indicates a location experiencing very hot summers.
- **Precipitation Pattern:** Rainfall is minimal in the early months (Jan–Apr), with values like 3mm, 5mm, 2mm, 3mm. There's a noticeable increase starting in June (12mm) and July (22mm). This suggests the onset of a rainy season during the summer/monsoon period.

Table of Weather Data

Month	Jan	Feb	Mar	Apr	May	June	July
Max Temp (°C)	23.7	27.1	32.9	38.2	40.3	38.6	34.4
Min Temp (°C)	9.6	12.4	17.6	23	27	28	26.5
Precipitation (mm)	3	5	2	3	5	12	22

Evaluating City Climates Against Data

We will now compare the observed weather pattern with the typical climates of the cities listed in the options:

Chennai Climate Profile

- Chennai, located on the southeast coast, has hot summers. However, its peak temperatures might not consistently reach the highs shown in May.

- It receives rainfall primarily from the Northeast Monsoon (October–December). While the Southwest Monsoon affects it, the rainfall pattern here (low Jan–May, increasing June–July) doesn't perfectly align with Chennai's typical rainfall distribution.

Jodhpur Climate Profile

- Jodhpur is situated in the Thar Desert region of Rajasthan. It is known for its extremely hot summers, with temperatures frequently crossing 40°C, especially in May and June.
- The winter months are cooler.
- Precipitation is generally very low, characteristic of a desert climate. The monsoon season, typically starting later in the summer (July onwards), brings the majority of the annual rainfall.
- The data's high peak temperatures in May (40.3°C) and the low rainfall from January to May, followed by an increase in June and July, strongly matches Jodhpur's climate characteristics.

Kochi Climate Profile

- Kochi, on the southwest coast, experiences hot and humid weather.
- It receives substantial rainfall from the Southwest Monsoon, starting around May or June. The rainfall amounts during the monsoon months are typically much higher than the 12mm and 22mm shown for June and July.
- The peak temperatures might also be slightly lower than the 40.3°C recorded in the data.

Shimla Climate Profile

- Shimla is a hill station in the Himalayas. Its climate is significantly cooler than the plains.
- Maximum temperatures even in summer (May/June) usually stay in the mid-20s°C.
- Winters are cold with snowfall. The high temperatures and precipitation patterns in the data are entirely inconsistent with Shimla's climate.

Conclusion on City Match

Based on the analysis, the combination of extremely high summer temperatures peaking in May and a low initial rainfall that increases in the later summer months (June–July) is most characteristic of **Jodhpur**.

67. Answer: c

Explanation:

The question asks to identify the statement that is NOT correct regarding the properties of metals.

Analyzing Metal Properties Statements

Let's examine each statement to determine its accuracy:

- **Statement 1: Metals react with acids to produce metal salts and hydrogen gas.**

This statement is generally true for many reactive metals. When a reactive metal comes into contact with an acid, it typically displaces hydrogen from the acid, forming a metal salt and releasing hydrogen gas. For instance, the reaction between zinc and hydrochloric acid is:



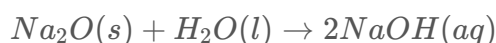
This confirms that this statement is correct.

- **Statement 2: Generally, metals are good conductors of heat and electricity.**

This is a fundamental characteristic property of metals. The presence of free electrons in their metallic structure allows metals to efficiently conduct heat and electricity. This statement is correct.

- **Statement 3: Metallic oxides are acidic in nature.**

This statement claims that oxides formed by metals are acidic. However, the opposite is generally true. Most metallic oxides are **basic** in nature. They react with acids to form salt and water, and some react with water to form metal hydroxides (bases). For example, sodium oxide reacts with water:



While some metallic oxides, like those of zinc (ZnO) and aluminum (Al_2O_3), exhibit amphoteric behavior (reacting with both acids and bases), and a very few might be neutral, the generalization that metallic oxides are acidic is incorrect. Oxides of non-metals are typically acidic. Therefore, this statement is NOT correct.

- **Statement 4: Some metals react with water to produce metal hydroxides and hydrogen gas.**

This statement is also correct. Highly reactive metals, like alkali metals (e.g., sodium, potassium) and some alkaline earth metals (e.g., calcium), react with water. The reaction produces the corresponding metal hydroxide and hydrogen gas. For example, the reaction of sodium with water is:



This confirms the correctness of this statement.

Identifying the Incorrect Statement

Based on the analysis of each statement, the statement that is NOT correct is the one claiming that metallic oxides are acidic in nature. Most metallic oxides exhibit basic properties.

Conclusion on Metal Oxide Nature

The fundamental chemical nature of most **metallic oxides** is basic. They react with water to form bases or react with acids to neutralize them. The incorrect statement describes them as acidic, which contradicts their typical chemical behavior.

68. Answer: c

Explanation:

Analyzing the Frog Life Cycle and Hormone Regulation

The question asks us to correctly fill in the blanks in a sentence about a biological process in frogs. The sentence is: "The process of _____ (i) in frogs is controlled by the hormone _____ (ii) whose production requires the presence of _____ (iii) in water." We need to identify the correct biological terms for each blank.

Understanding Blank (i): The Frog's Developmental Process

Frogs undergo a significant change in their life cycle. They start as aquatic larvae (tadpoles) with gills and tails, and eventually transform into adult frogs that are often terrestrial or semi-aquatic, with lungs and legs. This complex transformation process is known as **metamorphosis**. Fertilisation is the initial fusion of sperm and egg, which is not the process of change described.

Understanding Blank (ii): The Hormone Governing Transformation

The biological process of **metamorphosis** in amphibians, including frogs, is regulated by hormones. The primary hormone responsible for driving these developmental changes is **thyroxine**. This hormone is produced by the thyroid gland and triggers key events like tail regression, limb development, and changes in skin and lungs. Hormones like insulin regulate blood sugar, and adrenalin is involved in stress responses, neither of which directly controls **metamorphosis**.

Understanding Blank (iii): Essential Nutrient for Hormone Production

The production of the hormone **thyroxine** requires specific components. **Thyroxine** is an iodine-containing hormone. Therefore, the presence of **iodine** in the frog's aquatic environment is crucial for the thyroid gland to synthesize sufficient amounts of **thyroxine**. Without adequate **iodine**, the frog cannot properly complete

metamorphosis. While oxygen is necessary for respiration and nitrogen is an element, they are not the specific required elements for **thyroxine** synthesis in this context.

Evaluating the Options

Let's examine the given options based on our understanding:

Option	Blank (i)	Blank (ii)	Blank (iii)	Correct?
1	fertilisation	adrenalin	oxygen	No
2	fertilisation	insulin	chlorine	No
3	metamorphosis	thyroxine	iodine	Yes
4	metamorphosis	adrenalin	nitrogen	No

Statement-wise Analysis:

- **Option 1 Analysis:** Incorrect. It suggests 'fertilisation' for (i) and 'adrenalin' for (ii), which are wrong. 'Oxygen' for (iii) is also incorrect as **iodine** is needed.
- **Option 2 Analysis:** Incorrect. 'Fertilisation' for (i), 'insulin' for (ii), and 'chlorine' for (iii) are all biologically inaccurate for this context.
- **Option 3 Analysis:** Correct. It correctly identifies (i) as **metamorphosis**, (ii) as the controlling hormone **thyroxine**, and (iii) as the essential element **iodine** required for hormone production.
- **Option 4 Analysis:** Incorrect. While (i) 'metamorphosis' is correct, (ii) 'adrenalin' is the wrong hormone, and (iii) 'nitrogen' is the wrong element.

Final Conclusion on Frog Development

The sentence accurately describes the biological process of **metamorphosis** in frogs. This process is stimulated and controlled by the hormone **thyroxine**, which is synthesized by the thyroid gland. The production of **thyroxine** critically depends on the availability of **iodine**, which the tadpoles obtain from their aquatic environment.

69. Answer: c

Explanation:

Understanding Basic Substances

This solution explains how to identify sets of substances that are **basic in nature**. Basic substances, also known as alkaline substances, typically have a pH greater than 7. They can neutralize acids. We will analyze each option to determine which one contains only basic substances.

Analysis of Option 1

- **Toothpaste:** Generally formulated to be **basic**. It often contains ingredients like sodium bicarbonate to help neutralize acids in the mouth and prevent tooth decay.
- **Shampoo:** Typically has a slightly **basic** pH (around 7.5–8.0) to help cleanse hair effectively by removing oils and dirt.
- **Baking soda (Sodium Bicarbonate, NaHCO_3):** This is a well-known **basic** compound.
- **Vinegar:** Contains acetic acid (CH_3COOH), which makes it **acidic**.

Since vinegar is acidic, Option 1 is not a set of purely basic substances.

Analysis of Option 2

- **Window cleaner:** Often contains ammonia (NH_3) or other alkaline cleaning agents, making it **basic**.
- **Curd:** Contains lactic acid, making it **acidic**.
- **Milk of Magnesia (Magnesium Hydroxide, Mg(OH)_2):** This is an antacid and is inherently **basic**.
- **Lemon juice:** Contains citric acid, making it **acidic**.

Option 2 is incorrect because both curd and lemon juice are acidic.

Analysis of Option 3

- **Calamine lotion:** Contains zinc oxide (ZnO), which is a **basic** oxide. It's used to soothe skin irritation.
- **Shampoo:** As mentioned earlier, shampoos are usually slightly **basic**.
- **Toothpaste:** Also typically **basic**.
- **Window cleaner:** Generally contains alkaline ingredients, hence **basic**.

All the substances listed in Option 3 are commonly known to be **basic in nature**.

Analysis of Option 4

- **Milk of Magnesia:** This is **basic**.
- **Alcohol (e.g., Ethanol, $\text{C}_2\text{H}_5\text{OH}$):** Generally considered neutral, although it can react slightly differently depending on the context. It is not typically classified as basic.
- **Lemon juice:** Contains citric acid and is **acidic**.
- **Slaked lime (Calcium Hydroxide, Ca(OH)_2):** This is a strong **base**.

Option 4 is incorrect because lemon juice is acidic and alcohol is neutral.

Conclusion on Basic Substances

Based on the analysis, the only option where all listed substances are **basic in nature** is Option 3, containing Calamine lotion, Shampoo, toothpaste, and window cleaner.

70. Answer: d

Explanation:

Understanding Assertion and Reason on Solid Volume Change

This solution explains the truthfulness of the given Assertion (A) and Reason (R) concerning the changes in volume when solids melt.

Analyzing Assertion (A): Volume Change on Melting

Assertion (A) states that the **volume of all solids increases on melting**. Let's examine this statement:

- When most substances melt (transition from solid to liquid state), their particles (atoms or molecules) move further apart, leading to an increase in volume. For example, iron expands when it melts.
- However, there are exceptions. Water is a key example: ice (solid water) is less dense than liquid water. This means that a certain mass of ice occupies more volume than the same mass of liquid water. Therefore, the volume of water **decreases** on melting.
- Since the assertion claims this happens for **all** solids, and we have a counterexample (water), **Assertion (A) is false**.

Analyzing Reason (R): Atomic Size Increase on Melting

Reason (R) suggests that the **size of the atoms** comprising the solids **increases** when they melt.

- Melting is a phase transition. While the arrangement and average distance between atoms or molecules change, the fundamental size of the individual atoms or molecules themselves does not typically increase during melting. Atoms are defined by their electron shells, and these don't expand simply because the substance melts.
- The change in volume observed during melting is due to changes in the packing efficiency and intermolecular spacing, not a change in the intrinsic size of the atoms.
- Therefore, **Reason (R) is false**.

Conclusion on Assertion (A) and Reason (R)

Based on the analysis:

- Assertion (A) is false because not all solids increase in volume upon melting (e.g., water).
- Reason (R) is false because the size of atoms does not increase when a solid melts.

Thus, the correct option is the one stating that both Assertion (A) and Reason (R) are false.

Correct Option Identification

Evaluating the given options:

- Option 1: Both (A) and (R) are true and (R) is the correct explanation of (A). (Incorrect)
- Option 2: Both (A) and (R) are true but (R) is not the correct explanation of (A). (Incorrect)
- Option 3: (A) is true but (R) is false. (Incorrect)
- Option 4: Both (A) and (R) are false. (**Correct**)

The analysis confirms that both the assertion and the reason provided are factually incorrect statements about the physical process of melting.

71. Answer: b

Explanation:

Understanding Mixture Separation: Matching Columns

This question requires matching different types of mixtures with the appropriate physical methods used to separate their components. We need to correctly pair each mixture listed in Column I with its suitable separation technique from Column II. Let's break down each pair.

Separating Naphthalene and Salt Mixture

Mixture (A) contains powdered naphthalene balls and salt. Naphthalene has a special property called ****sublimation****. This means it can change directly from a solid state to a gaseous state when heated, and then back to a solid state when cooled, skipping the liquid phase. Salt, however, does not sublime under similar conditions. To separate naphthalene from salt, we can gently heat the mixture. The naphthalene will turn into vapor (gas), leaving the solid salt behind. This naphthalene vapor can then be collected and cooled, causing it to solidify again. This process is known as **Sublimation (III)**.

Separating Sugar and Water Mixture

Mixture (B) consists of sugar dissolved in water, which forms a homogeneous solution. To separate the solid sugar from the water, a method called ****crystallisation**** can be employed. In this technique, the water (solvent) is evaporated until the solution becomes saturated with sugar (solute). Upon cooling the saturated solution slowly, the sugar begins to form solid crystals, which are purer than the original dissolved sugar. These crystals can then be collected, for example, by filtration. Therefore, the appropriate method is **Crystallisation (I)**.

Separating Vegetable Oil and Water Mixture

Mixture (C) involves vegetable oil and water. These two liquids are ****immiscible****, meaning they do not mix to form a single phase. Instead, they form distinct layers, with the less dense liquid (vegetable oil) floating on top of the denser liquid (water). The most effective way to separate such immiscible liquids is by using a ****separating funnel****. This laboratory equipment allows us to drain the lower layer (water) out first through a tap at the bottom. Once the water is removed, the tap is closed, leaving the oil behind. The correct method is thus **Pouring through separating funnel (IV)**.

Separating Salt and Water Mixture

Mixture (D) is salt dissolved in water, forming another homogeneous solution. Similar to separating sugar from water, we can separate salt from water using ****evaporation****. When the saltwater mixture is heated, the water turns into steam

(water vapor) and escapes, leaving the non-volatile salt behind as a solid residue. This method effectively separates the dissolved solid from the liquid solvent. Therefore, the applicable method is **Evaporation (II)**.

Summary of Mixture Separation Matches

Based on the analysis of each mixture and the properties of its components, the correct pairings between Column I and Column II are as follows:

Mixture (Column I)	Separation Method (Column II)
(A) Powdered naphthalene balls and salt	(III) Sublimation
(B) Sugar and water	(I) Crystallisation
(C) Vegetable oil and water	(IV) Pouring through separating funnel
(D) Salt and water	(II) Evaporation

This leads to the final matching: (A) – (iii), (B) – (i), (C) – (iv), (D) – (ii).

72. Answer: c

Explanation:

Weight Analysis in Fluids

The problem provides the weight of an object in air and its apparent weights when submerged in two different liquids, labeled A and B. We need to analyze the given information to determine the validity of statements concerning the densities of these liquids, the buoyant forces acting on the object, and the conditions under which the object would float.

Buoyant Force Principles

When an object is immersed in a fluid, it experiences an upward force known as the **buoyant force**. This force arises due to the pressure difference in the fluid at different depths. The apparent weight of the object in the fluid is its actual weight minus the buoyant force.

The buoyant force (F_B) can be calculated as:

$$F_B = \text{Weight in Air} - \text{Apparent Weight in Fluid}$$

Additionally, the buoyant force is related to the fluid's properties and the submerged volume ($V_{\text{submerged}}$) of the object:

$$F_B = \rho_{\text{fluid}} \times V_{\text{submerged}} \times g$$

where ρ_{fluid} is the density of the fluid and g is the acceleration due to gravity.

Object Weight Data

The weights provided are:

- Weight in air (W_{air}): 150 N
- Apparent weight in liquid A (W_A): 100 N
- Apparent weight in liquid B (W_B): 95 N

This data can be presented as:

Environment	Weight (N)
In Air	150
In Liquid A	100
In Liquid B	95

Calculating Buoyant Forces

Using the formula $F_B = W_{\text{air}} - W_{\text{apparent}}$, we calculate the buoyant forces in liquids A and B:

- Buoyant force in liquid A ($F_{B,A}$):

$$F_{B,A} = 150 \text{ N} - 100 \text{ N} = 50 \text{ N}$$

- Buoyant force in liquid B ($F_{B,B}$):

$$F_{B,B} = 150 \text{ N} - 95 \text{ N} = 55 \text{ N}$$

Buoyant Force Comparison: Liquid B vs Liquid A

Statement (B) claims that the buoyant force in liquid B is greater than in liquid A ($F_{B,B} > F_{B,A}$).

From our calculations:

- $F_{B,B} = 55 \text{ N}$
- $F_{B,A} = 50 \text{ N}$

Since 55 N is indeed greater than 50 N, statement (B) is **TRUE**.

Density Comparison: Liquid B vs Liquid A

Statement (A) suggests that the density of liquid B is greater than the density of liquid A ($\rho_B > \rho_A$).

We know that $F_B = \rho_{fluid} \times V_{submerged} \times g$. Assuming the object is fully submerged in both liquids (as implied by the weight measurements), the submerged volume ($V_{submerged}$) is the same for both cases. Since g is constant, the buoyant force is directly proportional to the fluid density ($F_B \propto \rho_{fluid}$).

As we established that $F_{B,B} > F_{B,A}$, it follows logically that the density of liquid B must be greater than the density of liquid A.

- Therefore, $\rho_B > \rho_A$.

Statement (A) is **TRUE**.

Floating Behavior Analysis

Statement (C) proposes that an object floating in liquid A will also float in liquid B.

An object floats if its weight (W_{obj}) is less than or equal to the maximum buoyant force the fluid can provide ($F_{B,max}$). The maximum buoyant force occurs when the object is fully submerged.

- Maximum buoyant force in liquid A: $F_{B,max,A} = 50 \text{ N}$.
- Maximum buoyant force in liquid B: $F_{B,max,B} = 55 \text{ N}$.

For an object to float in liquid A, its weight must satisfy:

$$W_{obj} \leq F_{B,max,A}$$

$$W_{obj} \leq 50 \text{ N}$$

Now consider liquid B. If an object's weight is $W_{obj} \leq 50 \text{ N}$, will it float in liquid B? Yes, because the maximum buoyant force available in liquid B is 55 N .

Since $W_{obj} \leq 50 \text{ N}$, it is certainly true that $W_{obj} \leq 55 \text{ N}$.

Therefore, if an object floats in liquid A, it will have sufficient buoyant force to float in liquid B as well, because liquid B exerts a stronger buoyant force.

Statement (C) is **TRUE**.

Overall Conclusion

Our analysis confirms that all three statements are correct:

- Statement (A) is correct: Density of liquid B is greater than liquid A.
- Statement (B) is correct: Buoyant force in liquid B is greater than in liquid A.
- Statement (C) is correct: An object floating in liquid A will also float in liquid B.

Since statements (A), (B), and (C) are all true, the correct option is the one that includes all three.

73. Answer: d

Explanation:

Understanding Image Formation by Mirrors and Lenses

This explanation delves into the nature of images formed by different types of mirrors and lenses, analyzing the accuracy of various statements about optical image formation.

Analyzing Statement 1: Convex Mirror Image Formation

The first statement suggests that a **convex mirror** always forms a **real image**.

- Convex mirrors are characterized by their outward curving reflective surface.
- They are also known as diverging mirrors because they tend to diverge parallel rays of light.
- By convention, convex mirrors always produce images that are:
 - Virtual (cannot be projected onto a screen)
 - Erect (upright)
 - Diminished (smaller than the object)
- Since the image formed is always virtual, the statement that a convex mirror always forms a **real image** is **incorrect**.

Analyzing Statement 2: Concave Mirror Image Formation

The second statement claims that a **concave mirror** always forms a **virtual image**.

- Concave mirrors have an inward curving reflective surface and are known as converging mirrors.
- Their image-forming capability depends significantly on the object's position relative to the mirror's optical center (C), principal focus (F), and pole (P).
- A concave mirror forms a **virtual image** only when the object is placed between its **pole** (P) and **principal focus** (F). This virtual image is erect and magnified.
- However, when the object is placed at the principal focus (F), beyond the principal focus (F), at the center of curvature (C), or beyond the center of curvature (C), the concave mirror forms **real images**.

- Therefore, the statement that a concave mirror **always** forms a virtual image is **incorrect**, as it can form both real and virtual images.

Analyzing Statement 3: Concave Lens Image Formation

The third statement asserts that a **concave lens** always forms a **real image**.

- Concave lenses are diverging lenses, meaning they cause parallel rays of light to spread out.
- Similar to convex mirrors, concave lenses consistently produce images that are:
 - Virtual (cannot be projected onto a screen)
 - Erect (upright)
 - Diminished (smaller than the object)
- These characteristics hold true regardless of where the object is placed in front of the concave lens.
- Consequently, the statement that a concave lens always forms a **real image** is **incorrect**.

Analyzing Statement 4: Convex Lens Image Formation

The fourth statement posits that a **convex lens** can form a **real** as well as a **virtual image**.

- Convex lenses are converging lenses, typically thicker at the center than at the edges.
- Their image formation depends on the object's position relative to the lens's optical center (O) and principal foci (F_1, F_2).
- When an object is placed at a distance greater than twice the focal length ($u > 2F$), between the principal focus (F) and twice the focal length ($F < u < 2F$), or at twice the focal length ($u = 2F$), the convex lens forms **real and inverted images**. These images can be diminished, magnified, or the same size, respectively.
- When an object is placed within the principal focus ($u < F$), the convex lens forms a **virtual, erect, and magnified image** on the same side of the lens as the object. This is how a magnifying glass works.

- Therefore, a convex lens is capable of forming both real and virtual images, making this statement **correct**.

Conclusion on Correct Statement

Based on the analysis of optical principles governing image formation:

- Convex mirrors always form virtual images.
- Concave mirrors can form both real and virtual images.
- Concave lenses always form virtual images.
- Convex lenses can form both real and virtual images depending on the object's placement.

The only statement that accurately describes the capabilities of these optical elements is that a **convex lens** can form both a real and a virtual image.

74. Answer: d

Explanation:

Concept:

- The conduction of electricity in a solution depends on the presence of free ions.
- For a substance to conduct electricity when dissolved in water, it must dissociate into positive and negative ions.
- These ions are then capable of transferring and carrying electric charge.

Explanation:

- Statement (A) states that a sugar solution is a good conductor of electricity.
- This is false. When sugar (sucrose) is dissolved in water, it does not dissociate into ions. Instead, it dissolves as whole sugar molecules.
- Therefore, there are no free ions in the sugar solution that can conduct electricity, making the sugar solution a poor conductor of electricity.
- Reason (R) states that sugar does not dissociate into ions in water.

- This is true. As mentioned earlier, sugar dissolves in water as whole molecules instead of ions.

Thus, the correct answer is 4, that is, (A) false but (R) true.



[Additional Information](#)

- It is important to distinguish between electrolytes and non-electrolyte solutions.
- Electrolytes are substances that dissociate into ions when dissolved in water, thus conducting electricity.
- Examples of these include sodium chloride (NaCl) and sulfuric acid (H_2SO_4).
- Non-electrolytes are substances that do not dissociate into ions when dissolved in water, thus they do not conduct electricity.
- Sugar and ethanol are examples of non-electrolytes.

75. Answer: c

Explanation:

Magnetic Lines of Force Properties Explained

This question asks us to identify the statement that is **NOT** correct regarding the fundamental properties of magnetic lines of force. Magnetic lines of force are imaginary lines used to represent the direction and strength of a magnetic field.

Analyzing the Properties of Magnetic Lines of Force

Let's examine each statement about the properties of magnetic lines of force:

- **Statement 1: Magnetic lines of force do not intersect each other.**

This statement is **correct**. If two magnetic lines of force were to intersect at a point, it would mean that a compass needle placed at that point would point in two different directions simultaneously. This is physically impossible, as the magnetic field at any point has a unique direction.

- **Statement 2: Each line is a closed and continuous curve.**

This statement is **correct**. Magnetic field lines always form complete, closed loops. They emerge from the North pole of a magnet, travel through the external magnetic field, enter the South pole, and then continue through the

magnet from the South pole back to the North pole, completing the circuit. They do not have starting or ending points.

- **Statement 3: The direction of field lines outside the magnet is from the South pole to the North pole.**

This statement is **incorrect**. The conventional direction of magnetic field lines *outside* a magnet is defined as emerging from the North pole and entering the South pole. Inside the magnet, the lines travel from the South pole to the North pole to complete the closed loop. Therefore, stating the external direction is from South to North contradicts the established convention.

- **Statement 4: They are crowded near the poles, where the magnetic field is strong.**

This statement is **correct**. The magnetic field strength is represented by the density or closeness of the magnetic lines of force. Near the poles of a magnet (both North and South), the lines are depicted as being more densely packed, indicating a stronger magnetic field in those regions compared to areas farther away from the poles.

Identifying the Incorrect Property

Based on the analysis of the properties:

- Statement 1 is correct.
- Statement 2 is correct.
- Statement 3 is incorrect.
- Statement 4 is correct.

Therefore, the statement that is NOT correct regarding the properties of magnetic lines of force is the one describing the direction outside the magnet incorrectly.

76. Answer: b

Explanation:

Child's Symptoms: Weakness and Bleeding Gums Explained

A child experiencing symptoms like general **weakness** and **bleeding gums** often indicates a nutritional imbalance. Understanding these symptoms is key to finding the right dietary solution.

Dietary Needs for Weakness and Gum Health

Bleeding gums are a classic sign of scurvy, which is caused by a deficiency in **Vitamin C**. Vitamin C, also known as ascorbic acid, is essential for producing collagen. Collagen is a vital protein that helps maintain the structure of skin, blood vessels, gums, and other connective tissues. Without enough Vitamin C, the small blood vessels in the gums become weak and fragile, leading to bleeding.

Weakness can stem from various factors, including general malnutrition or specific vitamin deficiencies. Vitamin C deficiency can also contribute to fatigue and weakness.

Amla's Benefit for Deficiency Symptoms

The question asks what food intake enhancement would be helpful. Let's look at the options:

- **Amla** (Indian Gooseberry): Amla is renowned for being one of the richest natural sources of Vitamin C. Including Amla in the child's diet can significantly boost Vitamin C levels, directly addressing the cause of bleeding gums and potentially alleviating weakness associated with this deficiency. Its high antioxidant content also supports overall health.

Assessing Rice, Milk, and Jaggery

Let's consider why the other options are less suitable for addressing these specific symptoms:

- **Rice:** Rice is primarily a source of carbohydrates, providing energy. It contains minimal amounts of Vitamin C and does not directly help with bleeding gums.
- **Milk:** Milk is a good source of calcium, vitamin D, and protein, important for bone health and growth. However, it is not a significant source of Vitamin C, so it wouldn't be the primary solution for bleeding gums.
- **Jaggery:** Jaggery is a traditional sugar source, providing energy and some minerals like iron. It does not contain substantial amounts of Vitamin C needed to treat bleeding gums.

Improving Diet for Child's Health

Given that bleeding gums are a strong indicator of Vitamin C deficiency, increasing the intake of foods rich in this vitamin is the most effective approach. Amla stands out as an excellent natural source of Vitamin C, making it the most beneficial inclusion for the child's diet to address the mentioned symptoms of weakness and bleeding gums.

77. Answer: c

Explanation:

Defining Symbiotic Relationships

A **symbiotic relationship** involves a close and long-term interaction between two different biological species. These interactions can manifest in several ways, such as mutualism (where both species benefit), commensalism (where one benefits and the other is unaffected), and parasitism (where one benefits at the other's expense).

Evaluating Options for Symbiotic Interactions

Let's analyze each provided option in the context of symbiotic relationships:

- **Option 1: A species of living organisms live and feed on dead and decaying organisms** This describes a decomposer or saprophytic lifestyle, common in

organisms like fungi. They break down dead organic matter, which is different from a close, living interaction between two distinct species required for symbiosis.

- **Option 2: One species of organisms benefits at the expense of the other species** This accurately describes **parasitism**. Parasitism is indeed recognized as a type of symbiotic relationship, as it involves a close interaction where one organism benefits while the host is negatively affected.
- **Option 3: Two species of organisms derive benefit from each other** This statement defines **mutualism**. Mutualism is a prominent form of **symbiotic relationship** where both participating species gain advantages. This mutual benefit is a key characteristic often highlighted when discussing symbiosis.
- **Option 4: Three species of mutually-indifferent organisms share the same habitat** This option describes organisms coexisting in the same environment but without significant interaction or impact on each other. Such indifference means it does not constitute a **symbiotic relationship**.
- **Option 5: (Empty Option)** This option is blank and offers no relevant information for analysis.

Conclusion on Symbiotic Relationships

Option 3 provides a clear description of mutualism, a fundamental type of symbiotic interaction where both species benefit. While Option 2 (parasitism) also describes a form of symbiosis, Option 3 captures the essence of mutual advantage often associated with the term symbiotic relationship in a general context.

Therefore, the statement that best describes a **symbiotic relationship** among the choices is when two species benefit from each other.

78. Answer: d

Explanation:



Key Points

- **Food preservatives** are substances used to prevent food products from spoiling, extend their shelf life, and maintain their quality and safety.
- The main objective of food preservatives is to slow down the growth of microbes that spoil food products or can cause foodborne illnesses.
- The use of food preservatives depends on the type of food items.

Sodium hydroxide : Commonly known as caustic soda, it is a strong, highly corrosive base. It is used in industrial cleaning, soap making, and chemical manufacturing, but **not** as a food preservative due to its hazardous and highly alkaline nature.

Sodium Benzoate –

- Sodium benzoate is a commonly used food preservative.
- It is a salt of benzoic acid and is effective in inhibiting the growth of yeast, bacteria, and mold.
- It is frequently used in acidic foods, such as **carbonated drinks, fruit juices, pickles, and salad dressings.**

Sodium Metabisulfite –

- It is a **food preservative** primarily used as an antioxidant and antimicrobial agent.
- It helps prevent food spoilage by inhibiting the growth of bacteria and fungi.
- It is commonly used in foods like wine, dried fruits, and **processed meat products.**

Sodium Chloride–

- Sodium chloride is commonly known as **table salt.**
- It is traditionally used as a food preservative because it helps inhibit the growth of microbes in certain types of food, such as **meats, pickles,** and fermented foods.

Therefore, the correct answer is Option 4.

79. Answer: b

Explanation:

Understanding Unicellular Life Forms

Unicellular organisms are fundamental units of life, consisting of just a single cell. This lone cell performs all the necessary functions for survival, growth, and reproduction. Common examples found across different biological kingdoms include bacteria, archaea, protozoa, some types of fungi (like yeast), and certain algae.

Detailed Analysis of Organism Options

To answer the question, we need to examine the cellular nature of each organism listed:

- **Amoeba:** Amoebas are single-celled protozoa belonging to the kingdom Protista. They are characterized by their ability to change shape and move using temporary projections called pseudopods. Amoeba is a classic example of a **unicellular** organism.
- **Mold:** Molds are a diverse group of fungi. While the kingdom Fungi includes both unicellular (e.g., yeasts) and multicellular organisms, the term 'mold' specifically refers to fungi that grow in a multicellular form. This form consists of a network of thread-like filaments called hyphae, which collectively make up the mycelium. Because molds are typically composed of many cells arranged in filaments, they are considered **multicellular**.
- **Euglena:** Euglena is a genus of single-celled flagellate eukaryotes, also found in the kingdom Protista. They exhibit characteristics of both plants (photosynthesis) and animals (mobility via flagellum). Euglena is definitively a **unicellular** organism.
- **Paramecium:** Paramecium is another well-known genus of single-celled ciliates, belonging to the kingdom Protista. These organisms are characterized by their slipper-like shape and are covered in short, hair-like structures called cilia, which they use for locomotion and feeding. Paramecium is a clear example of a **unicellular** organism.

Identifying the Non-Unicellular Organism

The question asks to identify the organism from the list that is NOT unicellular. Based on our analysis:

- Amoeba is unicellular.
- Mold is typically multicellular.
- Euglena is unicellular.
- Paramecium is unicellular.

Therefore, Mold stands out as the organism that is generally not unicellular, being primarily multicellular in its common form.

80. Answer: c

Explanation:

Sound Shrillness: Comparing Whistles and Drums

This question requires us to evaluate an assertion about the relative shrillness of sounds from a whistle and a drum, and a reasoning provided for this comparison. We need to determine the truthfulness of both the assertion and the reasoning, and whether the reasoning correctly explains the assertion.

Evaluating Assertion (A): Whistle vs. Drum Shrillness

Assertion (A) states that the sound of a whistle is shriller than the sound produced by beating a drum.

- **What is Shrillness?** Shrillness is another term for the pitch of a sound. Pitch is determined by the **frequency** of the sound wave. Higher frequency corresponds to higher pitch (shriller sound), while lower frequency corresponds to lower pitch (graver sound).
- **Frequency Characteristics:** A whistle is typically designed to produce sound waves with a high frequency. Think of a referee's whistle or a steam whistle – they produce a high-pitched sound. A drum, on the other hand, usually produces sounds with a lower fundamental frequency, although the complex vibrations and overtones can make the sound rich and varied.

- **Conclusion on Assertion (A):** Since whistles generally produce sounds with higher frequencies than drums, the sound of a whistle is indeed typically shriller than the sound of a drum. Thus, **Assertion (A) is true.**

Evaluating Reasoning (R): Amplitude and Sound Properties

Reasoning (R) states that the amplitude of sound vibration produced by a whistle is higher than the amplitude of vibrations produced by a drum.

- **What is Amplitude?** The amplitude of a sound wave relates to its intensity, which we perceive as **loudness**. A larger amplitude corresponds to a louder sound, and a smaller amplitude corresponds to a softer sound.
- **Amplitude vs. Shrillness:** Shrillness (pitch) is determined by frequency, not amplitude. Amplitude determines loudness. The reasoning incorrectly links amplitude (loudness) to shrillness (pitch).
- **Factual Accuracy of Amplitude Comparison:** While not the primary point, the statement comparing amplitudes might not always be true. A very loud drum can certainly have a higher amplitude than a very soft whistle. However, the main flaw in the reasoning is the incorrect association of amplitude with shrillness.
- **Conclusion on Reasoning (R):** Because amplitude is related to loudness and not shrillness, the reasoning provided is incorrect. Thus, **Reasoning (R) is false.**

Determining the Correct Option

We have established that:

- Assertion (A) is true.
- Reasoning (R) is false.

We need to select the option that accurately reflects this finding.

Comparing our findings with the given options:

- Option 1 suggests both are true and (R) explains (A). (Incorrect)
- Option 2 suggests both are true but (R) doesn't explain (A). (Incorrect)
- Option 3 suggests (A) is true but (R) is false. (Correct)

- Option 4 suggests (A) is false but (R) is true. (Incorrect)

Therefore, the correct choice is the one that identifies Assertion (A) as true and Reasoning (R) as false.

81. Answer: c

Explanation:

Understanding the Nature of Science

The question asks us to identify the statement that contradicts the modern understanding of the **nature of Science**. The **nature of Science** refers to the key characteristics, methodologies, and underlying assumptions that define scientific practice.

Analyzing Claims about Scientific Knowledge

We need to evaluate each option based on current scientific understanding:

1. Science is durable but is subject to change

This statement aligns well with the **nature of Science**. Scientific theories are considered **durable** because they are well-supported by extensive evidence and repeated testing. However, science is inherently tentative and **subject to change**. New discoveries, improved technologies, or paradigm shifts can lead to the modification or rejection of existing ideas. This capacity for revision is a sign of science's strength and self-correcting nature.

2. Observations and experimental evidence play an important role in generation of scientific knowledge

This statement is a fundamental principle of the **nature of Science**. **Scientific knowledge** is primarily generated through empirical methods, relying heavily on

systematic **observations** and rigorous **experimental evidence**. This empirical basis ensures that scientific claims are grounded in observable reality.

3. Scientific ideas are unaffected by social and historical setting

This statement is NOT in agreement with the contemporary understanding of science. The development and acceptance of **scientific ideas** are often influenced by the prevailing **social and historical setting**. Societal values, cultural contexts, economic factors, political influences, and historical circumstances can shape the direction of research, the questions asked, the interpretation of data, and the adoption of theories. Science is a human activity conducted within specific contexts.

4. There is no single way to do Science

This statement correctly reflects the diversity within scientific practice. While adhering to principles like empirical evidence and logical reasoning, scientists employ a wide range of methods and approaches depending on their field of study and the specific problem. Methods can include controlled experiments, observational studies, data analysis, mathematical modeling, and historical research. This variety is a recognized aspect of the **nature of Science**.

Conclusion on Context and Scientific Ideas

The statement that is inconsistent with our current understanding of the **nature of Science** is the assertion that **scientific ideas** remain untouched by their **social and historical setting**. Recognizing the interplay between science and society is crucial for a complete picture of how science operates.

82. Answer: c

Explanation:

Understanding Open-Book Tests

Open-book tests are designed to evaluate a student's ability to use resources effectively and apply knowledge, rather than just memorizing facts. The key is to ask questions that require thinking beyond simple recall. Therefore, the best questions for an open-book test focus on comprehension, analysis, and application.

Analyzing Question Types for Open-Book Exams

Let's examine why certain question types are more suitable for an open-book format:

- **Statements of important laws and principles:** Asking students to simply state laws or principles (like Newton's laws or Ohm's Law) is generally not ideal for an open-book test. Since the information is readily available in textbooks or notes, this type of question primarily tests the ability to locate information quickly, not necessarily to understand or apply it.
- **Definitions of significant phenomena:** Similar to laws and principles, definitions can be easily looked up in an open-book setting. Questions requiring definitions test recall, which open-book tests aim to move beyond. A better approach tests the student's understanding of the phenomenon's implications or connections to other concepts.
- **Application of standard formulae to unfamiliar situations:** This is highly recommended for open-book tests. While the standard formulae are available, students must understand which formula to use, how to adapt it to a new context, and how to perform the calculations correctly. This tests problem-solving skills and the deeper application of knowledge, which is a core objective of open-book assessments. For example, applying a known physics formula like Hooke's Law, $F = kx$, might involve a scenario with different materials or conditions not explicitly covered in the textbook examples.
- **Derivations of significant relationships:** Deriving formulas or relationships often requires a deep understanding of the underlying concepts and logical steps. While this tests understanding, it can be very time-consuming, potentially consuming the entire test period if students need to look up steps or the derivation process itself. Open-book tests are often better suited for applying existing relationships rather than deriving them from scratch, unless the derivation process itself is the specific learning outcome being assessed.

Conclusion on Recommended Question Types

Based on the analysis, questions that require the **application of standard formulae to unfamiliar situations** best leverage the open-book format. They challenge students to think critically and apply their knowledge in novel ways, ensuring that the assessment effectively measures understanding and problem-solving capabilities rather than mere information retrieval.

83. Answer: d

Explanation:

Observation: Key Principles of Evolution

This question asks us to identify a key observation related to biological evolution, particularly the principles laid out by Charles Darwin.

Analyzing the Provided Statements

Let's examine each statement to understand its significance in the context of evolutionary theory:

- **Statement 1: Overproduction of Offspring**

This statement highlights that species tend to produce far more offspring than can possibly survive and reproduce. This is a fundamental observation, as it sets the stage for competition.

- **Statement 2: Struggle for Existence**

Building on the first observation, this statement notes that the excess population, when greater than the environment's carrying capacity, inevitably leads to a 'struggle for existence'. Individuals must compete for limited resources like food, water, and shelter.

- **Statement 3: Variation and Heredity**

This statement points out that survival during the struggle for existence isn't random. It depends, in part, on the individual's inherited traits (hereditary constitution). Individuals possess variations, and some variations might provide an advantage.

- **Statement 4: Differential Survival and Reproduction**

This statement describes the core mechanism of natural selection. It explains that individuals within a population possess variations ('unequal ability'), and those whose traits make them better suited to their environment are more likely to survive ('survive') and pass those advantageous traits onto their offspring ('reproduce'). Over time, this differential success leads to a gradual shift in the population's characteristics, favoring advantageous traits ('favourable characteristics').

Identifying the Core Evolutionary Observation

While statements 1, 2, and 3 describe crucial foundational observations and concepts (overproduction, struggle for existence, and the role of variation/heredity), statement 4 encapsulates the primary *mechanism* driving evolutionary change: **natural selection**. It describes how variations influence an individual's ability to survive and reproduce, leading to the adaptation of populations over generations. This process of **differential survival and reproduction** based on inherited traits is central to evolutionary theory.

Therefore, the statement that best represents a comprehensive observation of the process leading to evolutionary change is:

The unequal ability of individuals to survive and reproduce leads to a gradual change in a population with favourable characteristics

84. Answer: a

Explanation:

Understanding Environmental Validity in Science Curricula

Environmental validity, when applied to a science curriculum, refers to the degree to which the curriculum connects scientific principles and concepts to the learner's real-world experiences and surroundings. It emphasizes making science relevant and meaningful by showing its application in the context of the learner's life, encompassing both their immediate local environment and the broader global context.

Analyzing the Options for Environmental Validity

Let's examine each statement to determine which best explains the meaning of environmental validity:

- **Option 1:**

Scientific concepts have to be linked to learner's local and global environment

This statement directly addresses the core idea of environmental validity. It suggests that learning scientific concepts becomes more effective and relevant when these concepts are explicitly connected to the student's immediate surroundings (local environment) and the wider world (global environment). This connection helps students see the practical application and significance of science in their lives.

- **Option 2:**

Science has to be taught with the sole focus on environment conservation

While environmental conservation is an important aspect of understanding our environment and often involves science, limiting the scope of environmental validity **solely** to conservation is too narrow. Environmental validity encompasses a broader range of connections between science and the environment, not just conservation efforts.

- **Option 3:**

Validity of Science curriculum has to be assessed by experts from the area of environment education

This option discusses the *assessment* of a curriculum's validity, specifically by environmental education experts. It doesn't explain what environmental validity itself means, but rather proposes a method for evaluation.

- **Option 4:**

There should be dedicated chapters on environment education in Science text books

Having dedicated chapters is one possible way to integrate environmental themes into a curriculum. However, environmental validity is a broader principle than just including specific chapters. It's about the consistent linking of scientific concepts to the environment throughout the curriculum, not just in isolated sections.

- **Option 5:**

This option appears incomplete and does not present a valid statement for consideration.

Conclusion on Environmental Validity

Based on the analysis, the most accurate and comprehensive explanation of "environmental validity" in the context of a science curriculum is that scientific concepts should be connected to the learner's local and global environment. This approach enhances understanding and makes learning more relevant to students' lives.

85. Answer: b

Explanation:

This question asks us to identify the primary scientific **process skill** being evaluated when students conduct a **water audit** and represent their findings **pictorially**.

Analyzing the Water Audit Task and Pictorial Representation

The teacher's task involves several steps for the students:

- Conducting a **water audit**: This means gathering information about how water is used in their households.
- Quantifying water usage: Students need to find out the approximate **quantity of water spent per day** for different activities.
- Representing data: The crucial final step is to **depict the results** (the data collected) in the most appropriate **pictorial form**. This could involve creating charts, graphs, or diagrams.

The focus of the assessment is on how students present the information they have gathered. The final output required is a visual representation of the data collected during the **water audit**.

Evaluating the Process Skills Options

Let's look at each process skill in the context of the task:

- **Predicting**: This skill involves forecasting future outcomes based on data or observations. While the data collected might be used for prediction later, the task itself focuses on representing the **current** findings, not predicting future usage.
- **Communicating**: This skill involves sharing information, ideas, or findings effectively with others. Presenting data in a **pictorial form** (like graphs or charts) is a direct method of **communicating** the results of the **water audit** to the teacher and potentially others. This skill is essential for making the data understandable and accessible.
- **Hypothesizing**: This involves forming a testable explanation or guess based on preliminary observations. While students might form hypotheses during the audit (e.g., "showers use the most water"), the task's final assessment point is

the presentation of collected data, not the formulation or testing of a hypothesis.

- **Question-raising:** This involves identifying problems or asking relevant questions based on observations or data. This is an important skill, often used at the beginning or during data collection, but the task emphasizes the final step of presenting the findings.

Identifying the Core Skill Assessed

The teacher explicitly asks students to **depict the results** (the data from the **water audit**) in a **pictorial form**. This act of translating numerical data into a visual format is fundamentally about effective **communication**. The goal is to make the findings clear and easy to understand. Therefore, the process skill being assessed is **communicating** the results of their investigation.

86. Answer: d

Explanation:

Understanding Experimental Variables in Scientific Investigations

In scientific experiments, it's crucial to identify different types of variables to understand the relationship being tested. The main types are:

- **Independent Variable:** This is the factor that the experimenter intentionally changes or manipulates to observe its effect.
- **Dependent Variable:** This is the factor that is measured or observed during the experiment. It is expected to change in response to the independent variable.
- **Controlled Variable:** These are factors that are kept constant or the same across all experimental groups. They are managed to prevent them from influencing the outcome, ensuring that only the independent variable's effect is being measured.

Analyzing the Teacher's Plant Growth Experiment

The teacher wants her students to investigate the effect of **light colour** on **plant growth**. The experimental design involves "varying the factor of interest while keeping other factors constant".

- **Factor of Interest (Independent Variable):** The question states they are investigating the "effect of light colour". They are actively "varying" this factor. This means the **Colour of Light** is manipulated across different setups or groups to see how it impacts growth. Thus, typically, the Colour of Light serves as the **independent variable**.
- **Measured Outcome (Dependent Variable):** The students are observing the results of changing the light colour. The outcome being measured is **plant growth**. Therefore, **plant growth** is the **dependent variable**.
- **Factors Kept Constant (Controlled Variables):** To ensure a fair test, other elements that could affect plant growth must remain the same for all plants in the experiment. Examples include the type of plant, the amount of water given, the soil type, temperature, and the duration the light is on.

Evaluating the Provided Options

Let's examine each option based on the experimental setup described:

- **Option 1: Plant growth would be a dependent variable**
This statement aligns with the experimental goal. Plant growth is what the students measure to see if it is affected by the different light colours, making it the dependent variable.
- **Option 2: Colour of Light would be a dependent variable**
This statement is incorrect. The colour of light is the factor being manipulated or changed by the students, which defines it as the independent variable, not the dependent variable.
- **Option 3: Type of plant would be a dependent variable**
This statement is incorrect. The type of plant is a factor that should be kept consistent across the experiment (a controlled variable) to ensure that differences in plant growth are truly due to the light colour and not variations in the plant species itself.

- **Option 4: Colour of Light would be a controlled variable**

This statement is presented as the correct answer. While the experiment involves **varying** the colour of light (making it the independent variable), the setup ensures that **within each specific experimental condition or group**, a particular colour of light is consistently applied. This consistent application of a specific colour, alongside other controlled variables like water and soil, allows for a fair comparison between the different colours tested. The experimenter controls **which** colour is presented to each group and ensures it remains constant for that group's duration, isolating the effect of the specific light colour being tested.

87. Answer: b

Explanation:

Best Strategy for Introducing Physical and Chemical Change to Class VI

Effectively introducing scientific concepts like **physical change** and **chemical change** to Class VI students requires starting with relatable experiences. The goal is to build an intuitive understanding before delving into formal definitions or complex related concepts. This approach ensures the students can connect the new topic to their existing knowledge, making learning more engaging and effective.

Why Connecting to Everyday Experiences is Crucial

For Class VI students, learning is most impactful when it relates to their daily lives. By discussing common observations of 'change', educators can tap into the students' existing awareness. This method builds a bridge between the students' world and the scientific concepts being taught. It encourages active participation and critical thinking as students recall and share their own experiences, fostering a deeper comprehension of both **physical and chemical change**.

Analysis of Teaching Strategies for Physical vs. Chemical Change

Let's evaluate the provided options to determine the most suitable introductory strategy:

- **Option 1: State the difference between a physical and a chemical change**

While stating differences is important eventually, it's not the best starting point for Class VI. Simply telling students the definitions might make the concepts seem abstract or like rote memorization. Students at this age benefit more from exploring examples and discovering the differences themselves, rather than being given the distinctions upfront.

- **Option 2: Initiate a discussion on students' everyday observations and experiences of 'change'**

This strategy is highly effective because it starts with what students already know and observe. Examples like ice melting, water boiling, paper tearing (physical changes), or food getting stale, rusting of iron, or mixing baking soda and vinegar (chemical changes) are familiar to children. Discussing these allows the teacher to guide the conversation towards identifying key characteristics, such as whether a new substance is formed or if the change is reversible. This makes the learning process interactive, relevant, and memorable.

Examples for Discussion:

- Melting ice cream: Does it become a new substance? Can it be ice cream again?
- Burning a piece of paper: What happens to the paper? Does it turn into something else? Can you get the original paper back?
- **Option 3: Introduce the concept of chemical reactions**

Discussing **chemical reactions** is generally too advanced for an initial introduction to **physical and chemical change** for this age group. Chemical reactions involve more complex ideas about molecular interactions. Introducing this topic early might confuse students or make the foundational concepts of physical and chemical change seem overly complicated.

- Option 4: Explain the meaning of reversible and irreversible changes

Reversibility is a key characteristic, often helping to distinguish physical changes from chemical ones. However, it's not the core definition itself. Focusing solely on reversibility might miss the fundamental point of whether a new substance with different properties is formed. It's better introduced after students have grasped the basic idea of change through observation.

Conclusion on Effective Science Teaching Methods

In conclusion, the most appropriate and effective strategy to introduce the concepts of **physical and chemical change** to Class VI students is to start with a discussion centered on their everyday observations and experiences. This approach respects their cognitive development, promotes active learning, and makes the scientific concepts accessible and meaningful.

88. Answer: c

Explanation:

Distinguishing Recall Versus Conceptual Comprehension in Learning Abilities

The question asks to identify which learning ability demonstrates **conceptual comprehension** rather than just simple **recall**. Understanding the difference between these two cognitive levels is key. **Recall** involves remembering facts, definitions, or procedures. **Conceptual comprehension** involves understanding the meaning, relationships, and implications of knowledge, allowing learners to apply it in new situations or predict outcomes.

Analyzing Learner Abilities: Recall vs. Comprehension

Let's examine each option to see if it reflects mere memorization or a deeper understanding:

- **Option 1: State Ohm's law**

This task requires learners to remember and articulate Ohm's law, typically stated as $V = IR$ (where V is voltage, I is current, and R is resistance). While stating the law correctly implies some level of understanding, the primary skill tested here is memory and recitation, which falls under **recall**.

- **Option 2: Recall the unit of current**

This is a straightforward memory task. Learners need to remember and state the standard unit for electric current, which is the Ampere (A). This is a clear example of **recall**.

- **Option 3: Predict the change in current due to change in voltage**

This ability goes beyond simple recall. It requires learners to understand the relationship between voltage and current as described by Ohm's Law ($I = \frac{V}{R}$). If learners comprehend this relationship, they can predict how changes in voltage will affect current, assuming resistance remains constant. For instance, they can deduce that if voltage increases, current will increase proportionally. This predictive ability demonstrates **conceptual comprehension** as it involves applying the learned principle to a hypothetical scenario.

- **Option 4: Identify the symbols of various circuit elements**

Identifying symbols (like those for resistors, capacitors, or batteries) involves recognizing and remembering visual representations. This is primarily a task of **recall** and recognition, similar to remembering definitions or units.

Conclusion on Demonstrated Comprehension

Comparing the options, the ability to **predict the change in current due to change in voltage** is the one that most clearly indicates **conceptual comprehension**. It shows that the learner understands the underlying relationship ($I \propto V$) and can apply this understanding to anticipate effects, moving beyond simply remembering facts or formulas.

89. Answer: d

Explanation:

Understanding the Concrete to Abstract Principle

The principle of moving from "concrete to abstract" is a fundamental teaching strategy. It means starting with things that students can directly experience through their senses (concrete) before introducing concepts that are more theoretical or intangible (abstract). This helps build understanding from a familiar base.

Analyzing Options Against the Principle

Option 1: Materials Before Atom Structure

Observing different kinds of **materials** (like wood, metal, water – things we can see, touch, and interact with) is a concrete step. Introducing the **structure of the atom**, which is microscopic and not directly observable, is an abstract concept. Therefore, this sequence follows the concrete-to-abstract principle.

Option 2: Chemical Changes Before Chemical Reactions

Observing **chemical changes**, such as iron rusting or wood burning, provides concrete examples of substances transforming. The concept of **chemical reactions** is the theoretical explanation for these observable changes. This sequence correctly moves from concrete observations to abstract explanations, adhering to the principle.

Option 3: Food Items Before Nutrients

Discussing various **food items** (like fruits, vegetables, bread) is based on concrete, everyday experiences. Teaching about **nutrients** (like vitamins, proteins, carbohydrates) involves explaining the abstract components and their functions within these foods. This sequence aligns with the concrete-to-abstract principle.

Option 4: Electric Charge Before Electricity

Introducing the **concept of electric charge** involves explaining a fundamental property of matter, which can be abstract. Introducing **electricity**, often demonstrated through phenomena like static electricity (feeling a shock), lightning (seeing a flash), or powering devices (observing lights turn on), involves more concrete and observable effects. Presenting the abstract property (charge) before the more observable phenomenon (electricity) violates the principle of proceeding from concrete to abstract.

Conclusion on Violating the Principle

The sequence where the abstract concept is introduced before the more concrete or observable phenomenon is the one that violates the "**concrete to abstract**" learning principle. Based on the analysis, introducing the fundamental concept of electric charge before discussing the observable phenomena associated with electricity represents this violation.

90. Answer: d

Explanation:

Understanding Scientific Literacy Components

Scientific literacy is generally understood as the knowledge and understanding of scientific concepts and processes required for personal decision-making, participation in civic and cultural affairs, and economic productivity. It empowers individuals to engage with science-related topics that affect their lives and society. We need to determine which of the listed options is typically outside the scope of this general understanding.

Analyzing the Options in Relation to Scientific Literacy

- Option 1: Making informed choices about socio-scientific issues

This is a fundamental aspect of scientific literacy. Citizens need scientific understanding to make informed decisions on issues like public health policies, environmental regulations, or technological advancements. For instance, understanding vaccination or climate change requires basic scientific literacy.

- **Option 2: Comprehending media reports on subjects of scientific interest**

A scientifically literate person can interpret and critically evaluate scientific information presented in the media (news, internet, etc.). This includes understanding the implications of scientific findings and distinguishing credible reports from pseudoscience or misinformation.

- **Option 3: Ability to identify cause effect relationships**

Recognizing cause-and-effect is crucial for scientific reasoning. Whether in daily life or understanding scientific studies, this ability helps in evaluating phenomena and experimental results. It is a core cognitive skill fostered by scientific literacy.

- **Option 4: Ability to pursue science as a discipline at an advanced level of education**

While scientific literacy provides a foundation, pursuing science at an advanced level (e.g., higher education, research) requires specialized knowledge, advanced skills, and often a commitment to a scientific career. This goes beyond the general public understanding and engagement that defines scientific literacy. It represents a specialization, not a component of general literacy.

Determining the Component Not Usually Considered Part of Scientific Literacy

Scientific literacy focuses on equipping individuals with the necessary understanding of science to function effectively as citizens and individuals in a technologically advanced society. It emphasizes comprehension, critical evaluation, and informed decision-making related to science in daily life and public affairs. In contrast, the capacity to excel in advanced scientific study or a career in science is

a more specialized outcome. While scientific literacy might encourage interest in science, the high-level academic and professional skills required for advanced study are distinct from the broader definition of literacy.

Therefore, the ability to pursue science at an advanced educational level is the factor that is not typically considered a core component of general scientific literacy.

91. Answer: a

Explanation:

गद्यांश का विश्लेषण

यह गद्यांश मानव स्वभाव की दो बुनियादी ज़रूरतों या प्रवृत्तियों के बारे में बताता है। गद्यांश के अनुसार, पहली मूल प्रवृत्ति यह है कि मनुष्य चाहता है कि उसके गुणों को पहचाना जाए, उसकी प्रशंसा की जाए और उसका आदर किया जाए। गद्यांश में इसे इस तरह व्यक्त किया गया है: "लोग हमारे गुणों की कद्र करें, हमें दाद दें और हमारा आदर करें।"

दूसरी मूल प्रवृत्ति यह है कि मनुष्य चाहता है कि दूसरे लोग उससे प्रेम करें, उसके न होने पर उसे याद करें (उसका अभाव महसूस करें), और यह अनुभव करें कि वह उनके जीवन में एक महत्वपूर्ण स्थान रखता है। गद्यांश इसे ऐसे बताता है: "हमसे प्रेम करें, हमारा अभाव महसूस करें, उनके जीवन में हम कुछ महत्व रखते हैं, ऐसा अनुभव करें।"

गद्यांश यह भी स्पष्ट करता है कि चाहे कोई व्यक्ति बाहरी तौर पर कितना भी आत्मविश्वासी क्यों न लगे, वह आंतरिक रूप से दूसरों से प्रशंसा, प्रोत्साहन और स्नेह पाने की इच्छा रखता है। दूसरों की भावनाओं को समझना, उनकी कद्र करना और उनके साथ सच्चाई व स्नेह से व्यवहार करना ही व्यवहार कुशलता है, जो सामाजिक जीवन में लोकप्रियता दिलाती है।

विकल्पों का मूल्यांकन

- **विकल्प 1:** "स्वयं की तारीफ़ सुनना तथा दूसरों द्वारा उनकी कमी महसूस होना"
यह विकल्प गद्यांश में बताई गई दोनों मूल प्रवृत्तियों से पूरी तरह मेल खाता है। 'स्वयं की तारीफ़ सुनना' पहली प्रवृत्ति (गुणों की कद्र और प्रशंसा) को दर्शाता है, और 'दूसरों द्वारा उनकी कमी महसूस होना' दूसरी प्रवृत्ति (प्रेम, महत्व और अभाव महसूस कराना) को दर्शाता है।

- **विकल्प 2:** "आत्मप्रशंसा में विमुग्ध रहना तथा दूसरों की निंदा करना"
गद्यांश में आत्मप्रशंसा (खुद की तारीफ) या दूसरों की निंदा करने की प्रवृत्ति का उल्लेख नहीं किया गया है। यह गद्यांश के मूल भाव से अलग है।
- **विकल्प 3:** "अपने गुणों की कद्र करवाना एवं दूसरों को प्रेम करना"
इसमें पहली बात ('अपने गुणों की कद्र करवाना') गद्यांश से मेल खाती है। हालाँकि, दूसरी बात ('दूसरों को प्रेम करना') गद्यांश में बताई गई दूसरी प्रवृत्ति से अलग है। गद्यांश यह नहीं कहता कि मनुष्य दूसरों को प्रेम करना चाहता है, बल्कि यह कि मनुष्य चाहता है कि दूसरे उससे प्रेम करें और उसके न होने पर उसे याद करें।
- **विकल्प 4:** "स्वयं की प्रशंसा सुनना और दूसरों की प्रशंसा करना"
इसमें पहली बात ('स्वयं की प्रशंसा सुनना') सही है। लेकिन दूसरी बात ('दूसरों की प्रशंसा करना') गद्यांश में बताई गई दूसरी मूल प्रवृत्ति के विपरीत है। गद्यांश दूसरों से प्रेम और महत्व पाने की इच्छा बताता है, न कि दूसरों की प्रशंसा करने की।

सही उत्तर का स्पष्टीकरण

गद्यांश के अनुसार, मनुष्य की दो मुख्य प्रवृत्तियाँ हैं: पहला, अपने गुणों के लिए दूसरों से प्रशंसा, दाद और आदर प्राप्त करना; और दूसरा, दूसरों से प्रेम पाना, उनके जीवन में अपना महत्व अनुभव कराना और उनके द्वारा अभाव महसूस किया जाना।

विकल्प 1, "स्वयं की तारीफ सुनना तथा दूसरों द्वारा उनकी कमी महसूस होना", इन दोनों प्रवृत्तियों का सबसे सटीक वर्णन करता है। यह गद्यांश में दी गई जानकारी के अनुरूप है, जहाँ मनुष्य की प्रशंसा और स्नेह की चाहत को दर्शाया गया है।

Your Personal Exams Guide

92. Answer: d

Explanation:

गद्यांश के आधार पर व्यवहार कुशलता का विश्लेषण

यह प्रश्न दिए गए गद्यांश के अनुसार 'व्यवहार कुशलता' (behavioral skill or tact) के तत्वों को समझने पर आधारित है। गद्यांश बताता है कि मनुष्य की दो मुख्य प्रवृत्तियाँ होती हैं: पहली, लोग हमारे गुणों की कद्र करें और हमारा आदर करें; दूसरी, लोग हमसे प्रेम करें और हमारे न होने पर हमारा अभाव महसूस करें। गद्यांश यह भी स्पष्ट करता है कि बाहरी तौर पर कितना भी आत्मविश्वासी व्यक्ति क्यों न दिखे, वह भीतर से प्रशंसा, प्रोत्साहन और स्नेह का भूखा होता है।

गद्यांश के अनुसार, व्यवहार कुशलता का अर्थ है दूसरों की भावनाओं को सही ढंग से समझना, उनकी कद्र करना, और उनके साथ सच्चाई और स्नेह का व्यवहार करना। इसी व्यवहार कुशलता से सामाजिक जीवन में लोकप्रियता प्राप्त होती है।

व्यवहार कुशलता के प्रमुख घटक

गद्यांश में व्यवहार कुशलता के लिए निम्नलिखित मुख्य बातों पर जोर दिया गया है:

- दूसरों की भावनाओं को ठीक-ठीक समझना।
- दूसरों के गुणों की कद्र करना (उनकी सराहना करना)।
- सच्चाई के साथ व्यवहार करना।
- स्नेह का व्यवहार करना।

इन तत्वों को अपनाने से व्यक्ति दूसरों के दिलों में जगह बना सकता है और लोकप्रिय बन सकता है।

विकल्पों का मूल्यांकन

आइए देखें कि दिए गए विकल्प गद्यांश में वर्णित व्यवहार कुशलता के घटकों से कैसे मेल खाते हैं:

विकल्प (Option)	गद्यांश के अनुसार प्रासंगिकता (Relevance According to Passage)
सम्मान करना (Option 1)	गद्यांश में स्पष्ट रूप से उल्लेख है कि मनुष्य दूसरों से 'आदर' चाहते हैं, और व्यवहार कुशलता में दूसरों की कद्र करना शामिल है। इसलिए, सम्मान करना व्यवहार कुशलता का एक हिस्सा है।
सच्चाई का साथ (Option 2)	गद्यांश में सीधे तौर पर 'सच्चाई और स्नेह का व्यवहार करना' व्यवहार कुशलता का एक महत्वपूर्ण अंग बताया गया है। अतः सच्चाई का साथ देना इसमें शामिल है।
स्नेहपूर्ण व्यवहार (Option 3)	गद्यांश में 'स्नेह का व्यवहार करना' व्यवहार कुशलता के लिए आवश्यक बताया गया है। इसलिए, स्नेहपूर्ण व्यवहार निश्चित रूप से इसका हिस्सा है।
उपहार देना (Option 4)	गद्यांश में कहीं भी 'उपहार देना' का उल्लेख व्यवहार कुशलता के तत्व के रूप में नहीं किया गया है। यद्यपि उपहार देना स्नेह या प्रशंसा व्यक्त करने का एक तरीका हो सकता है, लेकिन गद्यांश इसे व्यवहार कुशलता की परिभाषा में शामिल नहीं करता है। गद्यांश का जोर भावनात्मक सराहना, समझ और सच्चे व्यवहार पर है।

व्यवहार कुशलता में क्या शामिल नहीं है?

गद्यांश के विश्लेषण के आधार पर, यह स्पष्ट है कि सम्मान करना, सच्चाई का साथ देना और स्नेहपूर्ण व्यवहार करना - ये सभी व्यवहार कुशलता के महत्वपूर्ण पहलू हैं जैसा कि गद्यांश में बताया गया है। हालाँकि, 'उपहार देना' एक ऐसी क्रिया है जिसका गद्यांश में व्यवहार कुशलता के संदर्भ में कोई उल्लेख नहीं किया गया है। इसलिए, दिए गए विकल्पों में से, उपहार देना वह कार्य है जो गद्यांश के अनुसार व्यवहार कुशलता में शामिल नहीं है।

93. Answer: b

Explanation:

मानवीय प्रवृत्ति और सामाजिक लोकप्रियता

यह गद्यांश दो मुख्य मानवीय आवश्यकताओं पर प्रकाश डालता है। पहली, लोग चाहते हैं कि उनके गुणों को सराहा जाए, उन्हें सम्मान मिले और उनकी कद्र हो। दूसरी, वे चाहते हैं कि दूसरे उनसे प्रेम करें, उन्हें याद करें और उनके जीवन में एक महत्व महसूस करें। गद्यांश यह स्पष्ट करता है कि बाहरी आत्मविश्वास के बावजूद, हर व्यक्ति प्रशंसा, प्रोत्साहन और स्नेह का भूखा होता है। यदि आप दूसरों को प्रामाणिक रूप से यह दे सकें, तो आप उनके दिल के करीब पहुँच सकते हैं।

लोकप्रियता के लिए आवश्यक व्यवहार

गद्यांश के अनुसार, सामाजिक जीवन में लोकप्रियता हासिल करने की कुंजी 'व्यवहार कुशलता' में निहित है। इस व्यवहार कुशलता को दूसरों की भावनाओं को सही ढंग से समझने, उनकी कद्र करने और उनके साथ सच्चाई और स्नेह से पेश आने के रूप में परिभाषित किया गया है। ये गुण सामाजिक मेलजोल में सफलता के द्वार खोलते हैं।

विकल्पों का विश्लेषण

- दूसरों की सदा प्रशंसा करना: गद्यांश प्रशंसा के महत्व को स्वीकार करता है, लेकिन 'प्रामाणिक' प्रशंसा पर जोर देता है। केवल प्रशंसा करते रहना पर्याप्त नहीं है, और यह गद्यांश का मुख्य संदेश नहीं है।

- **दूसरों की भावनाओं को समझना:** यह विकल्प सीधे तौर पर गद्यांश के उस कथन से मेल खाता है जिसमें कहा गया है कि दूसरों की भावनाओं को ठीक-ठीक समझना ही व्यवहार कुशलता है और लोकप्रियता की कुंजी है।
- **दूसरों की सदा सेवा करना:** सेवा करना एक अच्छा गुण हो सकता है, लेकिन गद्यांश इसे सीधे तौर पर सामाजिक लोकप्रियता का मुख्य कारण नहीं बताता है। ध्यान भावनाओं को समझने और स्नेहपूर्ण व्यवहार पर है।
- **दूसरों का कभी विरोध न करना:** विरोध न करना शांति बनाए रखने में मदद कर सकता है, लेकिन यह लोगों के साथ गहरे संबंध बनाने या लोकप्रिय होने का सीधा तरीका नहीं है जैसा कि गद्यांश में बताया गया है।

निष्कर्ष: सामाजिक सफलता की कुंजी

गद्यांश स्पष्ट रूप से बताता है कि समाज में लोकप्रिय बनने के लिए सबसे महत्वपूर्ण कार्य है दूसरों की भावनाओं को गहराई से समझना। यह समझ सच्ची प्रशंसा और स्नेहपूर्ण व्यवहार का आधार बनती है, जो अंततः सामाजिक लोकप्रियता की ओर ले जाती है।

94. Answer: c

Explanation:

गद्यांश में प्रशंसा का महत्व

यह प्रश्न दिए गए हिंदी गद्यांश पर आधारित है और पूछता है कि गद्यांश के अनुसार **प्रशंसा** कैसी होनी चाहिए। गद्यांश मानव की दो मूल प्रवृत्तियों पर प्रकाश डालता है: एक यह कि लोग हमारे गुणों की कद्र करें और दूसरा यह कि लोग हमसे प्रेम करें और हमारे होने का महत्व महसूस करें। गद्यांश स्पष्ट रूप से बताता है कि जब कोई हमारे छोटे से छोटे कार्य की भी **सच्चे दिल से प्रशंसा** करता है, तो हमें बहुत खुशी मिलती है। यह भी बताया गया है कि बड़े से बड़ा आत्मविश्वासी व्यक्ति भी अंदर से प्रशंसा और स्नेह का भूखा होता है।

गद्यांश के अनुसार, प्रशंसा और स्नेह को **प्रामाणिकतापूर्वक** देना हमें दूसरों के दिल के करीब ले जाता है। व्यवहार कुशलता को दूसरों की भावनाओं को समझने, उनकी कद्र करने और उनके साथ **सच्चाई** और **स्नेह** से व्यवहार करने के रूप में परिभाषित किया गया है, और यही सामाजिक जीवन में लोकप्रियता की कुंजी है।

विकल्पों का विश्लेषण

विकल्प 1: केवल लोभी व्यक्ति चाहता है।

गद्यांश यह नहीं कहता कि केवल लोभी व्यक्ति ही प्रशंसा चाहता है। बल्कि, यह बताता है कि प्रशंसा की इच्छा एक सामान्य मानवीय प्रवृत्ति है, जो हर किसी में होती है, चाहे वह लोभी हो या न हो। गद्यांश कहता है, "ऊपर से कोई बड़ा आदमी कितना भी आत्मविश्वासी और आत्मसंतुष्ट क्यों न दिखाई दे, भीतर से वह हमारी आपकी तरह प्रशंसा का ... भूखा है।" इससे पता चलता है कि यह इच्छा सार्वभौमिक है, न कि केवल लोभी लोगों तक सीमित।

विकल्प 2: दूसरों को अहंकारी बनाती है।

गद्यांश प्रशंसा के सकारात्मक प्रभावों पर जोर देता है, जैसे कि खुशी मिलना और दूसरों के करीब आना। यह नहीं कहा गया है कि प्रशंसा व्यक्ति को अहंकारी बनाती है। हालाँकि यह स्वीकार किया गया है कि सलाह मांगने पर मन "फूल जाता है", लेकिन इसे अहंकार के बजाय महत्व महसूस करने से जोड़ा गया है। गद्यांश का मुख्य संदेश प्रशंसा के सकारात्मक उपयोग के बारे में है।

विकल्प 3: सच्चे हृदय से होनी चाहिए।

यह विकल्प गद्यांश के साथ पूरी तरह मेल खाता है। गद्यांश में स्पष्ट रूप से उल्लेख किया गया है: "आपके ज़रा-से भी कार्य की यदि किसी ने सच्चे दिल से प्रशंसा की तो आपका दिल कैसा खिल उठता है।" यह वाक्य सीधे तौर पर इंगित करता है कि प्रशंसा सच्चे हृदय से की जानी चाहिए ताकि उसका सकारात्मक प्रभाव पड़े और व्यक्ति को अच्छा महसूस हो।

विकल्प 4: व्यक्ति के सामने कभी न करें।

यह विकल्प गद्यांश के संदेश के विपरीत है। गद्यांश प्रशंसा करने के महत्व और उसके सकारात्मक परिणामों पर जोर देता है। यह बताता है कि कैसे सच्ची प्रशंसा दूसरों को करीब लाती है। इसलिए, यह कहना कि प्रशंसा कभी न करें, गद्यांश के मूल भाव के विरुद्ध है।

निष्कर्ष: गद्यांश के अनुसार प्रशंसा

गद्यांश के विश्लेषण से यह स्पष्ट है कि प्रशंसा की जानी चाहिए, और यह तब सबसे प्रभावी होती है जब यह सच्चे हृदय से, यानी ईमानदारी और स्नेह के साथ की जाती है। गद्यांश इसी बात पर बल देता है कि ऐसी प्रशंसा लोगों को खुशी देती है और रिश्तों को मजबूत करती है। इसलिए, सबसे उपयुक्त विकल्प वह है जो इस बात पर जोर देता है कि प्रशंसा सच्चे हृदय से होनी चाहिए।

95. Answer: a

Explanation:

मानव की सामान्य जरूरतें: गद्यांश पर आधारित विश्लेषण

यह प्रश्न गद्यांश में वर्णित मनुष्य की मूल प्रवृत्तियों और आवश्यकताओं से संबंधित है। गद्यांश स्पष्ट रूप से बताता है कि मनुष्य की दो मुख्य इच्छाएँ होती हैं। पहली, लोग उसके गुणों को सराहें, उसे स्वीकार करें और उसका सम्मान करें। दूसरी, लोग उससे प्रेम करें, उसके न होने पर उसे याद करें और यह महसूस कराएं कि उसका जीवन में कोई महत्व है।

गद्यांश में वर्णित मुख्य मानवीय आवश्यकताएँ

गद्यांश के अनुसार, मनुष्य की मुख्य जरूरतें निम्नलिखित हैं:

- **कद्र और सम्मान:** मनुष्य चाहता है कि उसके गुणों को पहचाना जाए, उसकी प्रशंसा की जाए (जैसे, 'गुणों की कद्र', 'दाद देना', 'आदर करना', 'प्रशंसा')। किसी के द्वारा की गई सच्ची प्रशंसा से हृदय प्रसन्न होता है।
- **प्रेम और अपनापन:** मनुष्य यह भी चाहता है कि लोग उससे प्रेम करें, उसे याद करें (उसका 'अभाव महसूस करें') और यह महसूस कराएं कि वह महत्वपूर्ण है। जब कोई सलाह के लिए आता है, तो यह अहसास होता है कि व्यक्ति महत्वपूर्ण है।
- **प्रोत्साहन और स्नेह:** गद्यांश यह भी संकेत देता है कि हर व्यक्ति, चाहे वह कितना भी आत्मविश्वासी दिखे, प्रशंसा और प्रोत्साहन का भूखा होता है। दूसरों के साथ सच्चाई और स्नेह का व्यवहार करना व्यवहार कुशलता की कुंजी है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें कि कौन सा मनुष्य की सामान्य जरूरतों का सबसे अच्छा वर्णन करता है, जैसा कि गद्यांश में बताया गया है:

- **विकल्प 1: प्रेम, प्रशंसा, प्रोत्साहन:** यह विकल्प सीधे गद्यांश में बताई गई मानवीय आवश्यकताओं से मेल खाता है। 'प्रेम' दूसरी मूल प्रवृत्ति (प्रेम करें, स्नेह) से संबंधित है। 'प्रशंसा' पहली प्रवृत्ति (गुणों की कद्र, दाद, आदर, प्रशंसा) से संबंधित है। 'प्रोत्साहन' का भी उल्लेख है कि मनुष्य इसकी इच्छा रखता है।

- **विकल्प 2: स्नेह, सामान, सरलता:** इसमें 'स्नेह' शामिल है, जो सही है, लेकिन 'सामान' (वस्तुएँ) या 'सरलता' (simplicity) का उल्लेख गद्यांश में मुख्य मानवीय जरूरत के रूप में नहीं किया गया है।
- **विकल्प 3: सम्मान, सामान, सन्निध्य:** 'सम्मान' गद्यांश से मेल खाता है, लेकिन 'सामान' और 'सन्निध्य' (proximity/company) उतने प्रासंगिक नहीं हैं जितने प्रेम और प्रशंसा।
- **विकल्प 4: फल, फूल, फर्ज़:** ये शब्द गद्यांश में वर्णित मनोवैज्ञानिक या भावनात्मक जरूरतों से बिल्कुल भी संबंधित नहीं हैं।

निष्कर्ष

गद्यांश के आधार पर, मनुष्य की सामान्य जरूरतें केवल भौतिक वस्तुएँ नहीं, बल्कि भावनात्मक और मनोवैज्ञानिक होती हैं। उसे दूसरों से प्रेम, प्रशंसा और प्रोत्साहन की आवश्यकता होती है। यह तत्व उसे महत्वपूर्ण और मूल्यवान महसूस कराते हैं, जो सामाजिक जीवन में सफलता के लिए आवश्यक हैं। इसलिए, 'प्रेम, प्रशंसा, प्रोत्साहन' मनुष्य की सामान्य जरूरतों का सबसे सटीक प्रतिनिधित्व करते हैं।

96. Answer: a

Explanation:

मनुष्य की खुशी के कारण: गद्यांश विश्लेषण

यह प्रश्न दिए गए हिंदी गद्यांश पर आधारित है, जो मानवीय स्वभाव और खुशी के स्रोतों पर प्रकाश डालता है। गद्यांश बताता है कि मनुष्य की दो प्रमुख प्रवृत्तियाँ होती हैं: एक तो यह कि लोग उसके गुणों की **कद्र** करें, उसे **दाद** दें और उसका **आदर** करें, और दूसरी यह कि लोग उससे **प्रेम** करें, उसके **अभाव** को महसूस करें और उसके जीवन में अपना **महत्व** समझें।

गद्यांश में वर्णित मानवीय भावनाएँ

गद्यांश के अनुसार, मनुष्य की बुनियादी इच्छाएँ इस प्रकार हैं:

- दूसरों से अपने गुणों के लिए प्रशंसा और सम्मान प्राप्त करना।
- दूसरों के जीवन में प्रिय बनना और महत्वपूर्ण महसूस करना।

जब कोई व्यक्ति हमारे कार्यों की सच्ची **प्रशंसा** करता है, तो हमें खुशी मिलती है, जैसा कि गद्यांश में कहा गया है, "आपका दिल कैसा खिल उठता है।" इसी तरह, जब लोग हमें स्नेह और प्रोत्साहन देते हैं, तो हमें

अच्छा लगता है। गद्यांश यह भी बताता है कि आत्मविश्वासी दिखने वाले लोग भी भीतर से प्रशंसा और स्नेह के भूखे होते हैं।

सलाह मांगने से मिलने वाली खुशी

गद्यांश विशेष रूप से इस बात पर जोर देता है कि जब कोई व्यक्ति किसी से सलाह माँगने आता है, तो उसे खुशी और गर्व महसूस होता है। पाठ में स्पष्ट रूप से उल्लेख किया गया है: "कोई आपसे सलाह माँगने आता है तो आपका मन कैसे फूल जाता है।" यह दर्शाता है कि सलाह माँगना व्यक्ति को मूल्यवान और योग्य महसूस कराता है, जो सीधे तौर पर खुशी से जुड़ा है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों पर विचार करें:

- जब उनसे कोई सलाह माँगता है : यह गद्यांश के उस भाग से मेल खाता है जहाँ कहा गया है कि सलाह माँगने पर मन प्रसन्न हो जाता है। यह मनुष्य की प्रशंसा और महत्व महसूस करने की प्रवृत्ति को संतुष्ट करता है।
- जब उन्हें कोई उपहार देता है : गद्यांश में उपहार देने या प्राप्त करने का उल्लेख खुशी के स्रोत के रूप में नहीं किया गया है।
- जब उन्हें कोई अभाव देता है : गद्यांश दूसरों द्वारा किसी के अभाव को महसूस करने की बात करता है, न कि किसी को अभाव देने से खुशी मिलने की।
- जब उन्हें कार्य नहीं करना पड़ता : गद्यांश में ऐसा कोई संकेत नहीं है कि कार्य न करने से मनुष्य को खुशी मिलती है।

इसलिए, गद्यांश के आधार पर, मनुष्य को तब खुशी मिलती है जब उससे कोई सलाह माँगता है, क्योंकि यह उसे महत्वपूर्ण और मूल्यवान महसूस कराता है।

97. Answer: c

Explanation:

यह समाधान दिए गए गद्यांश और बहुविकल्पीय प्रश्न (MCQ) का विस्तृत विश्लेषण प्रस्तुत करता है। हम प्रश्न के मुख्य बिंदुओं, गद्यांश के संदर्भ और प्रत्येक विकल्प की प्रासंगिकता पर चर्चा करेंगे।

प्रश्न का विश्लेषण: 'दिल कैसा खिल उठता है' का भाव

प्रश्न गद्यांश में प्रयुक्त एक मुहावरेदार अभिव्यक्ति, 'दिल कैसा खिल उठता है', के अर्थ को समझने पर केंद्रित है। गद्यांश बताता है कि जब कोई व्यक्ति हमारे काम की सच्चे दिल से प्रशंसा करता है, तो हमारा 'दिल खिल उठता है'। हमें इस मुहावरे के छिपे हुए अर्थ को पहचानना है, जैसा कि गद्यांश के संदर्भ में बताया गया है।

गद्यांश का संदर्भ समझना

गद्यांश मानव की दो बुनियादी इच्छाओं पर प्रकाश डालता है:

- दूसरों से प्रशंसा, कद्र और आदर प्राप्त करना।
- दूसरों से प्रेम पाना और यह महसूस करना कि हमारा उनके जीवन में कोई महत्व है।

गद्यांश यह भी बताता है कि चाहे कोई व्यक्ति बाहरी रूप से कितना भी आत्मविश्वासी क्यों न दिखे, वह आंतरिक रूप से प्रशंसा और स्नेह का भूखा होता है। जब हमें किसी कार्य के लिए सच्ची प्रशंसा मिलती है, तो हमारी भावनाएं सकारात्मक रूप से प्रभावित होती हैं, जिसका वर्णन 'दिल खिल उठना' के रूप में किया गया है।

'दिल कैसा खिल उठता है' का अर्थ

जब गद्यांश कहता है कि 'आपका दिल कैसा खिल उठता है', तो इसका तात्पर्य है कि प्रशंसा प्राप्त होने पर व्यक्ति को अत्यधिक खुशी और आनंद का अनुभव होता है। यह एक रूपक (metaphor) है जो हृदय में उत्पन्न होने वाली सकारात्मक और उत्फुल्ल भावना को दर्शाता है। यह खुशी की एक तीव्र अनुभूति है, जो किसी की भावनाओं को सकारात्मक रूप से उत्तेजित करती है।

विकल्पों का मूल्यांकन

आइए अब दिए गए विकल्पों का मूल्यांकन करें:

- विकल्प 1: फूल जाना

हालांकि 'फूल जाना' कभी-कभी अत्यधिक खुशी या गर्व का संकेत दे सकता है, लेकिन यहाँ 'खिल उठना' शब्द का प्रयोग अधिक सूक्ष्म और सकारात्मक भावना को दर्शाता है। 'फूल जाना' कभी-कभी अहंकार या आत्म-प्रसार का भी संकेत दे सकता है, जो गद्यांश के मुख्य भाव से थोड़ा भिन्न है।

- विकल्प 2: हृदय की विशालता

यह विकल्प गद्यांश के संदर्भ से बिल्कुल अलग है। 'हृदय की विशालता' उदारता या क्षमाशीलता जैसी विशेषताओं को संदर्भित करती है, न कि प्रशंसा मिलने पर होने वाली अनुभूति को।

- **विकल्प 3: प्रसन्न होना**

यह विकल्प सीधे तौर पर उस सकारात्मक भावना को व्यक्त करता है जो किसी की प्रशंसा मिलने पर महसूस होती है। 'खिल उठना' का अर्थ है बहुत खुश या प्रसन्न हो जाना। यह गद्यांश के भाव के सबसे करीब है, जहाँ सच्ची प्रशंसा मिलने पर व्यक्ति को आनंद की अनुभूति होती है।

- **विकल्प 4: अहंकार होना**

जबकि प्रशंसा से कभी-कभी अहंकार बढ़ सकता है, 'दिल खिल उठना' का मुख्य भाव खुशी और प्रसन्नता है, न कि केवल अहंकार। गद्यांश प्रशंसा को एक सकारात्मक मानवीय आवश्यकता के रूप में प्रस्तुत करता है, और 'खिल उठना' इस सकारात्मक प्रतिक्रिया को दर्शाता है।

निष्कर्ष

गद्यांश के संदर्भ में, जब किसी व्यक्ति को उसकी प्रशंसा या किसी कार्य की सराहना मिलती है, तो उसे जो खुशी और आनंद महसूस होता है, उसे 'दिल खिल उठना' कहा गया है। इसलिए, सबसे उपयुक्त अर्थ 'प्रसन्न होना' है।

सही विकल्प का चयन:

दिए गए विकल्पों में से, 'प्रसन्न होना' वह भाव है जो 'दिल कैसा खिल उठता है' के अर्थ को गद्यांश के संदर्भ में सबसे सटीकता से दर्शाता है।

98. Answer: c

Explanation:

गद्यांश के आधार पर मानव प्रवृत्तियों का विश्लेषण

यह प्रश्न दिए गए हिंदी गद्यांश में वर्णित मानव की दो मूल प्रवृत्तियों के बारे में है। हमें गद्यांश को ध्यान से पढ़कर समझना होगा कि ये प्रवृत्तियाँ किन लोगों में पाई जाती हैं।

गद्यांश में वर्णित मानव की मूल प्रवृत्तियाँ

गद्यांश स्पष्ट रूप से बताता है कि मानव की दो बुनियादी इच्छाएँ या प्रवृत्तियाँ होती हैं:

- **पहला:** दूसरों से अपने गुणों के लिए **कद्र, दाद** (तारीफ) और **आदर** पाना।
- **दूसरा:** दूसरों से **प्रेम** पाना, उनके जीवन में अपने **अभाव** (कमी) को महसूस करवाना और यह अनुभव करना कि हम उनके जीवन में **महत्व** रखते हैं।

गद्यांश इस बात पर भी जोर देता है कि ये प्रवृत्तियाँ केवल कुछ खास लोगों तक सीमित नहीं हैं। यहाँ तक कि जो लोग बाहर से बहुत **आत्मविश्वासी** और संतुष्ट दिखते हैं, वे भी अंदर से प्रशंसा और स्नेह के भूखे होते हैं, ठीक वैसे ही जैसे आम इंसान। गद्यांश कहता है, "ऊपर से कोई बड़ा आदमी कितना भी आत्मविश्वासी और आत्मसंतुष्ट क्यों न दिखाई दे, भीतर से वह हमारी आपकी तरह प्रशंसा का प्रोत्साहन का, स्नेह का भूखा है।"

विकल्पों का मूल्यांकन

अब हम दिए गए विकल्पों को गद्यांश के आधार पर परखते हैं:

- **विकल्प 1: ऊँचे पर आसीन लोगों में होती हैं** - गद्यांश में "बड़े आदमी" का उल्लेख है, लेकिन यह नहीं कहा गया है कि ये प्रवृत्तियाँ केवल उन्हीं में होती हैं। वास्तव में, गद्यांश यह दर्शाने के लिए उनका उदाहरण देता है कि ये प्रवृत्तियाँ सार्वभौमिक हैं।
- **विकल्प 2: अभावों से ग्रस्त लोगों में होती हैं** - गद्यांश इन प्रवृत्तियों का संबंध किसी प्रकार के अभाव या गरीबी से नहीं जोड़ता है।
- **विकल्प 3: सभी मनुष्यों में होती हैं** - यह विकल्प गद्यांश के मुख्य संदेश से मेल खाता है। गद्यांश बताता है कि प्रशंसा और स्नेह की इच्छा एक सामान्य मानवीय आवश्यकता है, जो "हमारी आपकी तरह" सभी में पाई जाती है।
- **विकल्प 4: आत्मविश्वास से युक्त लोगों में होती है** - गद्यांश यह बताता है कि आत्मविश्वास से भरपूर लोग भी इन भावनाओं (प्रशंसा, स्नेह) के भूखे होते हैं, न कि यह कि ये प्रवृत्तियाँ केवल उन्हीं में होती हैं। इसलिए, यह कहना गलत होगा कि ये केवल आत्मविश्वास से युक्त लोगों में ही होती हैं।

निष्कर्ष

गद्यांश के अनुसार, प्रशंसा पाने की इच्छा और प्रेम व महत्व महसूस करने की इच्छा ये दो मूल प्रवृत्तियाँ मानव स्वभाव का हिस्सा हैं और ये **सभी मनुष्यों** में पाई जाती हैं, चाहे उनकी सामाजिक स्थिति या आत्मविश्वास का स्तर कुछ भी हो।

Explanation:

दाद देना का गद्यांश में अर्थ समझना

इस प्रश्न का उत्तर देने के लिए, हमें दिए गए गद्यांश को ध्यान से पढ़ना होगा और यह समझना होगा कि इसमें 'दाद देना' शब्द का क्या अर्थ है। गद्यांश मानव की दो मुख्य इच्छाओं या प्रवृत्तियों के बारे में बात करता है: पहली, लोग हमारे गुणों की कद्र करें, हमें दाद दें और हमारा आदर करें; दूसरी, लोग हमसे प्रेम करें और हमारे न होने पर हमें याद करें।

गद्यांश यह भी बताता है कि जब कोई हमारे काम की सच्ची प्रशंसा करता है, तो हमें बहुत खुशी मिलती है। इसी तरह, जब कोई हमसे सलाह मांगता है, तो हमें अच्छा महसूस होता है। यह बताता है कि सभी लोग, चाहे वे बाहर से कितने भी आत्मविश्वासी दिखें, प्रशंसा और स्नेह के भूखे होते हैं। गद्यांश के अनुसार, दूसरों की भावनाओं को समझना, उनकी कद्र करना और उनके साथ स्नेह से पेश आना ही व्यवहार कुशलता है, जिससे लोकप्रियता मिलती है।

'दाद देना' के अर्थ की व्याख्या

गद्यांश में 'दाद देना' का प्रयोग उन कार्यों के संदर्भ में किया गया है जो दूसरों को प्रसन्न करते हैं और उन्हें अच्छा महसूस कराते हैं। जब कहा गया है कि लोग हमारे गुणों की कद्र करें, हमें दाद दें और आदर करें, तो इसका मतलब है कि लोग हमारे अच्छे गुणों और कामों को पहचानें और उनकी तारीफ करें। यह बात तब और स्पष्ट हो जाती है जब गद्यांश कहता है कि सच्ची प्रशंसा से दिल खिल उठता है। इससे यह पता चलता है कि 'दाद देना' का संबंध सीधे तौर पर किसी के काम या गुणों की तारीफ या प्रशंसा करने से है।

दिए गए विकल्पों का विश्लेषण

अब हम दिए गए विकल्पों को गद्यांश के संदर्भ में देखते हैं:

- **भेंट देना:** इसका मतलब होता है उपहार देना। गद्यांश में कहीं भी 'दाद देना' का मतलब उपहार देने से नहीं जोड़ा गया है।
- **प्रशंसा करना:** गद्यांश में 'दाद देना' को 'कद्र करना' और 'आदर करना' के साथ इस्तेमाल किया गया है, और यह भी बताया गया है कि सच्ची 'प्रशंसा' से खुशी मिलती है। यह स्पष्ट रूप से दर्शाता है कि 'दाद देना' का अर्थ 'प्रशंसा करना' है।
- **सांत्वना देना:** इसका मतलब होता है किसी को दिलासा देना, खासकर जब वे दुखी हों। गद्यांश में 'दाद देना' का प्रयोग सकारात्मक प्रतिक्रिया के रूप में हुआ है, न कि सहानुभूति या दिलासा देने के अर्थ में।

- **सम्मानित करना:** इसका अर्थ है आदर देना। हालाँकि प्रशंसा करना भी सम्मान का एक हिस्सा है, गद्यांश में 'आदर करना' का उल्लेख अलग से किया गया है, और 'दाद देना' को विशेष रूप से 'प्रशंसा' से जोड़ा गया है। इसलिए, 'प्रशंसा करना' सबसे सटीक अर्थ है।

निष्कर्ष

गद्यांश के आधार पर, 'दाद देना' का सबसे उपयुक्त अर्थ '**प्रशंसा करना**' है। यह वह क्रिया है जिससे लोग दूसरों के अच्छे काम और गुणों को स्वीकार करते हैं और उनकी तारीफ करते हैं, जिससे उन्हें खुशी और महत्व का एहसास होता है।

100. Answer: a

Explanation:

काव्यांश में 'बंदनी' शब्द का विश्लेषण

यह प्रश्न दिए गए हिंदी काव्यांश पर आधारित है। काव्यांश में कवि अपनी मातृभूमि को संबोधित करते हुए उसकी मुक्ति की बात कर रहा है। प्रश्न पूछता है कि कविता में मातृभूमि के लिए कौन सा शब्द प्रयोग किया गया है।

मातृभूमि का संबोधन और स्थिति

काव्यांश की पहली पंक्ति पर ध्यान केंद्रित करें: "बंदनी जननी! तुझे हम मुक्त कर देंगे।"

इस पंक्ति में, कवि अपनी 'जननी' को संबोधित कर रहा है। 'जननी' शब्द का प्रयोग यहाँ मातृभूमि के लिए किया गया है, जो माँ के समान पूजनीय है।

इसके साथ ही, 'जननी' को 'बंदनी' विशेषण दिया गया है, जिसका अर्थ है 'कैद में' या 'बंधन में जकड़ी हुई'। यह मातृभूमि की उस समय की दयनीय और पराधीन स्थिति को दर्शाता है जिसे कवि और उसके साथी बदलना चाहते हैं।

विकल्पों का मूल्यांकन

आइए दिए गए विकल्पों की समीक्षा करें:

- 1. **बंदनी**: यह शब्द काव्यांश में मातृभूमि ('जननी') की स्थिति का वर्णन करता है - कि वह कैद में है। कवि इसी स्थिति से उसे मुक्त करने का संकल्प लेता है।
- 2. **उषा**: 'उषा' का अर्थ भोर या सवेरा है। यह शब्द काव्यांश में भविष्य के परिवर्तन के प्रतीक के रूप में आता है ("तिमिर को अब हम उषा आरक्त कर देंगे।"), न कि सीधे मातृभूमि के लिए।
- 3. **जननी**: यह शब्द सीधे तौर पर मातृभूमि को संबोधित करने के लिए प्रयोग किया गया है, जो माँ के समान है।
- 4. **श्रृंखलाएँ**: 'श्रृंखलाएँ' का अर्थ जंजीरें हैं। ये वे बंधन हैं जिन्हें पिघलाने या तोड़ने की बात की गई है। यह शब्द मातृभूमि की मुक्ति के संदर्भ में आता है, पर स्वयं मातृभूमि के लिए प्रयुक्त नहीं हुआ है।

निष्कर्ष

काव्यांश का केंद्रीय भाव मातृभूमि को उसकी गुलामी या पराधीनता ('बंदनी' अवस्था) से मुक्त कराना है। यद्यपि 'जननी' शब्द मातृभूमि को सीधे संबोधित करता है, 'बंदनी' शब्द उस स्थिति पर जोर देता है जिसे बदलने का कवि का लक्ष्य है। प्रश्न यह पूछता है कि मातृभूमि के लिए कौन सा शब्द आया है। इस संदर्भ में, 'बंदनी' शब्द मातृभूमि की उस अवस्था को दर्शाता है जिस पर काव्यांश केंद्रित है, यानी एक कैद में पड़ी हुई मातृभूमि जिसे मुक्त किया जाना है। इसलिए, काव्यांश के भावार्थ के अनुसार 'बंदनी' शब्द को यहाँ मातृभूमि के संदर्भ में महत्वपूर्ण माना गया है।

101. Answer: b

Explanation:

काव्यांश का केंद्रीय भाव: स्वतंत्रता की पुकार

यह काव्यांश एक माँ (जननी) को संबोधित है, जिसे 'बंदनी' यानी बंदी या गुलाम कहा गया है। कवि और उसके साथी माँ को मुक्त करने का संकल्प लेते हैं। वे कहते हैं कि उनके हृदय की पीड़ा (ताप) से वे सारी जंजीरें (श्रृंखलाएँ) पिघला देंगे। वे बाधाओं और oppressions (लौह की भित्तियाँ) को धूल में मिला देंगे। अपने लहू (रक्त) का बलिदान देकर वे एक नए युग का सूत्रपात करेंगे, जैसे खूनी लाल बादल छा जाते हैं। इस तरह वे अंधकार (तिमिर) को चीरकर एक नई सुबह (उषा) लाएंगे, जो संघर्ष और बलिदान के कारण लालिमा लिए होगी। अंत में, वे फिर दोहराते हैं कि वे अपनी माँ को आज़ाद कराएंगे।

मुख्य विचार:

- "बंदनी जननी! तुझे हम मुक्त कर देंगे।" - यह पंक्ति सीधे तौर पर मां, यानी मातृभूमि को गुलामी से छुड़ाने की इच्छा व्यक्त करती है।
- "श्रृंखलाएँ ताप से उर की गलेंगी" और "भित्तियाँ यह लौह की रज में मिलेंगी" - ये पंक्तियाँ oppressions और बाधाओं को खत्म करने के लिए तीव्र इच्छा और बलिदान के लिए तत्परता को दर्शाती हैं।
- "रक्त से अपने खिलाकर लाल बादल" और "तिमिर को अब हम उषा आरक्त कर देंगे।" - ये पंक्तियाँ स्वतंत्रता प्राप्ति के लिए किए जाने वाले संघर्ष, बलिदान (रक्त) और उसके परिणामस्वरूप आने वाले परिवर्तन (लाल बादल, आरक्त उषा) का प्रतीक हैं।

विकल्पों का विस्तृत विश्लेषण

आइए देखें कि दिए गए विकल्पों में से कौन सा काव्यांश के मुख्य स्वर को सबसे अच्छे से दर्शाता है:

- विकल्प 1: विपन्नता को संपन्नता में परिवर्तित करना

हालांकि स्वतंत्रता मिलने के बाद संपन्नता आ सकती है, पर काव्यांश का मुख्य जोर आर्थिक सुधार या संपन्नता पर नहीं, बल्कि गुलामी से मुक्ति पर है। 'बंदनी जननी' और 'मुक्त कर देंगे' जैसे शब्द सीधे तौर पर स्वतंत्रता की बात करते हैं।

- विकल्प 2: परतंत्र भारत को स्वतंत्र करना

यह विकल्प काव्यांश के मूल भाव से पूरी तरह मेल खाता है। 'बंदनी जननी' का अर्थ है गुलाम मां (मातृभूमि)। कवि उसे 'मुक्त कर देंगे' का संकल्प ले रहे हैं। लोहे की दीवारें तोड़ना, जंजीरें पिघलाना, ये सब परतंत्रता की बेड़ियों को तोड़ने के प्रतीक हैं। यह स्पष्ट रूप से स्वतंत्रता संग्राम की भावना को दर्शाता है।

- विकल्प 3: आसमान को लालिमा से भर देना

काव्यांश में 'लाल बादल' और 'आरक्त उषा' का उल्लेख है, लेकिन यह एक अलंकारिक प्रयोग है। यह बलिदान के बाद आने वाले नए सवेरे या क्रांति का प्रतीक है, न कि केवल आसमान का रंग बदलने का शाब्दिक वर्णन। इसलिए, यह मुख्य स्वर नहीं है।

- विकल्प 4: कठोर परिश्रम से लोहे को गलाना

कविता में लोहे की दीवारों का उल्लेख है, लेकिन उन्हें पिघलाने का कारण सिर्फ 'कठोर परिश्रम' नहीं, बल्कि हृदय की 'ऊष्मा' (ताप) और 'रक्त' (बलिदान) बताया गया है। मुख्य लक्ष्य लोहे को पिघलाना नहीं, बल्कि उस लोहे की दीवारों से मुक्त होना है।

निष्कर्ष: कविता का मुख्य स्वर

पूरे काव्यांश का केंद्रीय संदेश अपनी 'बंदनी' मां (मातृभूमि) को oppressions और बंधनों से मुक्त कराने का संकल्प है। इसमें बलिदान और संघर्ष की भावना निहित है, जिसका अंतिम लक्ष्य स्वतंत्रता प्राप्ति है। इसलिए, काव्यांश का मुख्य स्वर परतंत्र भारत को स्वतंत्र करना है।

सही विकल्प है: 2. परतंत्र भारत को स्वतंत्र करना

102. Answer: a

Explanation:

काव्यांश का भावार्थ

प्रस्तुत काव्यांश एक वीर और देशभक्ति की भावना से ओत-प्रोत है। कवि अपनी 'जननी' (माँ, यहाँ संभवतः मातृभूमि के संदर्भ में) को संबोधित करते हुए कहते हैं कि वे उसे बंधनों से मुक्त कर देंगे। कवि का मानना है कि हृदय की तीव्र इच्छा या भावना ('उर की') की गर्मी ('ताप') से ये लोहे की जंजीरें ('श्रृंखलाएँ') पिघल जाएँगी और धूल में मिल जाएँगी। अपने रक्त से वे अंधकार ('तिमिर') को चीरकर एक नई सुबह ('उषा') ला देंगे। यह पंक्तियाँ एक क्रांतिकारी संघर्ष और मातृभूमि को आजाद कराने के दृढ़ संकल्प को दर्शाती हैं।

'ताप' शब्द का अर्थ विश्लेषण

इस काव्यांश की पंक्ति 'श्रृंखलाएँ ताप से उर की गलेंगी' में 'ताप' शब्द का प्रयोग लाक्षणिक अर्थ में हुआ है। यहाँ 'ताप' का अर्थ केवल गर्मी या जलन नहीं है, बल्कि यह हृदय में उत्पन्न होने वाली एक तीव्र, उग्र भावना का प्रतीक है। यह भावना किस प्रकार की है, यह समझने के लिए हमें काव्यांश के पूरे संदर्भ को देखना होगा। कवि अपनी जननी को मुक्त कराने की बात कर रहे हैं, जो कि एक अत्यंत महत्वपूर्ण और भावनात्मक कार्य है। इस कार्य के लिए हृदय में जो जुनून, जो उबलता हुआ जोश और जो तीव्र इच्छाशक्ति होती है, उसे ही यहाँ 'ताप' कहा गया है।

विकल्पों का मूल्यांकन

आइए दिए गए विकल्पों पर विचार करें:

- **देशभक्ति का प्रबल भाव:** यह विकल्प काव्यांश के संदर्भ में सबसे सटीक बैठता है। मातृभूमि को स्वतंत्र कराने की तीव्र इच्छा, उसके प्रति गहरा प्रेम और समर्पण ही 'देशभक्ति का प्रबल भाव' है। यही वह 'ताप' है जो हृदय से उत्पन्न होकर बंधनों को पिघलाने की शक्ति रखता है।
- **हृदय का घोर तप करना:** 'तप' का अर्थ साधना या कठिन परिश्रम हो सकता है, लेकिन यहाँ 'ताप' से आशय केवल तपस्या नहीं, बल्कि एक सक्रिय, उग्र और जलता हुआ जोश है जो क्रांति का मार्ग प्रशस्त करे।
- **बंधन की बेड़ियों को समझना:** 'ताप' का अर्थ केवल बेड़ियों को समझना नहीं है। यह उन बेड़ियों को तोड़ने के लिए आवश्यक आंतरिक शक्ति या भावना को दर्शाता है।
- **लोहे को बहुत गर्म करना:** यह 'ताप' का शाब्दिक अर्थ है, लेकिन काव्यांश में इसका प्रयोग प्रतीकात्मक रूप से हुआ है। हृदय की भावनाओं के संदर्भ में लोहे को गर्म करने का अर्थ यहाँ प्रयोज्य नहीं है।

निष्कर्ष

पंक्ति 'श्रृंखलाएँ ताप से उर की गलेंगी' में 'ताप' उस तीव्र, उबलती हुई भावना का प्रतीक है जो हृदय से उत्पन्न होती है और जिसका उद्देश्य बंधनों को तोड़ना है। यह भावना मातृभूमि के प्रति प्रेम, स्वतंत्रता की चाह और अत्याचारियों के विरुद्ध संघर्ष का जोश है, जिसे 'देशभक्ति का प्रबल भाव' के रूप में सबसे अच्छे से व्यक्त किया जा सकता है।

103. Answer: c

Explanation:

काव्यांश का विश्लेषण

आइए प्रस्तुत काव्यांश पर ध्यान केंद्रित करें और उसके भावार्थ को समझें। काव्यांश इस प्रकार है:

बंदनी जननी! तुझे
हम मुक्त कर देंगे।
श्रृंखलाएँ ताप से उर की गलेंगी
भित्तियाँ यह लौह की रज में मिलेंगी
रक्त से अपने खिलाकर लाल बादल
तिमिर को अब हम उषा आरक्त कर देंगे।
तुझे हम मुक्त कर देंगे।

इस काव्यांश में कवि अपनी 'बंदनी जननी' अर्थात् दासता या बंधन में जकड़ी हुई मातृभूमि को स्वतंत्र कराने का दृढ़ संकल्प व्यक्त कर रहा है। कवि और उनके साथी मिलकर बाधाओं (शृंखलाएँ, लौह की भित्तियाँ) को तोड़ने और वर्तमान अंधकारमय स्थिति ('तिमिर') को बदलकर स्वतंत्रता के नए प्रभात ('उषा') को लाने का वादा करते हैं। यह परिवर्तन उनके बलिदान (रक्त) से संभव होगा।

'तिमिर' शब्द का प्रतीकात्मक अर्थ समझना

'तिमिर' शब्द का सीधा अर्थ 'अंधकार' होता है। यह प्रकाश का विरोधी है। किसी भी कविता या साहित्यिक रचना में, शब्दों के केवल शाब्दिक अर्थ ही नहीं होते, बल्कि वे गहरे प्रतीकात्मक अर्थ भी रखते हैं। हमें इस काव्यांश के संदर्भ में 'तिमिर' के इसी प्रतीकात्मक अर्थ को खोजना है।

कविता के संदर्भ में 'तिमिर' का अर्थ

कवि का लक्ष्य 'बंदनी जननी' को मुक्त करना है। वह कहता है कि वे 'तिमिर' को अब हम उषा आरक्त कर देंगे। यहाँ 'तिमिर' (अंधकार) को हटाकर 'उषा' (भोर/सवेरा) लाना है। यह पूरी प्रक्रिया मातृभूमि की स्वतंत्रता से जुड़ी है।

- **'बंदनी जननी':** यह प्रतीक है उस स्थिति का जब मातृभूमि स्वतंत्र नहीं है, अर्थात् परतंत्रता में जी रही है।
- **'तिमिर':** इस अंधकारमय स्थिति को दर्शाता है, जो कि परतंत्रता, अन्याय, और दमन का प्रतीक है।
- **'उषा आरक्त':** यह स्वतंत्रता प्राप्ति के बाद के एक नए युग का प्रतीक है, जो संभवतः संघर्ष और बलिदान (रक्त) का परिणाम होगा।

इस प्रकार, कवि 'तिमिर' के माध्यम से उस दमनकारी और अंधकारमय शासन या स्थिति का वर्णन कर रहा है जिससे देश को मुक्त कराना है। यह स्थिति परतंत्रता के अतिरिक्त कुछ नहीं है।

विकल्पों का मूल्यांकन

विकल्प	अर्थ	संदर्भ के अनुसार विश्लेषण
1. रात	दिन का वह समय जब सूर्य का प्रकाश नहीं होता।	'तिमिर' का एक अर्थ 'रात' हो सकता है, लेकिन यहाँ यह केवल समय का सूचक नहीं है।
2. अंधकार	प्रकाश का अभाव।	यह 'तिमिर' का शाब्दिक अर्थ है, लेकिन काव्यांश में इसका प्रयोग इससे कहीं अधिक गहरे भाव को व्यक्त करता है।
3. परतंत्रता	गुलामी, स्वतंत्रता का अभाव।	काव्यांश का मुख्य विषय मातृभूमि को 'बंदनी' अवस्था से 'मुक्त' करना है। अतः, 'तिमिर' यहाँ उसी परतंत्रता का प्रतीक है जिसे समाप्त करना है।
4. संध्या	दिन और रात के बीच का समय।	यह भी एक समय-विशेष है, परन्तु कविता के मूल भाव, जो स्वतंत्रता प्राप्ति है, से सीधा संबंध 'परतंत्रता' का है।

निष्कर्ष

काव्यांश के संदर्भ और 'बंदनी जननी' को मुक्त करने के संकल्प को देखते हुए, यह स्पष्ट होता है कि 'तिमिर' शब्द यहाँ मातृभूमि की परतंत्रता और उस अंधकारमय स्थिति का प्रतीक है जिससे उसे बाहर निकालना है। कवि इसी परतंत्रता के अंधकार को मिटाकर स्वतंत्रता का सूर्योदय करने की बात कह रहा है।

Your Personal Exams Guide

104. Answer: b

Explanation:

'उषा' का सही समानार्थी शब्द पहचानें

इस प्रश्न में हमें दिए गए काव्यांश के आधार पर 'उषा' शब्द का समानार्थी (यानी पर्यायवाची) शब्द ढूँढना है। काव्यांश में 'उषा' शब्द का प्रयोग हुआ है, और हमें दिए गए विकल्पों में से उसका सही अर्थ वाला शब्द चुनना है।

काव्यांश में 'उषा' का प्रयोग

काव्यांश की एक महत्वपूर्ण पंक्ति है: "तिमिर को अब हम उषा आरक्त कर देंगे।" इस पंक्ति का भावार्थ यह है कि वे अंधकार को 'उषा' की लालिमा से भर देंगे। यहाँ 'उषा' उस समय को दर्शाता है जब रात का अंधेरा छंटने लगता है और सूर्योदय से पहले पूर्व दिशा में लालिमा फैल जाती है। इससे स्पष्ट होता है कि 'उषा' का संबंध प्रभात या सवेरे से है।

'उषा' शब्द का अर्थ एवं समानार्थी

'उषा' एक संस्कृत मूल का शब्द है जिसका अर्थ होता है - प्रभात, भोर, सवेरा, या वह समय जब दिन निकलने वाला होता है। यह सूर्योदय के ठीक पहले के समय का वर्णन करता है जब आकाश में लालिमा छा जाती है।

दिए गए विकल्पों का विश्लेषण

आइये, दिए गए विकल्पों पर एक नजर डालें:

- 1. **संध्या** - 'संध्या' का अर्थ होता है दिन के समाप्त होने का समय, यानी शाम का वक्त। यह 'उषा' का विपरीतार्थक हो सकता है, समानार्थी नहीं।
- 2. **भोर** - 'भोर' का अर्थ है प्रभात, सवेरा, या सूर्योदय का समय। यह 'उषा' का बिल्कुल सही समानार्थी शब्द है।
- 3. **शाम** - 'शाम' का अर्थ भी संध्या काल होता है। यह 'उषा' का समानार्थी नहीं है।
- 4. **मंजरी** - 'मंजरी' का संबंध पौधों से होता है, यह फूल आने से पहले की कली होती है। इसका 'उषा' शब्द से कोई लेना-देना नहीं है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि 'भोर' ही 'उषा' का सही समानार्थी शब्द है, जो काव्यांश के संदर्भ से भी मेल खाता है।

105. Answer: a

Explanation:

सही उत्तर है - स्वयं का बलिदान करना।

★ Key Points

- कविता में कवि भारत को स्वतंत्र करने की बात कर रहा है।
- यहाँ कवि कहता है की यदि ज़रूरत पड़ी तो अपने लहू से धरती को सींचेंगे।
- अर्थात् इस स्वतंत्रता की जंग में अपने प्राणों का बलिदान देने से भी देशभक्त नहीं डरते।

106. Answer: a

Explanation:

राष्ट्रीय शिक्षा नीति 2020 की विदेशी भाषा अनुशंसा

राष्ट्रीय शिक्षा नीति 2020 (NEP 2020) भारत में शिक्षा के परिदृश्य को आधुनिक बनाने का एक व्यापक रोडमैप प्रस्तुत करती है। यह नीति भाषा शिक्षा के महत्व पर भी जोर देती है, जिसमें न केवल भारतीय भाषाओं बल्कि विदेशी भाषाओं के अध्ययन को भी शामिल किया गया है।

विदेशी भाषाओं को वैकल्पिक अध्ययन के रूप में

NEP 2020 के अनुसार, विदेशी भाषाओं का अध्ययन छात्रों के लिए एक अतिरिक्त विकल्प के रूप में प्रस्तुत किया जाना चाहिए। इसका मुख्य उद्देश्य है:

- छात्रों को वैश्विक दुनिया से जोड़ना।
- उन्हें विभिन्न संस्कृतियों, साहित्य और विचारों से अवगत कराना।
- अंतर्राष्ट्रीय समझ और सहयोग को बढ़ावा देना।

यह नीति यह स्पष्ट करती है कि विदेशी भाषाओं का अध्ययन स्वैच्छिक (voluntary) होना चाहिए, जिसे छात्र अपनी रुचि, करियर की आकांक्षाओं या व्यक्तिगत विकास के लक्ष्यों के अनुसार चुन सकते हैं। यह उन्हें भविष्य के लिए बेहतर ढंग से तैयार करने में मदद करता है।

त्रिभाषा सूत्र और विदेशी भाषाओं में अंतर

यह समझना महत्वपूर्ण है कि राष्ट्रीय शिक्षा नीति 2020 विदेशी भाषाओं को त्रिभाषा सूत्र (Three-Language Formula) के तहत एक अनिवार्य भाषा के रूप में या शिक्षा के बुनियादी चरण (foundational stage) की भाषा के रूप में प्रस्तावित नहीं करती है। त्रिभाषा सूत्र मुख्य रूप से भारत की अपनी भाषाओं की विविधता को बनाए रखने और बढ़ावा देने पर केंद्रित है, जिसमें कम से कम दो भारतीय भाषाएँ सीखना शामिल है, जिसमें से एक मातृभाषा/क्षेत्रीय भाषा हो।

इसके विपरीत, विदेशी भाषाओं का प्रावधान माध्यमिक स्तर (secondary level) और उच्च शिक्षा में एक **ऐच्छिक (optional)** विषय के रूप में है। छात्र अपनी पसंद के अनुसार जर्मन, फ्रेंच, स्पेनिश, जापानी, चीनी आदि जैसी भाषाओं का अध्ययन कर सकते हैं।

NEP 2020 का भाषा पर समग्र दृष्टिकोण

NEP 2020 एक बहुभाषी दृष्टिकोण (multilingual approach) को बढ़ावा देती है:

- **मातृभाषा/स्थानीय भाषा:** शिक्षा के माध्यम के रूप में इसे प्रोत्साहित किया जाता है।
- **भारतीय भाषाएँ:** त्रिभाषा सूत्र के माध्यम से इनका अध्ययन।
- **विदेशी भाषाएँ:** वैश्विक संपर्क और ज्ञान के विस्तार के लिए एक अतिरिक्त, वैकल्पिक विकल्प के रूप में।

इस प्रकार, NEP 2020 विदेशी भाषाओं को भारतीय शिक्षा प्रणाली में एक मूल्यवान, लेकिन वैकल्पिक, संवर्धन (enrichment) के रूप में देखती है।

107. Answer: b

Explanation:

- **प्रश्न का विश्लेषण:** यह प्रश्न भारतीय संविधान में हिन्दी भाषा की स्थिति के बारे में पूछता है। हमें यह समझना है कि संविधान ने हिन्दी को किस आधिकारिक दर्जे के तहत मान्यता दी है।

हिन्दी की स्वीकृत स्थिति भारतीय संविधान में

भारतीय संविधान भारत की भाषाओं को विभिन्न रूपों में मान्यता देता है। प्रश्न यह जानने का प्रयास कर रहा है कि संविधान के अनुसार **हिन्दी** को किस प्रकार की **स्वीकृत** स्थिति प्राप्त है।

- **संवैधानिक प्रावधान:** भारतीय संविधान के Article 343 के अनुसार, संघ की **राजभाषा** (Official Language) **हिन्दी** होगी और देवनागरी लिपि में होगी।
- **'राजभाषा' का अर्थ:** 'राजभाषा' वह भाषा होती है जिसका उपयोग सरकारी कामकाज, जैसे कि संसद, अदालतों और सरकारी संचार में किया जाता है। संविधान ने हिन्दी को संघ के सरकारी कामकाज की भाषा के रूप में अपनाया है।
- **'राष्ट्रीय भाषा' नहीं:** यह ध्यान रखना महत्वपूर्ण है कि भारतीय संविधान ने किसी भी भाषा को 'राष्ट्रभाषा' (National Language) घोषित नहीं किया है। भारत एक बहुभाषी देश है, और

संविधान ने विभिन्न क्षेत्रों की भाषाओं का सम्मान किया है। हिन्दी को 'राष्ट्रीय भाषा' कहना संवैधानिक रूप से सही नहीं है, भले ही यह देश में व्यापक रूप से बोली और समझी जाती हो।

- **सह-राजभाषा:** संविधान यह भी प्रावधान करता है कि Article 343(2) के तहत, सरकारी कामकाज के लिए अंग्रेजी भाषा का उपयोग भी जारी रह सकता है। बाद में, आधिकारिक भाषा अधिनियम, 1963 ने अंग्रेजी को **सह-राजभाषा** (Associate Official Language) का दर्जा दिया, जिससे सरकारी कामकाज में इसका उपयोग जारी रखा जा सके।
- **निष्कर्ष:** संविधान द्वारा **हिन्दी** को संघ के सरकारी कामकाज के लिए **राजभाषा** के रूप में स्वीकृत किया गया है।

108. Answer: a

Explanation:

समूह की वाक् विशेषता को समझना: सामाजिक बोली

किसी भी समूह या समुदाय की अपनी खास वाक् विशेषताएँ हो सकती हैं। ये विशेषताएँ उनके बोलने के तरीके, शब्दों के चयन, उच्चारण और व्याकरणिक संरचना में झलकती हैं। प्रश्न पूछता है कि किसी विशेष समूह या समुदाय की इन्हीं वाक् विशेषताओं को क्या कहा जाता है। आइए विभिन्न विकल्पों को देखें:

विभिन्न शब्दावली का विश्लेषण

- **सामाजिक बोली (Sociolect):** यह किसी समाज के भीतर एक विशेष सामाजिक समूह, जैसे कि किसी विशेष वर्ग, जाति, आयु वर्ग, या पेशे से जुड़े लोगों द्वारा बोली जाने वाली भाषा की किस्म को दर्शाता है। यह सीधे तौर पर किसी समुदाय की वाक् विशेषता से संबंधित है।
- **क्षेत्रीय बोली (Dialect):** यह एक विशिष्ट भौगोलिक क्षेत्र में रहने वाले लोगों द्वारा बोली जाने वाली भाषा की किस्म को दर्शाता है। इसका संबंध स्थान से होता है, न कि विशेष रूप से सामाजिक समूह से।
- **भाषा विविधता (Language Variation):** यह एक व्यापक शब्द है जिसमें किसी भाषा के उपयोग में आने वाले सभी अंतर शामिल होते हैं, चाहे वे सामाजिक हों, क्षेत्रीय हों, या किसी अन्य कारण से हों। यह प्रश्न में पूछे गए विशिष्ट पहलू का वर्णन नहीं करता है।
- **बोली (Speech):** यह एक सामान्य शब्द है जिसका उपयोग बोलने की क्रिया या भाषा के किसी भी रूप के लिए किया जा सकता है, लेकिन यह किसी सामाजिक समूह की विशिष्ट वाक् विशेषताओं को सटीकता से परिभाषित नहीं करता है।

मुख्य अंतरों की सारणी

वाक् विशेषताओं के प्रकारों की तुलना

शब्द	किस पर आधारित?	उदाहरण
सामाजिक बोली	सामाजिक स्थिति, वर्ग, आयु, लिंग, व्यवसाय आदि	युवाओं द्वारा इस्तेमाल की जाने वाली विशिष्ट शब्दावली
क्षेत्रीय बोली	भौगोलिक क्षेत्र	किसी विशेष राज्य या जिले की बोली
भाषा विविधता	विभिन्न कारक (सामाजिक, क्षेत्रीय, ऐतिहासिक आदि)	भारत में विभिन्न भाषाओं और बोलियों का अस्तित्व
बोली	सामान्य बोलचाल	किसी व्यक्ति का बोलने का तरीका

निष्कर्ष

प्रश्न विशेष रूप से किसी समूह या समुदाय की वाक् विशेषता के बारे में पूछता है। सामाजिक कारक (जैसे वर्ग, आयु, पेशा) अक्सर किसी समुदाय की भाषा को आकार देते हैं। इसलिए, वह शब्द जो किसी सामाजिक समूह से जुड़ी वाक् विशेषताओं का वर्णन करता है, वह 'सामाजिक बोली' है। यह क्षेत्रीय भिन्नताओं या भाषा विविधता के व्यापक विचार से अधिक विशिष्ट है।

109. Answer: b

Explanation:

मातृभाषा सीखने की मानवीय क्षमता को समझना

यह प्रश्न उस सहज क्षमता के बारे में पूछता है जिसके द्वारा मनुष्य अपनी पहली भाषा, यानी अपनी मातृभाषा या घर की भाषा, बिना किसी औपचारिक शिक्षण या विशेष प्रयास के सीख लेते हैं। यह सीखने की प्रक्रिया आमतौर पर बचपन में स्वाभाविक रूप से होती है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विस्तृत विश्लेषण करें ताकि यह समझा जा सके कि कौन सा विकल्प प्रश्न के संदर्भ में सबसे उपयुक्त है:

- **विकल्प 1: भाषा सहजबोध**

यह विकल्प 'भाषा सहजबोध' (Language intuition) को संदर्भित करता है। हालाँकि भाषा सीखने में सहज ज्ञान एक भूमिका निभाता है, यह उस पूरी प्रक्रिया का वर्णन नहीं करता है जिसमें बच्चा अपनी मूल भाषा को बिना प्रयास के ग्रहण करता है। यह क्षमता के एक पहलू को दर्शाता है, न कि पूरी क्षमता को।

- **विकल्प 2: मानव द्वारा भाषा सीखने की नैसर्गिक प्रवृत्ति**

यह विकल्प सीधे तौर पर प्रश्न के मूल भाव को संबोधित करता है। 'नैसर्गिक प्रवृत्ति' (Natural tendency/instinct) इस बात पर जोर देती है कि मनुष्यों में भाषा सीखने की एक अंतर्निहित (innate) क्षमता होती है, खासकर अपनी पहली भाषा को। बचपन में बच्चे अपने आसपास के वातावरण से ध्वनियों, शब्दों और व्याकरण को स्वाभाविक रूप से सीखते और अपनाते हैं, जिसके लिए किसी विशेष प्रयास की आवश्यकता नहीं होती है। यह नोम चोम्स्की जैसे भाषाविदों द्वारा प्रतिपादित भाषा अधिग्रहण सिद्धांत (Language Acquisition Theory) के अनुरूप है।

- **विकल्प 3: मानव जहाँ तक हो सके अनेक भाषाएँ सीखने की क्षमता रखते हैं**

यह विकल्प बहुभाषावाद (multilingualism) की क्षमता पर केंद्रित है। जबकि मनुष्य कई भाषाएँ सीख सकते हैं, यह विकल्प विशेष रूप से पहली भाषा को 'बिना किसी प्रयास के' सीखने की क्षमता पर ध्यान केंद्रित नहीं करता है। दूसरी या बाद की भाषाओं को सीखने में अक्सर अधिक सचेत प्रयास और अध्ययन की आवश्यकता होती है।

- **विकल्प 4: भाषा अधिगम उपकरण**

यह विकल्प 'भाषा अधिगम उपकरण' (Language Acquisition Device - LAD) जैसी सैद्धांतिक अवधारणा का उल्लेख करता है, जिसे नोम चोम्स्की ने प्रस्तावित किया था। LAD एक काल्पनिक मानसिक क्षमता है जो बच्चों को भाषा के व्याकरणिक संरचनाओं को समझने और उत्पन्न करने में मदद करती है। हालाँकि, यह उपकरण स्वयं सीखने की क्षमता या प्रवृत्ति नहीं है, बल्कि इसके पीछे की एक सैद्धांतिक व्याख्या है। प्रश्न क्षमता के बारे में पूछ रहा है, न कि उस सैद्धांतिक मॉडल के बारे में।

निष्कर्ष

प्रश्न पूछता है कि किसी व्यक्ति की अपनी मूल भाषा या घर की भाषा को बिना किसी प्रयास के सीखने की क्षमता को क्या कहा जाता है। विकल्प 2, "मानव द्वारा भाषा सीखने की नैसर्गिक प्रवृत्ति", इस क्षमता का सबसे सटीक और व्यापक वर्णन करता है। यह मनुष्यों की जन्मजात क्षमता को उजागर करता है जिससे वे अपने परिवेश से भाषा को सहजता से सीखते हैं।

110. Answer: a

Explanation:

निवेश समृद्ध परिवेश की समझ

एक निवेश समृद्ध परिवेश, जिसे भाषा-समृद्ध वातावरण भी कहा जाता है, एक ऐसा शैक्षिक वातावरण है जो शिक्षार्थियों को भाषा को सुनने, देखने, समझने और उसका सक्रिय रूप से उपयोग करने के लिए प्रोत्साहित करता है। इसमें भाषा का भरपूर और विविध उपयोग शामिल होता है, जिससे भाषा सीखने की प्रक्रिया को बढ़ावा मिलता है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें कि कौन सा निवेश समृद्ध परिवेश के अर्थ को सबसे अच्छी तरह दर्शाता है:

- विकल्प 1: शिक्षार्थियों द्वारा भाषा को देखा जाना, ध्यान में लाना और प्रयोग करना

यह विकल्प एक भाषा-समृद्ध परिवेश के मूल तत्व को दर्शाता है। इसमें शामिल है:

- **भाषा को देखना (Observed):** शिक्षार्थी अपने आसपास भाषा के उपयोग को देखते हैं, जैसे कि लिखी हुई सामग्री, बातचीत आदि।
- **भाषा पर ध्यान देना (Noticed):** शिक्षार्थी भाषा की बारीकियों, संरचनाओं और अर्थों पर ध्यान देते हैं।
- **भाषा का प्रयोग करना (Used):** शिक्षार्थी सक्रिय रूप से भाषा का संचार, अभिव्यक्ति और सीखने के लिए उपयोग करते हैं।

यह शिक्षार्थियों की सक्रिय भागीदारी पर जोर देता है, जो एक समृद्ध भाषा परिवेश का महत्वपूर्ण पहलू है।

- विकल्प 2: निवेश शिक्षार्थियों को दिया जानें वाला प्रशिक्षण है

यह विकल्प 'निवेश' शब्द पर केंद्रित है, लेकिन इसे केवल 'प्रशिक्षण' तक सीमित रखता है। एक भाषा-समृद्ध परिवेश केवल प्रशिक्षण नहीं है, बल्कि भाषा के प्रति एक समग्र दृष्टिकोण और अनुभव है। यहाँ 'निवेश' का अर्थ भाषा का इनपुट (input) या भाषा से जुड़ाव हो सकता है, न कि केवल औपचारिक प्रशिक्षण।

- **विकल्प 3: भाषा के अध्यापक को कक्षा में भाषा का प्रयोग करने के लिए तैयार करना**

शिक्षक की तैयारी महत्वपूर्ण है, लेकिन यह एक भाषा-समृद्ध परिवेश का केवल एक हिस्सा है। परिवेश में केवल शिक्षक का भाषा प्रयोग ही नहीं, बल्कि शिक्षार्थियों की अपनी भाषा का प्रयोग, सहपाठियों के साथ अंतःक्रिया और विभिन्न प्रकार की भाषाई सामग्री का समावेश भी शामिल होता है। यह विकल्प शिक्षार्थी-केंद्रित दृष्टिकोण को पूरी तरह से शामिल नहीं करता है।

- **विकल्प 4: पाठ्यपुस्तकें एवं अन्य प्रकार की सामग्री**

पाठ्यपुस्तकें और अन्य सामग्रियाँ (जैसे चार्ट, कहानियाँ, खेल) एक भाषा-समृद्ध परिवेश का हिस्सा हो सकती हैं, लेकिन वे स्वयं परिवेश का पूर्ण विवरण नहीं हैं। परिवेश का मतलब केवल सामग्री का होना नहीं, बल्कि उस सामग्री का उपयोग कैसे किया जाता है और शिक्षार्थी उसके साथ कैसे जुड़ते हैं, यह भी है। सामग्रियों का प्रभावी ढंग से उपयोग किया जाना चाहिए ताकि वे भाषा सीखने को प्रोत्साहित करें।

- **विकल्प 5:**

यह विकल्प खाली है और इसमें कोई प्रासंगिक जानकारी नहीं है।

निष्कर्ष Your Personal Exams Guide

उपरोक्त विश्लेषण के आधार पर, विकल्प 1 सबसे सटीक रूप से **निवेश समृद्ध परिवेश** की अवधारणा को स्पष्ट करता है, क्योंकि यह शिक्षार्थियों की भाषा को देखने, समझने और सक्रिय रूप से उपयोग करने पर बल देता है। यह एक गतिशील वातावरण का वर्णन करता है जहाँ भाषा जीवंत और प्रासंगिक होती है।

111. Answer: b

Explanation:

विज्ञान की भाषा की विशेषताएँ और पहचान

विज्ञान की अपनी एक विशिष्ट भाषा शैली होती है, जिसमें खास शब्दावली, वाक्य संरचना और संचार के तरीके शामिल होते हैं। यह शैली वैज्ञानिक विचारों, निष्कर्षों और प्रक्रियाओं को सटीकता और स्पष्टता से व्यक्त करने के लिए विकसित हुई है। प्रश्न पूछता है कि विज्ञान की भाषा की इस प्रकृति और चारित्रिक विशेषताओं को किस रूप में जाना जाता है।

भाषा रजिस्टर (Language Register) की अवधारणा

भाषा रजिस्टर उस विशेष प्रकार की भाषा को संदर्भित करता है जिसका उपयोग किसी विशेष उद्देश्य या सामाजिक स्थिति के लिए किया जाता है। विज्ञान के संदर्भ में, वैज्ञानिक भाषा एक विशेष 'रजिस्टर' का उदाहरण है। इसमें शामिल हैं:

- **तकनीकी शब्दावली (Technical Terminology):** विशिष्ट वैज्ञानिक शब्दों का प्रयोग।
- **वस्तुनिष्ठता (Objectivity):** व्यक्तिगत भावनाओं या विचारों के बजाय तथ्यों और प्रमाणों पर जोर।
- **सटीकता (Precision):** अस्पष्टता से बचने के लिए सटीक शब्दों और मापों का उपयोग।
- **संक्षिप्तता (Conciseness):** अनावश्यक शब्दों के बिना जानकारी को संक्षेप में प्रस्तुत करना।
- **तार्किक संरचना (Logical Structure):** विचारों को एक सुसंगत और तार्किक क्रम में प्रस्तुत करना।

ये विशेषताएँ मिलकर वैज्ञानिक भाषा को एक अलग पहचान देती हैं, जिसे 'भाषा रजिस्टर' या 'प्रयुक्तियाँ' (Usage) कहा जाता है।

विकल्पों का विश्लेषण

- विकल्प 1: विज्ञान की प्रकृति (Nature of Science)

यह विकल्प सही नहीं है क्योंकि 'विज्ञान की प्रकृति' विज्ञान के अध्ययन, उसके तरीकों और सिद्धांतों से संबंधित है, न कि विशेष रूप से उसकी भाषा की विशेषताओं से।

- विकल्प 2: भाषा रजिस्टर (प्रयुक्तियाँ) (Language Register (Usage))

यह विकल्प सही है। जैसा कि ऊपर बताया गया है, विज्ञान में प्रयुक्त होने वाली विशिष्ट भाषा शैली को 'भाषा रजिस्टर' कहा जाता है। 'प्रयुक्तियाँ' शब्द इस बात पर जोर देता है कि यह भाषा का एक विशेष उपयोग है।

- विकल्प 3: भाषा विविधता (Language Diversity)

यह विकल्प सही नहीं है। 'भाषा विविधता' विभिन्न भाषाओं या एक ही भाषा के विभिन्न रूपों (जैसे बोलियों) के अस्तित्व को दर्शाती है, न कि किसी विशेष क्षेत्र (जैसे विज्ञान) में भाषा के उपयोग की विशिष्ट विशेषताओं को।

- **विकल्प 4: भाषा बोली (Language Dialect)**

यह विकल्प सही नहीं है। 'भाषा बोली' किसी भाषा का वह क्षेत्रीय या सामाजिक रूप होती है जिसमें उच्चारण, शब्दावली और व्याकरण में भिन्नताएँ होती हैं। वैज्ञानिक भाषा किसी विशेष बोली से संबंधित नहीं है, बल्कि यह एक विशिष्ट उद्देश्य के लिए भाषा का मानकीकृत उपयोग है।

निष्कर्ष

विज्ञान की भाषा की अपनी अनूठी प्रकृति और चारित्रिक विशेषताएँ होती हैं, जो इसे अन्य प्रकार की भाषा से अलग करती हैं। इन विशिष्टताओं को सामूहिक रूप से **भाषा रजिस्टर (प्रयुक्तियाँ)** के रूप में जाना जाता है।

112. Answer: c

Explanation:

गतिविधि का उद्देश्य: शब्दों के बीच संबंध समझना

इस प्रश्न में, एक अध्यापक कक्षा 6 के विद्यार्थियों को एक नई शब्दावली सिखाने की कोशिश कर रहा है। अध्यापक पाँच शब्दों का एक सेट देता है और विद्यार्थियों से शब्द टोकरी में से ऐसे शब्द खोजने के लिए कहता है जो दिए गए सेट से जोड़ बना सके। यह गतिविधि शब्दों के बीच अर्थ या उपयोग के आधार पर संबंध स्थापित करने की क्षमता का आकलन करती है।

विकल्पों का विश्लेषण

- **विन्यास:** इसका अर्थ होता है किसी चीज को व्यवस्थित करना या उसकी व्यवस्था बनाना। यह गतिविधि के उद्देश्य से मेल नहीं खाता, क्योंकि यहाँ शब्दों को क्रम में नहीं लगाना है, बल्कि उनके बीच संबंध खोजना है।
- **शब्द जाल:** इसमें विचारों या शब्दों को एक केंद्रीय विषय के आसपास मानचित्र के रूप में व्यवस्थित किया जाता है, जिससे उनके बीच संबंध स्पष्ट होते हैं। हालाँकि यह शब्दावली सीखने में

सहायक हो सकता है, पर प्रश्न में सीधे तौर पर 'जाल' बनाने का उल्लेख नहीं है, बल्कि केवल दिए गए शब्दों से 'जोड़' खोजना है।

- **संयोजन:** इसका अर्थ है चीजों को एक साथ जोड़ना या उनके बीच संबंध स्थापित करना। इस गतिविधि में, विद्यार्थी दिए गए पाँच शब्दों के सेट के साथ **संयोजन** (या संबंध) बनाने वाले शब्दों को शब्द टोकरी से खोज रहे हैं। यह सीधे तौर पर प्रश्न में वर्णित कार्य को दर्शाता है।
- **शब्द समूह:** यह समान विशेषताओं वाले शब्दों के एक संग्रह को संदर्भित करता है। यह एक परिणाम हो सकता है, लेकिन यह उस प्रक्रिया का नाम नहीं है जो विद्यार्थी कर रहे हैं, यानी शब्दों के बीच संबंध खोजना।

सही विकल्प का स्पष्टीकरण

सही उत्तर **संयोजन** है क्योंकि यह उस प्रक्रिया का सबसे अच्छा वर्णन करता है जहाँ विद्यार्थी किसी दिए गए शब्द समूह के साथ संबंध या जुड़ाव रखने वाले अन्य शब्दों को पहचानते हैं। अध्यापक का उद्देश्य विद्यार्थियों की उन शब्दों को खोजने की क्षमता का मूल्यांकन करना है जो मूल सेट से किसी न किसी रूप में जुड़ते हों, जो कि 'संयोजन' या 'साहचर्य' (association) का एक रूप है। विद्यार्थी शब्द टोकरी में उपलब्ध शब्दों का उपयोग करके दिए गए सेट के साथ 'जोड़' बना रहे हैं, यही 'संयोजन' कहलाता है।

113. Answer: d

Explanation:

पठन के उपकौशल को समझना

यह प्रश्न 'पठन' (Reading) के विभिन्न उपकौशलों (sub-skills) के बारे में है। पठन केवल अक्षरों को पहचानने या शब्दों को बोलने की प्रक्रिया नहीं है, बल्कि इसका मुख्य उद्देश्य पाठ्य सामग्री के अर्थ को समझना और उसका विश्लेषण करना होता है। आइए, विकल्पों का विश्लेषण करें कि कौन-सा विकल्प पठन का उपकौशल नहीं माना जाता है।

पठन के उपकौशलों का विश्लेषण

- **अवधारणात्मक अर्थ समझना:** किसी पाठ को पढ़ने का एक महत्वपूर्ण हिस्सा उसके अर्थ को ग्रहण करना और समझना है। यह पठन की समझ (comprehension) से जुड़ा है, जो एक आवश्यक उपकौशल है।

- **सम्प्रेषणात्मक प्रकार्य की समझ:** वाक्यों और अभिव्यक्तियों का उपयोग किस तरह संवाद या भाव व्यक्त करने के लिए किया गया है, इसे समझना भी पठन का एक महत्वपूर्ण पहलू है। यह भाषा के प्रयोग को समझने में मदद करता है।
- **साहित्यिक रचना/युक्ति की पहचान:** पाठ में लेखक द्वारा इस्तेमाल की गई साहित्यिक तकनीकों या रचनाओं को पहचानना, जैसे अलंकार, मुहावरे आदि, पाठ की गहरी समझ और विश्लेषण के लिए आवश्यक है। यह भी पठन का एक उपकौशल है।
- **ध्वनि उच्चारण पर अर्थ न समझना:** इस विकल्प में कहा गया है कि व्यक्ति अक्षरों और शब्दों का उच्चारण तो कर सकता है, लेकिन उनका अर्थ नहीं समझ पाता। पठन का मूल उद्देश्य अर्थ को समझना है। यदि अर्थ समझने की क्षमता नहीं है, तो यह पूर्ण पठन कौशल नहीं कहलाता, बल्कि यह केवल ध्वन्यात्मकता (decoding) तक सीमित रह जाता है, जो पठन का केवल एक प्रारंभिक चरण है, पूर्ण उपकौशल नहीं। इसलिए, यह पठन का एक उपकौशल नहीं है, बल्कि पठन में एक कमी को दर्शाता है।

निष्कर्ष: पठन का कौन-सा उपकौशल नहीं है?

पठन एक व्यापक प्रक्रिया है जिसमें ध्वनियों को पहचानने के साथ-साथ अर्थ को समझना, विश्लेषण करना और उस पर प्रतिक्रिया देना शामिल है। विकल्प 4 में वर्णित स्थिति, जहाँ केवल उच्चारण संभव है पर अर्थ समझना नहीं, पठन की समझ (comprehension) के अभाव को दर्शाती है। अर्थ समझने की क्षमता पठन का एक मूलभूत उपकौशल है। इसके बिना, पठन केवल एक सतही क्रिया रह जाती है। इसलिए, 'अक्षरों और शब्दों की ध्वनि उच्चारित कर पाना पर अर्थ न समझ पाना' पठन का उपकौशल नहीं माना जा सकता, बल्कि यह पठन कौशल की अपूर्णता का सूचक है।

Your Personal Exams Guide

114. Answer: a

Explanation:

राहुल द्वारा विशिष्ट सूचना के लिए पठन

यह प्रश्न उस पठन तकनीक के बारे में पूछता है जिसका उपयोग राहुल कर रहा है। राहुल ने सुबह एक समाचार पढ़ा था और अब वह उसमें से विशिष्ट सूचना (specific information) ढूँढना चाहता है। इसका मतलब है कि वह केवल सामान्य जानकारी नहीं, बल्कि कोई खास तथ्य या विवरण खोज रहा है।

'बारीकी से पठन' सही उत्तर क्यों है?

जब कोई पाठक किसी लेख या समाचार पत्र जैसी सामग्री में से किसी विशेष जानकारी, जैसे कोई तारीख, नाम, या कोई खास घटना का विवरण, खोजना चाहता है, तो वह 'बारीकी से पठन' (close reading or scanning) का उपयोग करता है। इस प्रकार के पठन में, पाठक सामग्री को अधिक ध्यान से और गहराई से देखता है, अक्सर केवल उन हिस्सों पर ध्यान केंद्रित करता है जहाँ उसे अपेक्षित जानकारी मिलने की संभावना होती है। राहुल का इरादा 'विशिष्ट सूचना देखना' है, जो ठीक इसी पठन रणनीति से मेल खाता है।

अन्य विकल्प क्यों सही नहीं हैं?

- **सरसरी तौर पर पठन:** इस विधि में पाठक किसी पाठ्य सामग्री के मुख्य विचारों या सामान्य सारांश को समझने के लिए उसे जल्दी से पढ़ता है। यह विशिष्ट विवरण खोजने के बजाय, सामग्री का एक मोटा अंदाज़ा लगाने के लिए की जाती है। इसलिए, यह राहुल की ज़रूरत के अनुसार नहीं है।
- **अन्तरपाठीय पठन:** यह एक ऐसी पठन विधि है जिसमें पाठक एक पाठ की तुलना दूसरे पाठ से करता है या उनके बीच संबंध स्थापित करता है। राहुल केवल एक ही समाचार से जानकारी निकाल रहा है, इसलिए यह विकल्प लागू नहीं होता।
- **व्याख्यात्मक पठन:** इस विधि का उद्देश्य किसी विषय या पाठ को गहराई से समझना और उसकी व्याख्या करना होता है। हालाँकि राहुल विशिष्ट जानकारी को समझने की कोशिश कर सकता है, लेकिन प्रश्न का मुख्य जोर जानकारी को 'ढूँढना' या 'देखना' है, न कि केवल उसकी व्याख्या करना। 'बारीकी से पठन' इस खोज प्रक्रिया के लिए अधिक उपयुक्त है।

इसलिए, जब राहुल सुबह के समाचार में से किसी खास जानकारी को खोजना चाहता है, तो यह क्रिया 'बारीकी से पठन' कहलाती है।

115. Answer: b

Explanation:

अध्यापक के लेखन उपागम को समझना

यह प्रश्न एक अध्यापक द्वारा अपनाई गई लेखन शिक्षण विधि के बारे में है। अध्यापक अपने शिक्षार्थियों (students) को लेखन प्रक्रिया के विभिन्न चरणों से गुजार रही हैं। इन चरणों में विचारों को एक जगह लिखना, एक रूपरेखा (outline) तैयार करना, पहला मसौदा (draft) लिखना, लेखन का संपादन

(editing) करना, और अंत में अंतिम मसौदा (final draft) लिखना शामिल है। हमें यह पहचानना है कि अध्यापक लेखन के किस उपागम (approach) का अनुसरण कर रही है।

शिक्षण के चरणों का विश्लेषण

अध्यापक द्वारा बताए गए चरण एक व्यवस्थित लेखन प्रक्रिया को दर्शाते हैं:

- **विचार लिखना:** यह लेखन का प्रारंभिक चरण है, जिसे विचार-मंथन (brainstorming) या पूर्व-लेखन (prewriting) भी कहते हैं। इसमें विषय से संबंधित सभी विचारों को एकत्र किया जाता है।
- **रूपरेखा तैयार करना:** इस चरण में एकत्र किए गए विचारों को एक तार्किक क्रम में व्यवस्थित किया जाता है, जिससे लेखन को एक संरचना मिलती है।
- **पहला प्रारूप लिखना:** यह विचारों और रूपरेखा के आधार पर सामग्री का पहला लिखित मसौदा तैयार करने का चरण है।
- **लेखन का संपादन करना:** इसमें लिखे गए मसौदे को सुधारना शामिल है, जैसे कि स्पष्टता, व्याकरण, वर्तनी और वाक्य संरचना की जाँच करना। यह पुनरीक्षण (revision) और संपादन (editing) का एक महत्वपूर्ण हिस्सा है।
- **अंतिम प्रारूप लिखना:** संपादन के बाद, लेखन को अंतिम रूप दिया जाता है, जो प्रकाशन या प्रस्तुति के लिए तैयार होता है।

लेखन उपागमों का मूल्यांकन

आइए अब दिए गए विकल्पों का मूल्यांकन करें:

प्रक्रिया उपागम (Process Approach) की व्याख्या

लेखन का प्रक्रिया उपागम इस बात पर जोर देता है कि लिखना एक क्रमिक प्रक्रिया है जिसमें कई चरण शामिल होते हैं। लेखक इन चरणों से गुजरते हुए अपने विचारों को विकसित करते हैं और उन्हें प्रभावी ढंग से व्यक्त करते हैं। इन चरणों में आम तौर पर पूर्व-लेखन (विचार, योजना), मसौदा तैयार करना (drafting), पुनरीक्षण (revising), संपादन (editing), और प्रकाशन (publishing) शामिल हैं।

अध्यापक द्वारा बताए गए सभी चरण – विचारों को लिखना, रूपरेखा बनाना, पहला मसौदा लिखना, संपादन करना और अंतिम मसौदा लिखना – सीधे तौर पर *लेखन के प्रक्रिया उपागम* से मेल खाते हैं। यह उपागम लिखने की क्रिया पर ध्यान केंद्रित करता है, न कि केवल अंतिम उत्पाद पर।

अन्य उपागम क्यों उपयुक्त नहीं हैं

- **लेखन का उत्पाद उपागम (Product Approach):** यह उपागम मुख्य रूप से अंतिम लिखित कार्य (उत्पाद) पर ध्यान केंद्रित करता है। इसमें व्याकरण, शैली और संरचना जैसे अंतिम परिणाम के मानकों को पूरा करने पर जोर दिया जाता है। हालाँकि अध्यापक के तरीकों में एक उत्पाद (अंतिम मसौदा) शामिल है, लेकिन पूरी प्रक्रिया – विशेष रूप से पहला मसौदा और संपादन पर जोर – यह दर्शाती है कि केवल उत्पाद पर ही ध्यान केंद्रित नहीं है।
- **उद्देश्य के लिए लिखना (Writing for a Purpose):** यह इस बात पर केंद्रित है कि लेखन क्यों किया जा रहा है (जैसे, सूचित करना, मनोरंजन करना, मनाना)। यह लेखन के *तरीके* का वर्णन नहीं करता, बल्कि लेखन के *कारण* का वर्णन करता है।
- **शिक्षार्थी आधारित लेखन (Learner-Based Writing):** यह उपागम शिक्षार्थी की रुचियों, आवश्यकताओं और अनुभवों को महत्व देता है। हालाँकि यह एक अच्छी शिक्षण पद्धति हो सकती है, लेकिन यह विशेष रूप से अध्यापक द्वारा अपनाई गई चरण-दर-चरण लेखन विधि का वर्णन नहीं करती है।

लेखन विधि पर निष्कर्ष

अध्यापक शिक्षार्थियों को लेखन के प्रत्येक चरण से गुजरने के लिए मार्गदर्शन कर रही हैं, जिसमें विचारों को उत्पन्न करने से लेकर अंतिम रूप देने तक सब कुछ शामिल है। यह दृष्टिकोण लेखन को एक जटिल लेकिन प्रबंधनीय प्रक्रिया के रूप में देखता है। इसलिए, अध्यापक स्पष्ट रूप से **लेखन के प्रक्रिया उपागम** का उपयोग कर रही हैं।

116. Answer: a

Explanation:

कनिका की शिक्षण युक्ति का विश्लेषण: समय और काल का शिक्षण

यह प्रश्न कक्षा-6 की शिक्षिका कनिका द्वारा 'समय और काल' (Tense) को पढ़ाने के लिए अपनाई गई एक विशेष शिक्षण विधि के बारे में है। कनिका एक ऐसी पाठ्यसामग्री का उपयोग करती है जिसमें भाषा के तत्व बार-बार आते हैं। वह छात्रों को जोड़ी में काम करने, पाठ्यसामग्री को समझने, विभिन्न कालों की पहचान करने और उनका प्रयोग करने तथा अंत में काल के रूप और नियमों पर ध्यान केंद्रित करने के लिए प्रेरित करती है। हमें इस पूरी प्रक्रिया को क्या कहा जाएगा, यह पहचानना है।

कनिका द्वारा अपनाई गई विधि के चरण

कनिका की विधि को समझने के लिए, हम इसके विभिन्न चरणों को देखते हैं:

- **पहला चरण:** पाठ्यसामग्री का परिचय - ऐसी सामग्री का उपयोग जिसमें भाषा के तत्व (जैसे क्रिया, काल-सूचक शब्द) बार-बार आते हैं।
- **दूसरा चरण:** सहयोगात्मक पठन और अवलोकन - शिक्षार्थी जोड़ी में बैठकर पाठ्यसामग्री को पढ़ते हैं और उसमें मौजूद भाषिक तत्वों पर ध्यान देते हैं।
- **तीसरा चरण:** संदर्भ-आधारित पहचान और प्रयोग - शिक्षार्थी पाठ्यसामग्री को दोबारा पढ़ते हैं, उसमें विभिन्न कालों (जैसे वर्तमान, भूत, भविष्य) की पहचान करते हैं और उन्हें वाक्यों में प्रयोग करते हैं।
- **चौथा चरण:** नियमों पर ध्यान - अंत में, शिक्षिका छात्रों का ध्यान समय और काल के रूप (forms) और नियमों (rules) की ओर ले जाती है।

विकल्पों का मूल्यांकन

आइए अब दिए गए विकल्पों का मूल्यांकन करें कि कौन सा विकल्प कनिका की विधि का सबसे सटीक वर्णन करता है:

- **1. व्याकरण का अभ्यास (ड्रिल):** 'ड्रिल' का अर्थ है किसी कौशल या ज्ञान को बार-बार दोहराकर उसमें निपुणता प्राप्त करना। कनिका की विधि में सामग्री को दोहराना (बार-बार पढ़ना), भाषिक तत्वों पर ध्यान देना, और विशेष रूप से 'समय और काल' के प्रयोग और नियमों का अभ्यास शामिल है। यह व्याकरणिक संरचनाओं (tenses) को मजबूत करने के लिए एक व्यवस्थित अभ्यास प्रक्रिया है। यह विकल्प विधि के दोहराव और अभ्यास वाले पहलू से मेल खाता है।
- **2. अध्ययन - संलग्नता - विमर्श - प्रयोग:** यह एक सामान्य शिक्षण-अधिगम चक्र का वर्णन करता है। यद्यपि कनिका की विधि में ये तत्व हो सकते हैं (जैसे, अध्ययन - सामग्री पढ़ना, संलग्नता - जोड़ी में काम करना, विमर्श - कालों की पहचान, प्रयोग - उनका उपयोग), यह विशेष रूप से व्याकरण शिक्षण की प्रकृति को नहीं दर्शाता जैसा कि प्रश्न में वर्णित है।
- **3. गहन व्याकरण अभ्यास:** जबकि कनिका का तरीका व्याकरण का अभ्यास है, 'गहन' शब्द यह संकेत दे सकता है कि यह बहुत लंबा या बहुत मुश्किल अभ्यास है, जो आवश्यक रूप से वर्णित नहीं है। कनिका की विधि अधिक संरचित और चरणबद्ध लगती है।
- **4. प्रस्तुतीकरण, अभ्यास - परिणाम:** यह एक सामान्य शिक्षण मॉडल (Presentation, Practice, Production/Result) है। कनिका सामग्री प्रस्तुत करती है (पहला चरण), छात्र अभ्यास करते हैं (दूसरे और तीसरे चरण), जिससे समझ विकसित होती है (परिणाम)। यह विकल्प भी प्रासंगिक है, लेकिन 'ड्रिल' शब्द विशेष रूप से बार-बार दोहराव और व्याकरणिक सटीकता पर केंद्रित अभ्यास को दर्शाता है, जो यहाँ महत्वपूर्ण है।

निष्कर्ष: सबसे उपयुक्त विकल्प का चयन

कनिका की विधि में 'समय और काल' जैसे व्याकरणिक बिंदु पर ध्यान केंद्रित किया गया है। इसमें पाठ्यसामग्री को बार-बार पढ़ना, भाषिक तत्वों पर ध्यान केंद्रित करना, और संदर्भ में विभिन्न कालों की पहचान कर उनका उपयोग करने का अभ्यास शामिल है। अंत में नियमों पर जोर दिया जाता है। यह पूरी प्रक्रिया व्याकरणिक सटीकता और प्रवाह प्राप्त करने के लिए एक संरचित, दोहराव वाले अभ्यास (drill) के समान है। इसलिए, 'व्याकरण का अभ्यास (ड्रिल)' सबसे उपयुक्त वर्णन है क्योंकि यह विधि के दोहराव, केंद्रित अभ्यास और व्याकरणिक नियमों पर जोर देने वाले पहलुओं को प्रभावी ढंग से समाहित करता है।

117. Answer: a

Explanation:

पठन और वर्तनी संबंधी कठिनाइयों का विश्लेषण: डिस्लेक्सिया की पहचान

यह प्रश्न कक्षा 6 के एक विद्यार्थी की विशेष शैक्षिक आवश्यकताओं पर केंद्रित है। जैसा कि अध्यापक रहीम ने देखा, विद्यार्थी को सामान्य सहपाठियों की तुलना में **पठन (reading)** में अधिक समय लगता है और उसे **शब्दों के हिज्जे (spelling)** करने में भी कठिनाई हो रही है। हमें इस विशेष कमी या सीखने की अक्षमता (learning difficulty) का नाम पहचानना है।

विद्यार्थी की मुख्य समस्याएँ

- पठन गति में कमी: छात्र अपने साथियों की अपेक्षा धीमी गति से पढ़ता है।
- वर्तनी (Spelling) में कठिनाई: शब्दों को सही ढंग से लिखने या हिज्जे करने में समस्या है।

सीखने की अक्षमताओं का मूल्यांकन

आइए प्रत्येक विकल्प का विश्लेषण करें ताकि यह समझा जा सके कि कौन सी स्थिति विद्यार्थी की बताई गई समस्याओं से सबसे अधिक मेल खाती है:

1. डिस्लेक्सिया (Dyslexia)

डिस्लेक्सिया एक सामान्य न्यूरोलॉजिकल (neurological) सीखने की अक्षमता है जो मुख्य रूप से पढ़ने के कौशल को प्रभावित करती है। इसके लक्षणों में शामिल हैं: शब्दों को पहचानने में कठिनाई,

पढ़ने की धीमी गति, और वर्तनी (spelling) संबंधी समस्याएं। डिस्लेक्सिया वाले व्यक्ति अक्सर अक्षरों और ध्वनियों के बीच संबंध स्थापित करने में संघर्ष करते हैं। प्रश्न में वर्णित छात्र की दोनों मुख्य समस्याएं – पठन में अधिक समय लगना और वर्तनी में कठिनाई – डिस्लेक्सिया के विशिष्ट लक्षण हैं।

2. डिस्ग्राफ़िया (Dysgraphia)

डिस्ग्राफ़िया एक सीखने की अक्षमता है जो विशेष रूप से लिखने के कौशल को प्रभावित करती है। इसमें खराब लिखावट, अक्षरों को सही ढंग से बनाने में कठिनाई, और विचारों को लिखने में व्यवस्थित करने में समस्याएं शामिल हो सकती हैं। हालाँकि वर्तनी (spelling) भी इससे प्रभावित हो सकती है, डिस्ग्राफ़िया का मुख्य केंद्र बिंदु लेखन है, जबकि प्रश्न में **पठन (reading)** की कठिनाई पर भी जोर दिया गया है।

3. दृश्यात्मक पहचान (Visual Recognition)

दृश्यात्मक पहचान का अर्थ है देखकर किसी वस्तु, अक्षर या शब्द को पहचानना। यह पढ़ने की प्रक्रिया का एक हिस्सा है, लेकिन यह स्वयं कोई सीखने की अक्षमता नहीं है। यदि किसी छात्र को दृश्यात्मक पहचान में समस्या होती है, तो वह अक्षरों या शब्दों को पहचानने में कठिनाई महसूस कर सकता है, जो पढ़ने की समग्र समस्या में योगदान दे सकता है। हालांकि, यह शब्द (डिस्लेक्सिया) उस विशिष्ट कठिनाई को अधिक सटीक रूप से दर्शाता है जिसका छात्र सामना कर रहा है, जिसमें केवल दृश्य पहचान से अधिक शामिल है।

4. पठन में कठिनाई (Difficulty in Reading)

पठन में कठिनाई एक सामान्य विवरण है जो बताता है कि किसी व्यक्ति को पढ़ने में परेशानी हो रही है। यह एक लक्षण है, न कि उस विशिष्ट स्थिति का नाम जिसके कारण यह कठिनाई हो रही है। डिस्लेक्सिया जैसी स्थितियाँ पठन में कठिनाई का कारण बनती हैं। प्रश्न एक विशिष्ट नाम पूछ रहा है, इसलिए यह सामान्य विवरण सही उत्तर नहीं है।

निष्कर्ष: सबसे उपयुक्त निदान

विद्यार्थी की **पठन (reading)** में लगने वाली अधिकता और **शब्दों के हिज्जे (spelling)** करने में आने वाली कठिनाई, ये दोनों लक्षण मिलकर **डिस्लेक्सिया** की ओर स्पष्ट रूप से संकेत करते हैं। डिस्लेक्सिया एक ऐसी स्थिति है जो विशेष रूप से इन दोनों क्षेत्रों में चुनौतियाँ पेश करती है।

अतः, इस कमी को डिस्लेक्सिया कहा जाएगा।

118. Answer: c

Explanation:

संरचनात्मक आकलन (Formative Assessment) का उद्देश्य समझना

संरचनात्मक आकलन, जिसे अंग्रेजी में 'Formative Assessment' कहा जाता है, सीखने-सिखाने की प्रक्रिया के दौरान किया जाने वाला एक महत्वपूर्ण मूल्यांकन है। इसका मुख्य लक्ष्य यह समझना है कि विद्यार्थी कैसे सीख रहे हैं और उनकी सीखने की प्रक्रिया को कैसे बेहतर बनाया जा सकता है। यह एक निरंतर चलने वाली प्रक्रिया है जो कक्षा में ही घटित होती है।

विकल्पों का विश्लेषण

विकल्प 1: नियमित अंतरालों पर शिक्षार्थी का आकलन करना

संरचनात्मक आकलन निश्चित रूप से नियमित अंतरालों पर होता है, लेकिन केवल आकलन करना इसका अंतिम उद्देश्य नहीं है। आकलन से प्राप्त जानकारी का उपयोग सीखने को सुधारने के लिए किया जाता है। इसलिए, यह कथन अधूरा है।

विकल्प 2: सैमेस्टर या सत्र के अंत में आकलन करना

यह कथन योगात्मक आकलन (Summative Assessment) का वर्णन करता है, जो आमतौर पर पाठ्यक्रम या सत्र के अंत में होता है। इसका उद्देश्य सीखने के परिणाम को मापना होता है, न कि सीखने की प्रक्रिया के दौरान सुधार करना।

विकल्प 3: शिक्षार्थी के अधिगम के सभी उदाहरणों का रिकॉर्ड रखना

संरचनात्मक आकलन का एक महत्वपूर्ण पहलू विद्यार्थियों द्वारा किए गए कार्यों, जैसे - कक्षा कार्य, गृह कार्य, प्रोजेक्ट, प्रश्नोत्तरी, अवलोकन आदि के विभिन्न उदाहरणों को एकत्र करना है। इन उदाहरणों का रिकॉर्ड रखने से शिक्षक को विद्यार्थी की प्रगति, समझने की गहराई और कठिनाइयों का पता चलता है। इसी रिकॉर्ड के आधार पर शिक्षक उपयुक्त प्रतिक्रिया (feedback) प्रदान करता है और शिक्षण विधियों में आवश्यक बदलाव करता है ताकि विद्यार्थी का अधिगम सुधर सके। यह विकल्प संरचनात्मक आकलन की प्रक्रिया के मूल उद्देश्य को दर्शाता है।

विकल्प 4: शिक्षार्थी को यह जानने में मदद करना कि सीखने के संबंध में कक्षा में उसकी क्या स्थिति है

हालांकि संरचनात्मक आकलन से विद्यार्थियों को अपनी प्रगति का पता चलता है, लेकिन इसका मुख्य उद्देश्य कक्षा में दूसरों के साथ तुलना करके उनकी 'स्थिति' बताना नहीं है। इसका प्राथमिक लक्ष्य व्यक्तिगत सीखने के मार्ग को बेहतर बनाना और सुधार के अवसर प्रदान करना है।

सही विकल्प का स्पष्टीकरण

संरचनात्मक आकलन (Formative Assessment) का मुख्य उद्देश्य सीखने की प्रक्रिया को लगातार जाँचना और सुधारना है। इसके लिए, शिक्षक विद्यार्थी के सीखने के विभिन्न उदाहरणों (जैसे कि उनके काम के नमूने, बातचीत, या प्रदर्शन) को एकत्र करता है और उनका रिकॉर्ड रखता है। इस जानकारी का उपयोग करके, शिक्षक विद्यार्थी को प्रभावी प्रतिक्रिया देता है और आवश्यकतानुसार शिक्षण रणनीतियों को समायोजित करता है। इसलिए, 'शिक्षार्थी के अधिगम के सभी उदाहरणों का रिकॉर्ड रखना' संरचनात्मक आकलन के उद्देश्य का सबसे सटीक वर्णन है, क्योंकि यह जानकारी प्रदान करता है जिससे सीखने की प्रक्रिया को निर्देशित और बेहतर बनाया जा सके।

119. Answer: b

Explanation:

भाषा शिक्षण में समाचार-पत्र का प्रयोग

यह प्रश्न भाषा शिक्षणशास्त्र (Language Pedagogy) से संबंधित है और पूछता है कि जब एक अध्यापिका कक्षा आठ के छात्रों को भाषा सिखाने के लिए समाचार पत्र के एक खेल समाचार का उपयोग करती है, तो इस प्रकार के उपयोग को क्या कहा जाता है। इस संदर्भ में, सामग्री के स्रोत और उद्देश्य को समझना महत्वपूर्ण है।

प्रामाणिक सामग्री का विश्लेषण

प्रामाणिक सामग्री (Authentic Material) का अर्थ है ऐसी सामग्री जो विशेष रूप से भाषा सीखने वालों के लिए नहीं बनाई गई है, बल्कि वास्तविक जीवन में अपने मूल उद्देश्य के लिए बनाई गई है। समाचार पत्र, पत्रिकाएं, रेडियो प्रसारण, टीवी विज्ञापन, रेस्तरां मेनू, या किसी उत्पाद के लेबल जैसी चीजें इसका उदाहरण हैं।

- **समाचार पत्र का उदाहरण:** प्रश्न में जिस खेल समाचार का उल्लेख किया गया है, वह एक समाचार पत्र से लिया गया है। समाचार पत्र आम जनता के लिए जानकारी प्रदान करने के उद्देश्य से प्रकाशित होते हैं, न कि विशेष रूप से भाषा सिखाने के लिए।
- **वास्तविक दुनिया से जुड़ाव:** इस प्रकार की सामग्री का उपयोग छात्रों को वास्तविक दुनिया की भाषा और संचार के तरीकों से जोड़ता है, जिससे सीखने की प्रक्रिया अधिक प्रासंगिक और आकर्षक बनती है।
- **कौशल विकास:** प्रामाणिक सामग्री का उपयोग करके, छात्र वास्तविक जीवन की भाषा को समझते हैं, जिसमें विभिन्न प्रकार की शब्दावली, वाक्य संरचनाएं और सांस्कृतिक संदर्भ शामिल हो सकते हैं।

अन्य शिक्षण सामग्री के प्रकारों को समझना

आइए अन्य विकल्पों पर विचार करें कि वे इस स्थिति में क्यों सही नहीं हैं:

- **आविष्कृत सामग्री:** यह वह सामग्री होती है जिसे विशेष रूप से शिक्षण के उद्देश्य से तैयार किया जाता है, जैसे कि पाठ्यपुस्तक में दिए गए अभ्यास या शिक्षक द्वारा विशेष रूप से बनाए गए उदाहरण। समाचार पत्र का लेख पहले से ही मौजूद है, इसलिए यह आविष्कृत नहीं है।
- **पठन सामग्री:** यह एक बहुत व्यापक श्रेणी है जिसमें कोई भी लिखित पाठ शामिल हो सकता है जिसे पढ़ने के लिए डिज़ाइन किया गया है। जबकि समाचार पत्र पठन सामग्री है, "प्रामाणिक सामग्री" एक अधिक विशिष्ट और सटीक वर्गीकरण है जो इसके मूल उद्देश्य को दर्शाता है।
- **अध्यापक द्वारा रचित सामग्री:** इसका मतलब है कि सामग्री को स्वयं शिक्षक ने पाठ के लिए बनाया है। समाचार पत्र का खेल समाचार एक पेशेवर पत्रकार या लेखक द्वारा लिखा गया है, न कि उस विशेष कक्षा के शिक्षक द्वारा।

निष्कर्ष

समाचार पत्र का खेल समाचार, जिसे एक कक्षा आठ की अध्यापिका भाषा सिखाने के लिए उपयोग कर रही है, भाषा शिक्षणशास्त्र के संदर्भ में **प्रामाणिक सामग्री** का एक उत्कृष्ट उदाहरण है। यह सामग्री वास्तविक दुनिया के संचार के लिए बनाई गई थी और इसका उपयोग छात्रों को भाषा के व्यावहारिक अनुप्रयोग से परिचित कराता है।

120. Answer: c

Explanation:

‘ट्रांसलैंग्वेजिंग’ का अर्थ और अवधारणा

‘ट्रांसलैंग्वेजिंग’ (Transliteration: Translanguaging) एक महत्वपूर्ण अवधारणा है जो बहुभाषी व्यक्तियों के भाषा उपयोग के तरीके को दर्शाती है। इसका तात्पर्य सिर्फ एक भाषा से दूसरी भाषा में बदलना (जिसे कोड-स्विचिंग भी कहा जाता है) नहीं है, बल्कि यह उससे कहीं ज्यादा व्यापक है। ‘ट्रांसलैंग्वेजिंग’ में, व्यक्ति अपने भाषाई ज्ञान के पूरे स्पेक्ट्रम का उपयोग करते हैं - इसमें वे सभी भाषाएँ, बोलियाँ, लहजे और शैलियाँ शामिल होती हैं जिन्हें वे जानते हैं। वे इन सभी संसाधनों का उपयोग विचारों को प्रभावी ढंग से संप्रेषित करने, अर्थ बनाने और अपनी सोच को व्यवस्थित करने के लिए लचीले ढंग से करते हैं।

विकल्पों का विश्लेषण: ‘ट्रांसलैंग्वेजिंग’ को समझना

आइए प्रत्येक विकल्प का विश्लेषण करके समझें कि कौन सा ‘ट्रांसलैंग्वेजिंग’ को सबसे सटीक रूप से परिभाषित करता है:

- **विकल्प 1:** ‘शिक्षार्थी कक्षा में सीखने के लिए जानी गई भाषाओं का इस्तेमाल करते हैं।’ यह कथन सत्य है, लेकिन यह ‘ट्रांसलैंग्वेजिंग’ की पूरी व्याख्या नहीं करता। यह केवल भाषाओं के उपयोग पर केंद्रित है, न कि उन भाषाई संसाधनों के एकीकृत और गतिशील उपयोग पर।
- **विकल्प 2:** ‘भाषा और विषयवस्तु सीखने के लिए एक भाषा से दूसरी भाषा का इस्तेमाल।’ यह विकल्प कोड-स्विचिंग के समान है, जहाँ व्यक्ति दो अलग-अलग भाषाओं के बीच स्विच करते हैं। ‘ट्रांसलैंग्वेजिंग’ इससे आगे बढ़कर सभी भाषाई संसाधनों को एक साथ इस्तेमाल करने पर जोर देता है।
- **विकल्प 3:** ‘एक भाषा से दूसरी भाषा में अन्तरण का भाषायी कौशल।’ यह विकल्प ‘ट्रांसलैंग्वेजिंग’ के मूल को दर्शाता है। यह इस बात पर जोर देता है कि यह विभिन्न भाषाओं या भाषाई प्रणालियों के बीच कुशलतापूर्वक अंतरण (transfer) करने की एक भाषाई क्षमता या कौशल है। यह बहुभाषी व्यक्तियों की अंतर्निहित क्षमता का वर्णन करता है।
- **विकल्प 4:** ‘अध्यापक द्वारा शिक्षार्थियों की भाषा का इस्तेमाल।’ यह शिक्षक द्वारा अपनाई जाने वाली एक शिक्षण रणनीति हो सकती है, लेकिन यह ‘ट्रांसलैंग्वेजिंग’ की व्यापक परिभाषा नहीं है, जो शिक्षार्थी और शिक्षक दोनों के भाषा उपयोग पर लागू होती है।

‘ट्रांसलैंग्वेजिंग’ के प्रमुख पहलू

यह समझने के लिए कि ‘ट्रांसलैंग्वेजिंग’ क्यों महत्वपूर्ण है, इसके कुछ मुख्य पहलुओं पर ध्यान देना आवश्यक है:

- **संपूर्ण भाषाई भंडार का उपयोग:** इसमें शिक्षार्थी अपनी जानी हुई सभी भाषाओं और संबंधित भाषाई संसाधनों का समग्र रूप से उपयोग करते हैं।
- **अर्थ निर्माण में सहायक:** यह अवधारणा मानती है कि भाषाओं को अलग-अलग डिब्बों में नहीं रखा जा सकता; इसके बजाय, वे एक-दूसरे को समृद्ध करते हैं और अर्थ निर्माण में मदद करते हैं।
- **स्वाभाविक प्रक्रिया:** बहुभाषी व्यक्ति अक्सर अनजाने में ही इस तरह से संवाद करते हैं, और 'ट्रांसलैंग्वेजिंग' इसे एक सचेत और मूल्यवान शैक्षिक उपकरण के रूप में देखता है।
- **कौशल विकास:** यह भाषा सीखने वालों के लिए अपनी पूरी भाषाई क्षमता का उपयोग करके अधिक प्रभावी ढंग से सीखने और संवाद करने का अवसर प्रदान करता है।

इसलिए, 'एक भाषा से दूसरी भाषा में अन्तरण का भाषायी कौशल' 'ट्रांसलैंग्वेजिंग' की अवधारणा को सबसे अच्छी तरह से दर्शाता है, क्योंकि यह बहुभाषी संचार और सीखने में शामिल भाषाई क्षमता और प्रक्रिया पर प्रकाश डालता है।

121. Answer: a

Explanation:

प्रश्नार्थ - 'आर्यभटीयम्' किसकी रचना है?

स्पष्टीकरण - प्रस्तुत गद्यांश का विषय प्राचीन भारत के महान वैज्ञानिक आर्यभट और उनका अनेक क्षेत्रों में योगदान कहा जा सकता है। उनसे जुड़ी यह बातें गद्यांश में कहे हैं-

- भारत सरकार ने उनके सन्मान में आर्यभट नामक अंतरिक्ष उपग्रह किया है।
- इनका काल 476 इसवी है तथा इनका एक प्रसिद्ध ग्रन्थ 'आर्यभटीयम्' है। यह खगोलविज्ञान के लिए एक महत्वपूर्ण ग्रन्थ है।
- उनका योगदान ज्योतिषशास्त्र, अंकगणित, बीजगणित, भूमिति, त्रिकोणमिति, ग्रहगति, खगोलविज्ञान आदि अनेक विषयों में है।

अतः उचित पर्याय आर्यभटस्य होता है।

122. Answer: a

Explanation:

आर्यभटीयम्: खगोलविज्ञान का एक प्रसिद्ध ग्रन्थ

यह प्रश्न दिए गए संस्कृत गद्यांश पर आधारित है, जिसमें प्राचीन भारतीय वैज्ञानिक आर्यभट्ट और उनके कार्यों का वर्णन किया गया है। गद्यांश बताता है कि भारत में प्राचीन काल में कई महान वैज्ञानिक थे, और आर्यभट्ट उनमें से एक प्रमुख थे। उनके सम्मान में भारत सरकार ने अपने अंतरिक्ष उपग्रह का नाम 'आर्यभट' रखा। आर्यभट्ट का जन्म 476 ईस्वी में पाटलिपुत्र में हुआ था।

प्रश्न का विश्लेषण

प्रश्न पूछता है: 'आर्यभटीयम्' कस्य विषयस्य पुस्तकम् अस्ति?

इसका अर्थ है, 'आर्यभटीयम्' किस विषय की पुस्तक है?

गद्यांश से उत्तर की पहचान

गद्यांश में स्पष्ट रूप से उल्लेख किया गया है:

"अस्य ग्रन्थस्य नाम 'आर्यभटीयम्' अस्ति। इदम् समस्तेऽपि जगति खगोलविज्ञानस्य सुविख्यातं पुस्तकम् अस्ति।"

इस वाक्य का अर्थ है कि 'आर्यभटीयम्' नामक ग्रन्थ (पुस्तक) पूरे विश्व में खगोलविज्ञान (astronomy) का एक सुप्रसिद्ध (world-famous) पुस्तक है।

गद्यांश में यह भी बताया गया है कि आर्यभट्ट का ज्योतिषशास्त्र, अंकगणित, बीजगणित, ज्यामिति, त्रिकोणमिति और ग्रह-गति जैसे विषयों में महत्वपूर्ण योगदान था, जो सभी खगोलविज्ञान से संबंधित हैं।

विकल्पों का मूल्यांकन

अब हम दिए गए विकल्पों पर विचार करते हैं:

- 1. खगोलविज्ञानस्य (खगोलविज्ञान का): यह विकल्प गद्यांश में दिए गए विवरण से सीधे मेल खाता है।
- 2. समुद्रविज्ञानस्य (समुद्रविज्ञान का): गद्यांश में समुद्रविज्ञान का कोई उल्लेख नहीं है।
- 3. ब्रह्मविज्ञानस्य (ब्रह्मविज्ञान का): गद्यांश में ब्रह्मविज्ञान का कोई उल्लेख नहीं है।
- 4. अध्यात्मस्य (अध्यात्म का): गद्यांश में अध्यात्म का उल्लेख नहीं है, बल्कि वैज्ञानिक योगदान पर जोर दिया गया है।

निष्कर्ष

गद्यांश के अनुसार, 'आर्यभटीयम्' खगोलविज्ञान के विषय पर आधारित एक अत्यंत महत्वपूर्ण और विश्वविख्यात पुस्तक है। इसलिए, सही उत्तर विकल्प 1 है।

सही उत्तर: 1. खगोलविज्ञानस्य

123. Answer: b

Explanation:

आर्यभट्टस्य पृथ्वीविषयकं मतं

प्रस्तुतगद्यांशः प्राचीनभारतीयवैज्ञानिकः आर्यभट्टः तस्य च विचाराणां विषये विस्तृतं वर्णनं करोति। विशेषतः, पृथ्वीयाः गतिकविषये तस्य मतं निरूपितम् अस्ति। गद्यांशस्य मुख्यं उद्देश्यं आर्यभट्टस्य वैज्ञानिकयोगदानं, विशेषतः खगोलविज्ञानक्षेत्रे, प्रकाशयितुम् अस्ति।

गद्यांशस्य आधारेण आर्यभट्टस्य मान्यता

गद्यांशे स्पष्टं लिखितम् अस्ति यत्, “अनेनैव सर्वप्रथमं साधितं यत् पृथिवी चलति।” (Aryabhata was the first to prove that the Earth moves)। अत्र 'चलति' इत्यस्य अर्थः 'गतिशीला अस्ति' (is moving) इति। गद्यांशः अपि स्पष्टयति यत्, “एवमेव गतिशीलायां पृथिव्याम् अवस्थितः मानवः पृथिवीं स्थिरां मन्यते सूर्यादि-ग्रहान् गतिशीलान् च वेत्ति।” (Similarly, a person situated on the moving Earth considers the Earth to be stationary and perceives the Sun and other planets as moving)। अस्मात् जायते यत् आर्यभट्टस्य मुख्यं मतं आसीत् यत् पृथ्वी स्थिरं न अपितु अपि तु गतिशीला अस्ति।

विकल्पानां विश्लेषणम्

प्रश्नोत्तरं “आर्यभट्टस्य का मान्यता अस्ति?” इति अस्ति। अधोलिखितं विश्लेषणं प्रत्येकं विकल्पस्य गद्यांशस्य आधारेण परीक्षणं करोति:

- विकल्प 1: पृथ्वी स्थिरा अस्ति

एषः विकल्पः गद्यांशस्य “पृथिवी चलति” इति वाक्येन सह असंगतम् अस्ति। गद्यांशानुसारं, आर्यभट्टः पृथ्वीं स्थिरां न अमन्यत।

- विकल्प 2: पृथ्वी चला अस्ति

गद्यांशः स्पष्टं कथयति यत् आर्यभट्टेनैव “सर्वप्रथमं साधितं यत् पृथिवी चलति”। अतः, एषः विकल्पः

गद्यांशस्य मुख्य विचारस्य सह पूर्णतया मेलं खादयति।

- विकल्प 3: पृथ्वी गतिशीला नास्ति

एषः विकल्पः प्रत्यक्षं गद्यांशस्य “पृथिवी चलति” इति कथनेन सह विरोधे वर्तते।

- विकल्प 4: पृथ्व्याः गतिकारणात् सूर्योऽपि गतिमान् भवति

गद्यांशः कथयति यत् “गतिशीलायां पृथिव्याम् अवस्थितः मानवः पृथिवीं स्थिरां मनुते सूर्यादि-ग्रहान् गतिशीलान् च वेत्ति”। अत्र मानवः सूर्य-ग्रहान् गतिशीलान् पश्यति इति उक्तं, परन्तु “पृथिव्याः गतिकारणात् सूर्योऽपि गतिमान् भवति” इति प्रत्यक्षं कथनं गद्यांशे नास्ति। यद्यपि पृथ्वीयाः घूर्णनात् सूर्यः गतिमान् इव दृश्यते, तथापि गद्यांशः मुख्यतया पृथ्वीयाः स्वयम् गतिशीला इति सत्यम् प्रतिपादयति। अतः, विकल्प 2 अधिकं प्रत्यक्षं तथा च संगतम् उत्तरम् अस्ति।

निष्कर्षः

गद्यांशस्य उपरि अन्तः उपर्युक्तं विश्लेषणं स्पष्टं करोति यत् आर्यभट्टस्य मुख्यं मतं यत् पृथ्वी गतिशीला अस्ति, अर्थात् पृथ्वी चला अस्ति।

124. Answer: d

Explanation:

Understanding Why Sanskrit Language is Considered Dhanyā

The question asks to identify the reason why the Sanskrit language is described as 'dhanyā' (blessed or fortunate) based on the provided Sanskrit passage. The passage discusses the significant contributions of ancient Indian scientists, such as Aryabhata, in various fields including astronomy and mathematics.

Passage Analysis for 'Dhanyā' Reason

The passage praises ancient Indian scientists and their discoveries. It specifically mentions Aryabhata as a prominent scientist whose work in fields like astronomy, mathematics, algebra, and geometry was groundbreaking. The concluding sentence of the passage is crucial for answering the question:

"धन्या संस्कृतभाषा यस्याम् एवंविधानां वैज्ञानिकानां विचाराः आविष्काराश्च विराजन्ते।"

This sentence translates to: "Blessed is the Sanskrit language in which such thoughts and discoveries of scientists are present." This directly links the 'dhanyā' status of the Sanskrit language to the presence of scientific thoughts and discoveries within it.

Statement-wise Analysis of Options

- Option 1: संस्कृतभाषायाः सौष्ठवं प्रसिद्धम् अस्ति ।

This translates to "The elegance of Sanskrit language is famous." While Sanskrit is known for its elegance, the passage does not cite this elegance as the specific reason for it being called 'dhanyā'.

- Option 2: संस्कृतभाषा व्याकरणदृष्ट्या सर्वोत्तमा अस्ति ।

This means "Sanskrit language is supreme from a grammatical perspective." The passage focuses on the scientific content preserved in Sanskrit, not its grammatical perfection, as the reason for its status.

- Option 3: संस्कृतभाषायां महान्तः ग्रन्थाः रचिता ।

This translates to "Great texts are composed in Sanskrit language." While the passage does mention scientific texts, it specifically points to the *thoughts and discoveries of scientists* as the reason, rather than just 'great texts' in general.

- Option 4: संस्कृतभाषायां वैज्ञानिकानां विचाराः आविष्काराश्च विराजन्ते ।

This means "Thoughts and discoveries of scientists are present in Sanskrit language." This option perfectly aligns with the concluding statement of the passage, identifying the presence of scientific thoughts and discoveries as the reason why Sanskrit is considered 'dhanyā'.

Final Conclusion

The passage explicitly states that Sanskrit is 'dhanyā' because it contains the thoughts and discoveries of scientists. Therefore, the fourth option is the correct

answer, as it directly reflects this statement from the text.

125. Answer: c

Explanation:

This solution explains Aryabhata's contribution to mathematics, specifically concerning numbers, based on the provided Sanskrit passage.

Aryabhata's Contribution to Numbers

The question asks about Aryabhata's specific contribution regarding numbers (संख्यानां विषये आर्यभट्टस्य किम् योगदानम्). We need to carefully examine the provided Sanskrit passage to find the relevant information.

Passage Analysis: Aryabhata's Work

The passage highlights that Aryabhata was a great scientist (महान् वैज्ञानिकः) from ancient India. It mentions his birthplace as Pataliputra in 476 CE and his famous work named 'Aryabhatiya' (आर्यभटीयम्), which is a renowned book on astronomy (खगोलविज्ञानस्य) globally. His significant contributions are noted in astrology (ज्योतिषशास्त्रस्य), arithmetic (अङ्कगणित), algebra (बीजगणित), geometry (भूमिति), trigonometry (त्रिकोणमिति), planetary motion (ग्रहगति), and astronomy (खगोलविज्ञान). The passage emphasizes that his research was remarkable given the limited tools available during his era. A key point mentioned is his discovery related to handling numbers:

"गणितविद्यायाः महती संख्या कथम् अल्पीयसा अक्षरसङ्केतेन जातव्या, इत्यपि आर्यभटेन अतिप्राचीनकाले आविष्कृतम्।"

This sentence translates to: "How a large number can be represented or understood using minimal symbols/notation, this concept was also discovered by Aryabhata in ancient times."

Evaluating the Options

Let's analyze each option in light of the passage:

- **Option 1:** "संख्यानां प्रथमः आविष्कारः आर्यभटेन कृतम्।" (The first invention of numbers was done by Aryabhata.)
 - The passage identifies Aryabhata as a scientist and mathematician who made significant discoveries, but it does not state that he invented numbers themselves. Numbers existed long before Aryabhata.
- **Option 2:** "आर्यभट्टस्य गणनाप्रक्रिया मूलतः वैदिकी अस्ति।" (Aryabhata's calculation process is basically Vedic.)
 - The passage does not mention anything about Aryabhata's calculation methods being Vedic. It focuses on his discoveries and contributions to various fields.
- **Option 3:** "आर्यभटेन एतद् आविष्कृतम् यत् कथं महतीसंख्या अल्पीयसा अक्षरसंकेतेन ज्ञातुं शक्यते।" (Aryabhata discovered how a large number can be known with minimal notation.)
 - This option directly corresponds to the information found in the passage: "How a large number can be represented using minimal symbols/notation, this was discovered by Aryabhata." This accurately describes his contribution regarding the representation and understanding of large numbers.
- **Option 4:** "संख्यानां जन्म सांख्यदर्शनात् सञ्जाताः।" (The birth of numbers happened from Sankhya Darshana.)
 - The passage does not link the origin of numbers to the Sankhya philosophy (सांख्यदर्शन). This statement is outside the scope of the provided text.
- **Option 5:** This option is empty and thus irrelevant.

Conclusion on Aryabhata's Contribution

Based on the direct evidence from the Sanskrit passage, Aryabhata's significant contribution concerning numbers was the discovery of methods to represent or understand large numbers using a concise or minimal set of symbols or notations. Option 3 accurately reflects this contribution.

126. Answer: b

Explanation:

Understanding the Sanskrit Term 'अन्यतमः'

The provided Sanskrit passage discusses the contributions of ancient Indian scientists, highlighting Aryabhata. The question asks for the meaning of the specific word 'अन्यतमः' (anyatamah) as used in the text.

Contextual Meaning of 'अन्यतमः'

The word 'अन्यतमः' appears in the sentence: "तेष्वेव प्राक्तनवैज्ञानिकेषु आर्यभटः अन्यतमः।" This translates to "Among those ancient scientists, Aryabhata was one of the foremost/best." The term 'अन्यतमः' is the superlative form (like '-est' or 'most' in English) of the adjective 'अन्य' (anya), often meaning 'other' or 'different'. However, in the context of a list or group, 'अन्यतमः' specifically denotes "one among many others," implying being the best, the foremost, or one of the most distinguished individuals in that group.

Analysis of Options

Let's examine the given options to find the best fit for the meaning of 'अन्यतमः':

- **Option 1: 'अन्यैः स्वीकृतः'** (anyaiḥ svīkṛtaḥ) – This means "accepted by others." While a great scientist might be accepted by others, this doesn't capture the specific superlative sense of 'अन्यतमः'.
- **Option 2: 'सर्वोत्तमः'** (sarvōttamaḥ) – This translates directly to "the best" or "supreme." This aligns perfectly with the context of identifying Aryabhata as one of the most important scientists among many ancient ones. It conveys the idea of being the foremost.
- **Option 3: 'परोपकारी'** (parōpakārī) – This means "altruistic" or "helpful to others." While Aryabhata might have been helpful, this meaning is unrelated to the word 'अन्यतमः'.

- Option 4: 'बहुमान्यः' (bahumān'yah) – This means "highly respected" or "esteemed." While Aryabhata is certainly highly respected, 'अन्यतमः' specifically points towards being the best or foremost in rank or quality, rather than just being respected. 'सर्वोत्तमः' is a more precise equivalent in this context.

Conclusion

Based on the grammatical form and the context provided in the passage, 'अन्यतमः' signifies being one of the best or the foremost among a group. Therefore, 'सर्वोत्तमः' is the most accurate meaning.

The correct option is 2.

127. Answer: c

Explanation:

वेत्ति शब्दस्य पर्यायः

प्रस्तुतस्य गद्यांशस्य आधारेण, 'वेत्ति' शब्दस्य उचितं पर्यायपदं चिन्वितव्यम्। गद्यांशः भारतीयवैज्ञानिकः आर्यभट्टः तस्य च अविष्काराः विषये अस्ति।

'वेत्ति' इति शब्दः 'विद्' (विद्) धातोः 'वर्तमानकालः, प्रथमपुरुषः, एकवचनम्' रूपम् अस्ति। अस्य अर्थः 'जानाति', 'अवगच्छति' वा भवति।

गद्यांशे एकं वाक्यम् अस्ति: "एवमेव गतिशीलायां पृथिव्याम् अवस्थितः मानवः पृथिवीं स्थिरां मनुते सूर्यादि-ग्रहान् गतिशीलान् च वेत्ति।" अत्र 'वेत्ति' इति पदेन 'जानाति' वा 'अवगच्छति' इति अर्थः अभिप्रेतः अस्ति। अर्थात्, पृथ्वीस्थः मानवः सूर्य-ग्रहाणां गतिं जानाति (अवगच्छति)।

विकल्पानां विश्लेषणम् (Analysis of Options)

- मनुते (Manute): अस्य अर्थः 'चिन्तयति' (thinks) वा 'मन्यते' (considers) इति भवति। यद्यपि 'वेत्ति' कदाचित् 'मनुते' इति अर्थं प्रति बोधयितुं शक्नोति, तथापि 'जानाति' इति अर्थः अधिकं समीचीनः।

- साधयति (Sādhayati): अस्य अर्थः 'सिद्धिं प्राप्नोति' (achieves) वा 'सिद्धं करोति' (proves) इति भवति। इदं पदं 'वेत्ति' इत्यस्य अर्थस्य असम्बद्धम् अस्ति।
- जानाति (Jānāti): अस्य अर्थः 'ज्ञानं प्राप्नोति' (knows) इति भवति। 'विद' धातोः (यस्मात् 'वेत्ति' रूपं निष्पन्नम्) अर्थः 'ज्ञानम्' इति भवति। अतः, 'जानाति' इति पदं 'वेत्ति' इत्यस्य प्रत्यक्षः पर्यायः अस्ति।
- पश्यति (Paśyati): अस्य अर्थः 'दृष्टिं करोति' (sees) इति भवति। 'वेत्ति' केवलं 'पश्यति' इति नैव, अपितु 'अवगच्छति' इति अर्थं धारयति।

निष्कर्षः (Conclusion)

उपरोक्त विश्लेषणानुसारं, 'वेत्ति' शब्दस्य सर्वाधिकः उपयुक्तः पर्यायः 'जानाति' अस्ति। वाक्येऽस्मिन् 'वेत्ति' पदं ज्ञानेन अवगच्छति इति अर्थं द्योतयति।

128. Answer: a

Explanation:

Sanskrit Suffix Analysis: 'चमत्कृति'

The provided text is a Sanskrit passage discussing the renowned ancient Indian scientist Aryabhata. The question asks to identify the suffix (प्रत्ययः) in the Sanskrit word 'चमत्कृति'. This word is significant as it describes the impact of Aryabhata's scientific contributions.

Passage Context: Aryabhata and 'चमत्कृति'

The passage details Aryabhata's legacy, mentioning his birth in 476 CE in Pataliputra and his seminal work 'Aryabhatiya'. It emphasizes his groundbreaking research in various fields like mathematics, astronomy, and trigonometry. The word 'चमत्कृति' appears in the context of his discoveries evoking wonder ('विस्मयः'), stating that the uniqueness of his subtle discoveries ('सूक्ष्माणामविष्काराणां वैशिष्ट्यानि') generates wonder ('चमत्कृतिं जनयिष्यन्ति').

'चमत्कृति' Word Etymology

To find the suffix in 'चमत्कृति', we need to understand Sanskrit word formation rules. The word 'चमत्कृति' signifies a state of wonder or amazement, or the quality of causing wonder. It is formed from a base related to 'wonder' and a suffix that creates an abstract noun indicating such a state or quality.

The base word here is derived from 'चमत्', meaning wonder or surprise.

Key Sanskrit Suffixes: *ti* and *ktiN*

Sanskrit grammar extensively uses suffixes to derive words. Some common suffixes used to form abstract nouns denoting a state or quality include:

- ति (*ti*): Forms feminine abstract nouns, e.g., 'गति' (gati - movement) from the root $\sqrt{gam}$.
- क्तिन् (*ktiN*): Also forms feminine abstract nouns, often from verbal roots or specific stems. This suffix, after phonological adjustments according to rules like Panini's Ashtadhyayi (e.g., 7.2.11, 7.3.33, 6.4.145), often results in a final form ending in 'इ' (*i*). It conveys the sense of action or state.

Analyzing the Suffix Options

Let's examine the given options:

- 1. क्तिन् (*ktiN*): This suffix is used to form abstract nouns like 'चमत्कृति' from the stem 'चमत्'. The derivation follows standard grammatical patterns: 'चमत्' + ' *ktiN*' → 'चमत्कृति'. This is a grammatically sound formation indicating the state of wonder.
- 2. तिन् (*tiN*): This is not a recognized suffix in Sanskrit for forming abstract nouns in this context.
- 3. ति (*ti*): While ' *ti*' is a valid suffix, the specific word 'चमत्कृति' is typically analyzed as being derived using the ' *ktiN*' suffix, which accounts for the final 'इ' form.
- 4. वितिन् (*vitiN*): This is not a standard Sanskrit suffix.

Correct Suffix Determination: *ktiN*

The word 'चमत्कृति' represents the state or quality of causing wonder. Grammatically, it is derived from the stem 'चमत्' by adding the suffix 'ktiN'. This suffix is appropriate for forming feminine abstract nouns denoting a state or action. Therefore, the suffix in 'चमत्कृति' is 'ktiN'.

The correct option is the one that includes 'ktiN'.

129. Answer: c

Explanation:

यह प्रश्न दिए गए संस्कृत गद्यांश पर आधारित है, जिसमें विन्ध्याटवी के एक तपस्वी मुनि और उनके द्वारा पालित एक चूहे के बच्चे की कहानी का वर्णन है। प्रश्न पूछता है कि मुनि ने उस मूषकशावक को कैसे पोषित किया?

मूषकशावक पोषण का विवरण

गद्यांश के अनुसार, महातपा नामक एक मुनि विन्ध्याटवी में रहते थे। एक बार उन्होंने देखा कि एक कौवे के मुख से एक चूहे का बच्चा नीचे गिर गया था।

गद्यांश में स्पष्ट रूप से उल्लेख किया गया है:

"ततो जातकारुण्येन तेन मुनिना स नीवारकणैः परिवर्धितः।"

इस वाक्य का अर्थ है कि मुनि को उस मूषकशावक पर दया आ गई और उन्होंने उसे 'नीवारकणैः' से पोषित किया। 'नीवारकणैः' का अर्थ है नीवार नामक जंगली घास के दाने या बीज। इस प्रकार, मुनि ने नीवार के दानों का उपयोग करके उस चूहे के बच्चे का पालन-पोषण किया।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों पर विचार करके यह समझें कि कौन सा विकल्प गद्यांश के अनुसार सही है:

- **वन्यफलैः (वन्य फल):** गद्यांश में मुनि द्वारा मूषकशावक को वन्य फलों से पोषित करने का कोई उल्लेख नहीं है।
- **सरोवरजलेन (सरोवर का जल):** गद्यांश में यह नहीं बताया गया है कि मुनि ने मूषकशावक को केवल सरोवर के जल से पोषित किया।

- **नीवारकणै: (नीवार के दाने):** गद्यांश में स्पष्ट रूप से लिखा है कि मुनि ने मूषकशावक को 'नीवारकणै:' से परिवर्धित (पालित-पोषित) किया। यह गद्यांश के अनुसार सही उत्तर है।
- **तन्दुलै: (चावल के दाने):** गद्यांश में कहीं भी चावल के दानों (तन्दुलै:) से मूषकशावक को पोषित करने का उल्लेख नहीं है।

मुनि द्वारा मूषकशावक का पोषण

गद्यांश में मिली जानकारी के आधार पर, यह स्पष्ट रूप से पता चलता है कि महातपा नामक मुनि ने करुणावश उस मूषकशावक को नीवारकणै: (नीवार घास के दानों) से पाल पोष कर बड़ा किया। इसलिए, प्रश्न का सही उत्तर नीवारकणै: है।

130. Answer: b

Explanation:

मूषक का आश्रम में आगमन: गद्यांश का विश्लेषण

गद्यांश के प्रासंगिक अंश का विश्लेषण

प्रस्तुत गद्यांश में, महातपा नामक एक ऋषि का वर्णन है जो विन्ध्याटवी में रहते थे। गद्यांश का वह अंश जो इस प्रश्न का उत्तर देता है, वह है:

"तेनैकदा उटजद्वारे काकमुखाद् भ्रष्टो मूषकशावको दृष्टः।"

इस वाक्य का अर्थ है कि ऋषि ने एक बार अपनी कुटिया के द्वार पर एक छोटा चूहा (मूषकशावक) देखा, जो कौवे (काक) के मुख से गिर गया था।

मूषक के आगमन की व्याख्या

प्रश्न पूछता है कि चूहा ऋषि के आश्रम में कैसे पहुँचा। गद्यांश स्पष्ट रूप से बताता है कि चूहा कौवे के मुख से गिरा था।

- 'काक' शब्द का अर्थ कौवा होता है।
- विकल्पों में, 'वायस' शब्द का प्रयोग किया गया है, जिसका अर्थ भी कौवा होता है।

अतः, चूहा ऋषि के आश्रम में कौवे (वायस) के मुख से गिरने के कारण समागत हुआ।

विकल्पों का मूल्यांकन

- विकल्प 1: विडालमुखात् पतितः - इसका अर्थ है कि चूहा बिल्ली के मुख से गिरा। गद्यांश में ऐसा कोई उल्लेख नहीं है।
- विकल्प 2: वायसमुखात् पतितः - इसका अर्थ है कि चूहा कौवे के मुख से गिरा। यह गद्यांश के कथन "काकमुखाद् भ्रष्टो..." से मेल खाता है।
- विकल्प 3: कपोतमुखात् पतितः - इसका अर्थ है कि चूहा कबूतर के मुख से गिरा। गद्यांश में ऐसा कोई उल्लेख नहीं है।
- विकल्प 4: कुक्कुरमुखात्पतितः - इसका अर्थ है कि चूहा कुत्ते के मुख से गिरा। गद्यांश में ऐसा कोई उल्लेख नहीं है।

गद्यांश के अनुसार, चूहा कौवे (वायस) के मुख से गिरा था, इसलिए विकल्प 2 सही उत्तर है।

131. Answer: b

Explanation:

Passage Analysis: The Sage's Transformations

This question requires a careful reading of the provided Sanskrit passage to understand the sequence of events and identify which character experienced sorrowful thoughts. The passage narrates a story involving a sage and transformations of animals.

Passage Overview: The Sage and Transformations

The story unfolds as follows:

- A sage named Mahatapa finds and raises a mouse.
- The sage transforms the mouse into a cat. The passage states: 'तदा तपः प्रभावात् तेन मुनिना मूषको बलिष्ठो विडालः कृतः।' (Then, by the influence of his penance, that sage made the mouse a strong cat.) This implies the mouse underwent a transformation into a cat.

- Next, this cat, being afraid of a dog, is transformed into a dog by the sage. The text says: 'बिडालोऽयं कुक्कुरात् विभेति इत्यवगम्य असौ मुनिना कुक्कुरः कृतः।' (Understanding this cat fears the dog, the sage made it a dog.)
- Subsequently, this dog, fearing a tiger, is transformed into a tiger by the sage. The passage states: 'कुक्कुरस्य व्याघ्रात् महत्भयम् इति मत्वा तेन स व्याघ्रः कृतः।' (Thinking the dog has great fear from the tiger, by him, that tiger was made.)

Pinpointing the Sorrowful Thought

The question asks: 'सव्यथः कोऽचिन्तयत् ?' which means "Who thought with sorrow?". The passage explicitly answers this:

'एतच्छ्रुत्वा स व्याघ्रः सव्यथोऽचिन्तयत् - "यावदयं मुनिर्जीवति तावदिदं मम स्वरूपाख्यानम् अपकीर्तितम् एव स्थास्यति।"'

This sentence clearly identifies that **the tiger (स व्याघ्रः)** was the one who **thought sorrowfully (सव्यथोऽचिन्तयत्)**. The reason for its sorrow was the ongoing rumour or identification connecting it back to the mouse, initiated by the sage's actions.

Tracing the Identity of the Sorrowful Thinker

To correctly answer the question, we must connect the 'tiger' mentioned above to its original form. As detailed in the transformation sequence:

- The process began with a **mouse**.
- The mouse was transformed into a cat.
- The cat was transformed into a dog.
- The dog was transformed into a tiger.

The passage confirms this lineage when people remark: 'अनेन मुनिना मूषकोऽयं व्याघ्रतां नीतः।' (This sage has brought this mouse to the state of a tiger.) This means the entity now in the form of a tiger was originally a mouse.

Evaluating the Options

Let's evaluate the given options based on our understanding:

- Option 1: मुनिः (Sage)

The sage is depicted as the agent of transformation, not the subject experiencing sorrowful thoughts about reputation in this context.

- Option 2: व्याघ्रीभूतः मूषकः (The mouse which became a tiger)

This option correctly identifies the character. The entity that thought sorrowfully was the tiger, and this tiger was originally the mouse that underwent transformations. This aligns perfectly with the narrative.

- Option 3: कुक्कुरः (Dog)

The dog was an intermediate stage. The passage specifically states the tiger was thinking sorrowfully, not the dog.

- Option 4: विडालः (Cat)

Similarly, the cat was an earlier form in the transformation sequence. The sorrowful thoughts were experienced by the tiger.

Conclusion

The passage clearly states that the tiger thought sorrowfully. Furthermore, it establishes that this tiger originated from the mouse. Therefore, the correct identification of the character who thought sorrowfully is the mouse that had been transformed into a tiger.

132. Answer: b

Explanation:

प्रश्नार्थ - 'मूषकनिर्विशेषम्' इस शब्द का गद्यांश में कौन सा अर्थ है?

स्पष्टीकरण - जब मुनि मूषक को बिल्ला बाद में कुत्ता और उसके बाद बाघ बनाते हैं तब गद्यांश में कहा है - 'परं व्याघ्रमपि मूषकनिर्विशेषं एव पश्यति स मुनिः' अर्थात् 'पर बाघ भी मूषक से अभिन्न है यही मुनि देखते थे।'

अतः 'मूषकनिर्विशेषम्' का अर्थ बाघ का मूषक से अलग न होना अर्थात् 'मूषकाद् अभिन्नम्' यह होता है।

133. Answer: a

Explanation:

गद्यांश में 'निर्भय' शब्द का व्याकरणिक विश्लेषण

यह प्रश्न दिए गए संस्कृत गद्यांश के आधार पर एक शब्द के व्याकरणिक प्रकार की पहचान करने के बारे में है। गद्यांश एक ऋषि की कहानी सुनाता है जिसने एक चूहे को उसकी निडरता से प्रभावित होकर, विभिन्न जानवरों में बदला।

गद्यांश और वाक्य का विश्लेषण

गद्यांश बताता है कि ऋषि ने एक चूहे को पाला और उसे अपनी तपस्या की शक्ति से क्रमशः एक बिल्ली, फिर एक कुत्ता और फिर एक बाघ बनाया। जिस वाक्य पर प्रश्न केंद्रित है, वह है:

"ततः प्रभृति स कुक्कुरः इतस्ततः निर्भयं भ्रमति स्म।"

इस वाक्य का अर्थ है: "उस समय से, वह कुत्ता इधर-उधर निडरतापूर्वक घूमता था।"

'निर्भय' शब्द की पहचान

हमें वाक्य में 'निर्भयम्' शब्द के कार्य को पहचानना है। यह शब्द क्रिया 'भ्रमति स्म' (घूमता था) के बारे में अतिरिक्त जानकारी प्रदान करता है। यह बताता है कि कुत्ते का घूमना किस प्रकार का था - भय के बिना, यानी निडरतापूर्वक।

'निर्भयम्' का व्याकरणिक प्रकार

आइए विभिन्न व्याकरणिक श्रेणियों पर विचार करें:

- क्रियाविशेषणम् (Adverb): क्रियाविशेषण वे शब्द होते हैं जो क्रिया, विशेषण या अन्य क्रियाविशेषण के अर्थ को संशोधित करते हैं। वे क्रिया के होने का तरीका, स्थान, समय, कारण

आदि बताते हैं। इस वाक्य में, 'निर्भयम्' क्रिया 'भ्रमति स्म' के होने के तरीके (manner) का वर्णन करता है। इसलिए, यह एक क्रियाविशेषण है।

- **विशेषणम् (Adjective):** विशेषण संज्ञा या सर्वनाम को संशोधित करता है। उदाहरण के लिए, 'निर्भयः कुक्कुरः' (एक निडर कुत्ता) में 'निर्भयः' एक विशेषण है जो 'कुक्कुरः' (कुत्ता - संज्ञा) की विशेषता बताता है। चूँकि 'निर्भयम्' यहाँ क्रिया को संशोधित कर रहा है, न कि किसी संज्ञा को, यह विशेषण नहीं है।
- **सर्वनामः (Pronoun):** सर्वनाम संज्ञा के स्थान पर प्रयुक्त होते हैं (जैसे 'वह', 'यह')। 'निर्भयम्' न तो कोई संज्ञा है और न ही संज्ञा के स्थान पर प्रयुक्त हो रहा है।
- **संज्ञा (Noun):** संज्ञा किसी व्यक्ति, स्थान, वस्तु या विचार का नाम है। 'निर्भयम्' यहाँ कोई नाम नहीं है।

निष्कर्ष

वाक्य में क्रिया 'भ्रमति स्म' के साथ 'निर्भयम्' का प्रयोग क्रिया के होने की रीति (निडरतापूर्वक) को दर्शाने के लिए किया गया है। इसलिए, व्याकरणिक दृष्टि से 'निर्भयम्' एक क्रियाविशेषण है।

134. Answer: b

Explanation:

संस्कृत प्रत्यय: 'शतृ' का प्रयोग: 'अनुधावन्' शब्द का विश्लेषण

इस प्रश्न का उद्देश्य दिए गए गद्यांश में प्रयुक्त 'अनुधावन्' शब्द में लगे प्रत्यय (suffix) की पहचान करना है। यह शब्द 'धाव्' धातु (जिसका अर्थ है 'दौड़ना') से संबंधित है, और इसके आगे 'अनु' उपसर्ग लगा है, जिसका अर्थ है 'पीछे' या 'साथ में'। तो, 'अनुधावन्' का अर्थ हुआ 'पीछे दौड़ता हुआ'। यह संस्कृत में वर्तमान कृदन्त (present active participle) का रूप है।

'अनुधावन्' शब्द की व्युत्पत्ति (Etymology):

संस्कृत व्याकरण के अनुसार, वर्तमान कृदन्त (active present participle) बनाने के लिए 'शतृ' (śatṛ) प्रत्यय का उपयोग किया जाता है। यह प्रत्यय क्रिया के कर्ता (subject) के वर्तमान में चल रहे कार्य को दर्शाता है।

- **धातु (Root):** 'धाव्' (dhāv) - दौड़ना

- उपसर्ग (Prefix): 'अनु' (anu) - पीछे
- प्रत्यय (Suffix): 'शत्' (śatr) - वर्तमान कृदन्त के लिए

जब 'शत्' प्रत्यय किसी धातु के साथ जुड़ता है, तो उसका रूप 'त्' (t) में समाप्त होता है (जैसे, पठ् + शत् = पठत्)।

'अनु' + 'धाव्' + 'शत्' के योग से, 'धाव्' धातु में 'शत्' प्रत्यय लगने पर, 'धावत्' (dhāvat) बनता है।

'अनुधावत्' (anudhavat) यह कृदन्त का मूल रूप है। जब हम इसका पुल्लिंग, प्रथमा विभक्ति, एकवचन (masculine nominative singular) रूप बनाते हैं, तो यह 'अनुधावन्' (anudhavan) हो जाता है, क्योंकि 'शत्' प्रत्यय से बने कृदन्त के पुल्लिंग रूप में 'न्' (n) का आगम होता है।

अन्य प्रत्यय विकल्पों का विश्लेषण:

- ल्युट् (lyut): यह प्रत्यय सामान्यतः क्रिया से कर्ता या कर्मवाच्य भविष्यत् कृदन्त (agent noun or passive future participle) बनाने के लिए प्रयोग होता है, और इसका रूप 'अन्' (an) या 'अनीय' (anīya) में समाप्त होता है। यह वर्तमान कृदन्त के लिए प्रयुक्त नहीं होता।
- अन् (an): 'अन्' (an) स्वयं में एक प्रत्यय है, लेकिन 'अनुधावन्' के संदर्भ में, यह 'शत्' प्रत्यय के पुल्लिंग प्रथमा एकवचन रूप का केवल अंतिम भाग है। 'शत्' वह मूल प्रत्यय है जो वर्तमान कृदन्त का बोध कराता है।
- न् (n): 'न्' (n) यहाँ 'शत्' प्रत्यय के पुल्लिंग प्रथमा एकवचन रूप का अंतिम वर्ण है, न कि वह पूर्ण प्रत्यय जो क्रिया को कृदन्त में बदलता है।

अतः, 'अनुधावन्' शब्द में 'शत्' प्रत्यय का प्रयोग हुआ है।

135. Answer: c

Explanation:

कथायाः शिक्षायाः विश्लेषणम् (Analysis of the Story's Moral)

प्रस्तुतं गद्यांशं एकां रोचककथां वर्णयति यस्मिन् महातपा नाम मुनिः स्वस्य तपःप्रभावेण एकां मूषिकां विभिन्नजन्तुषु परिवर्तयति । कथायाः अन्ते व्याघ्ररूपधारी मूषकः मुनिम् हन्तुं प्रयतते, यतो हि सः स्वस्य मूलरूपं (मूषकः) लज्जास्पदं मन्यते । अस्मात् कथातः प्राप्तां शिक्षां विविधां दृष्ट्याः परीक्षामः ।

कथायाः सारांशः (Summary of the Story)

- मुनिः करुणां प्रकटयति: महातपा मुनिः एकं मूषकशावकं दृष्ट्वा दयालुतां प्रदर्शयति ।
- परिवर्तनं करोति: मूषकस्य रक्षां कर्तुं, मुनिः तं क्रमशः बिडालं, कुक्कुरं, अन्ते व्याघ्रं च करोति ।
- व्याघ्रस्य चिन्ता: व्याघ्रः शक्तिशाली भूत्वा अपि मुनिं प्रति कृतघ्नः भवति । सः चिन्तयति यत् यावत् मुनिः जीवितः तावत् तत् मूलं (मूषकत्वं) रहस्यं न भविष्यति, अतः सः मुनिम् हन्तुं सज्जः भवति ।
- मुनिः शप Jogo: मुनिः व्याघ्रस्य दुष्टं विचारं ज्ञात्वा तं पुनः मूषकं करोति ।

विकल्पानां विश्लेषणम् (Analysis of Options)

प्रश्नेन कथायाः मुख्यं शिक्षाः किं इति पृष्ठम् अस्ति । निम्नलिखितं विकल्पं विलोकयामः:

- Option 1: मुनीनाम् अपमानः न कर्तव्यः (One should not insult sages)

यद्यपि व्याघ्रस्य मुनिम् हन्तुं विचारः मुनिं प्रति अनादरः इति मन्यते, तथापि कथायाः मुख्यं शिक्षा केवलं एतत् नास्ति । व्याघ्रस्य व्यवहारस्य मूलं तस्य अन्तःस्थितः भयः तथा लज्जा अस्ति, न केवलं अनादरः ।

- Option 2: मुनीनाम् शापाद् भेतव्यम् (One should fear sages' curses)

कथायां मुनिनां शापस्य प्रभावः दृश्यते । परन्तु, केवलं भयं मनसि धारयितुं कथायाः तात्पर्यार्थः नास्ति । शिक्षा तु शापस्य कारणानां विषये अस्ति, न केवलं तस्मात् भेतव्यम् ।

- Option 3: मिथ्या गर्वः न कर्तव्यः (One should not have false pride)

व्याघ्रः शक्तिशाली भूत्वा अपि स्वस्य मूलात् (मूषकत्वात्) लज्जते स्म । सः स्वस्य वर्तमानं रूपं मुनिं विना अपि प्राप्तं इति मन्यते स्म, यत् मिथ्या गर्वः अस्ति । एषः मिथ्या गर्वः एव तं INSANITY (पागलपन) तथा कृतघ्नतां प्रति प्रेरितवान् । यदा कश्चित् स्वस्य शक्तिं वा स्थितिं विना कारणं वा कृतघ्नतां प्रदर्शयति, सः मिथ्या गर्वः तस्य पतनस्य कारणं भवति । कथायां व्याघ्रस्य अन्तःस्थितः भयः एवं अपकीर्तिभिः विचारः अस्य मिथ्या गर्वस्यैव प्रतीकम् अस्ति । अतः, एषा शिक्षा कथायाः मुख्यं सन्देशं सूचयति ।

- Option 4: मुनयः कृपालवः भवन्ति (Sages are compassionate)

मुनिः आरम्भतः कृपालुः आसीत्, परन्तु कथायाः अन्त्यं मुनिनां करुणायां न अपितु कृतघ्नतायाः परिणामं प्रदर्शयति । कथा केवलं मुनिनां स्वभावं न अपितु जीवस्य आचरणं किं शिक्षां ददाति इति दर्शयति ।

- Option 5: (रिक्तः)

एषः विकल्पः रिक्तः अस्ति ।

निष्कर्षः (Conclusion)

सर्वेषां विकल्पानां विश्लेषणं कृत्वा, इदं स्पष्टं भवति यत् व्याघ्रस्य व्यवहारः मिथ्या गर्वस्य परिणामः आसीत् । सः यद्यपि शक्तिशाली अभवत्, तथापि स्वस्य मूलात् लज्जमानः INSANITY (पागलपन) तथा कृतघ्नताम् आश्रितवान् । अतः, "मिथ्या गर्वः न कर्त्तव्यः ।" इत्येव अस्याः कथायाः मुख्यं शिक्षा अस्ति ।

136. Answer: b

Explanation:

राष्ट्रीय शिक्षानीति-2020 में वैदेशिक भाषाओं का प्रोत्साहन

भारत की राष्ट्रीय शिक्षानीति-2020 (National Education Policy 2020) देश में शिक्षा के ढांचे को आधुनिक बनाने और बहुभाषावाद को बढ़ावा देने का एक महत्वपूर्ण प्रयास है। यह नीति स्कूली शिक्षा में विभिन्न भाषाओं को अपनाने पर जोर देती है, जिसमें विदेशी भाषाओं का अध्ययन भी शामिल है। नीति का उद्देश्य छात्रों को वैश्विक दृष्टिकोण प्रदान करना और उन्हें विभिन्न संस्कृतियों से परिचित कराना है।

वैदेशिक भाषाओं के अध्ययन पर शिक्षानीति-2020 का दृष्टिकोण

राष्ट्रीय शिक्षानीति-2020 के अनुसार, माध्यमिक स्तर पर छात्रों को अतिरिक्त विकल्प के रूप में विदेशी भाषाओं का अध्ययन करने के लिए प्रोत्साहित किया जाएगा। यह छात्रों को भविष्य के करियर के अवसरों के लिए तैयार करने और अंतरराष्ट्रीय समझ को बढ़ाने में मदद करेगा। नीति विभिन्न विदेशी भाषाओं को सीखने की स्वतंत्रता प्रदान करती है, जिससे छात्र अपनी रुचि और आवश्यकता के अनुसार चुनाव कर सकें।

प्रश्नोत्तर विकल्पों का विश्लेषण

प्रश्न पूछता है कि राष्ट्रीय शिक्षानीति-2020 के अनुसार विद्यालयों में अतिरिक्त विकल्प के रूप में किन विदेशी भाषाओं को संस्तुत (प्रोत्साहित) किया गया है। आइए दिए गए विकल्पों का विश्लेषण करें:

- **विकल्प 1:** मेंड्रेन, जापानी, थाई, फ्रेंच, स्पेनिश, पोर्तगीज, रूसी - इसमें मेंड्रेन (चीनी) भाषा शामिल है।

- **विकल्प 2:** कोरियाई, जापानी, थाई, फ्रेंच, स्पेनिश, पोर्तगीज, रूसी - यह भाषाओं का एक विशिष्ट समूह प्रस्तुत करता है।
- **विकल्प 3:** कोरियाई, जापानी, थाई, जर्मन, स्पेनिश, पोर्तगीज, बर्मी - इसमें जर्मन और बर्मी भाषाएं शामिल हैं।
- **विकल्प 4:** कोरियाई, जापानी, थाई, फ्रेंच, स्पेनिश, फारसी, रूसी - इसमें फारसी भाषा शामिल है।

नीति का उद्देश्य विभिन्न भाषाओं को बढ़ावा देना है, लेकिन दिए गए विकल्पों में से एक समूह को सही उत्तर के रूप में चुना जाना है। राष्ट्रीय शिक्षानीति-2020 विभिन्न विदेशी भाषाओं को सीखने के अवसर प्रदान करती है, और अक्सर उदाहरण के तौर पर कुछ प्रमुख वैश्विक भाषाओं का उल्लेख किया जाता है।

सही विकल्प की पहचान

दिए गए विकल्पों में से, विकल्प 2 में सूचीबद्ध भाषाएँ – कोरियाई, जापानी, थाई, फ्रेंच, स्पेनिश, पोर्तगीज, और रूसी – उन विदेशी भाषाओं का प्रतिनिधित्व करती हैं जिन्हें राष्ट्रीय शिक्षानीति-2020 के संदर्भ में अतिरिक्त विकल्प के रूप में देखा जा सकता है। यह समूह विभिन्न एशियाई और यूरोपीय भाषाओं का एक संतुलित प्रतिनिधित्व प्रदान करता है। अन्य विकल्पों में कुछ ऐसी भाषाएँ शामिल हैं जो सामान्यतः शिक्षानीति-2020 के उदाहरणों में उतनी प्रमुखता से नहीं आतीं या विकल्पों के संयोजन में भिन्नता दर्शाती हैं।

अतः, राष्ट्रीय शिक्षानीति-2020 के अनुसार विद्यालयों में अतिरिक्त विकल्प के रूप में संस्तुत विदेशी भाषाओं के समूह में कोरियाई, जापानी, थाई, फ्रेंच, स्पेनिश, पोर्तगीज और रूसी भाषाएँ शामिल हैं।

Your Personal Exams Guide

137. Answer: d

Explanation:

The question asks about a specific linguistic situation observed in a district within the Indian state of Tamil Nadu. It describes a scenario where a particular community speaks the Tamil language, but their way of speaking is easily understood by others. We need to identify the correct linguistic term for this phenomenon.

Understanding Linguistic Variation in Tamil Nadu

Languages, especially widely spoken ones like Tamil, often exhibit variations. These variations can occur due to several factors, including geographical location, social differences among speakers, or even political influences. Understanding these variations helps us appreciate the diversity within a language.

Analyzing the Scenario: Community Speech Patterns

Let's break down the details provided in the question:

- **Location:** A district in Tamil Nadu (तामिलनाडुप्रदेशस्य एकस्मिन् मण्डले).
- **Speakers:** A specific community (एकः विशेषसमुदायः).
- **Language Used:** Tamil (तमिलभाषां भाषते).
- **Mutual Intelligibility:** Others understand this specific community's Tamil without difficulty (परन्तु अन्ये एनां भाषां निबधिम अवगच्छन्ति).

The key elements here are the 'specific community' and the fact that their speech is mutually intelligible with the broader Tamil-speaking population. This means the variation is noticeable but does not hinder communication.

Evaluating Language Variation Options

Let's examine each option provided:

- **Option 1: क्षेत्रीय उपभाषा (Regional Dialect)** A regional dialect is a variety of a language characteristic of a particular geographic area. While the community is located in a specific district, the emphasis on 'विशेषसमुदायः' (special community) suggests that the variation might be more closely tied to the community's identity or social structure rather than purely geographical boundaries. If the variation was solely geographical and affected understanding significantly across different regions, it might be termed a regional dialect, but the prompt focuses on a specific social group.
- **Option 2: भिन्ना भाषा (Different Language)** This option is incorrect. The question explicitly states that the community speaks Tamil and that others understand them. A different language implies a lack of mutual intelligibility, which is contradicted by the scenario.

- **Option 3: राजनैतिक उपभाषा (Political Dialect)** This term is not a standard linguistic classification for variations based on community identity. While politics can influence language use, it doesn't typically define a dialect in this manner, especially when the primary factor seems to be community affiliation.
- **Option 4: सामाजिक उपभाषा (Social Dialect)** A social dialect, or sociolect, refers to a variety of language used by members of a particular social group. Factors such as socio-economic status, ethnicity, caste, religion, or shared community identity can lead to distinct speech patterns. The description of a 'विशेषसमुदायः' (special community) whose Tamil is understood by others fits this definition perfectly. The variation is linked to the social identity of the community but maintains intelligibility within the larger language context.

The Significance of Social Dialects

The scenario described is a classic example of a social dialect. Different social groups within a society may develop unique ways of speaking, reflecting their shared experiences, values, and identity. These variations often involve differences in pronunciation, vocabulary, or grammar, but they typically remain mutually intelligible with other dialects of the same language. The fact that the Tamil spoken by this specific community is understood by others without difficulty strongly indicates that it is a social dialect, marking the community's distinctiveness while remaining part of the broader Tamil linguistic community.

138. Answer: d

Explanation:

आनन्दोत्सवस्य भाषा-रूपः भाषा उपयोगों का विश्लेषण

यह प्रश्न पूछता है कि दिए गए भाषा उपयोगों में से कौन सा 'आनन्दोत्सव के भाषा रूप' के रूप में प्रयोग होता है। 'आनन्दोत्सव' का अर्थ होता है खुशी या उल्लास के अवसर, जैसे कि पर्व, त्यौहार, जन्म, विवाह आदि। हमें यह पहचानना है कि किस प्रकार की भाषा इन अवसरों पर विशेष रूप से प्रयोग की जाती है।

विभिन्न भाषा उपयोगों का परीक्षण

आइये, प्रश्न में दिए गए विभिन्न भाषा उपयोगों पर एक नज़र डालें और समझें कि वे 'आनन्दोत्सव' के संदर्भ में कहाँ तक उपयुक्त हैं:

- **प्रशासनार्थ - भाषा:** यह भाषा मुख्य रूप से सरकारी कामकाज, नियमों, आदेशों और सूचनाओं के आदान-प्रदान के लिए प्रयोग की जाती है। यह औपचारिक और वस्तुनिष्ठ होती है, न कि उत्सव या खुशी व्यक्त करने वाली।
- **शिक्षार्थ - भाषा:** शिक्षा के क्षेत्र में, चाहे वह स्कूलों में हो या विश्वविद्यालयों में, ज्ञान प्रदान करने, सिखाने और सीखने के लिए भाषा का प्रयोग होता है। यह विषय-केंद्रित और निर्देशात्मक होती है, उत्सव की भाषा से भिन्न है।
- **औपचारिकावसरार्थ - भाषा (साक्षात्कार सट्टा):** किसी पद के लिए नियुक्ति हेतु साक्षात्कार जैसे औपचारिक अवसर, जहाँ व्यावसायिकता और औपचारिकता सर्वोपरि होती है, वहाँ प्रयोग की जाने वाली भाषा। यह भाषा अत्यंत संयमित और पेशेवर होती है, जिसका उत्सवों से कोई संबंध नहीं है।
- **जन्म - विवाहादि - उत्सवार्थ भाषा:** यह भाषा विशेष रूप से खुशी के अवसरों, जैसे किसी का जन्म होना, विवाह होना, या अन्य सामाजिक उत्सवों और त्योहारों पर इस्तेमाल होती है। इस प्रकार की भाषा में स्नेह, शुभकामनाएँ, बधाई और खुशी का इज़हार होता है। यह अनौपचारिक, भावनात्मक और उत्सवपूर्ण होती है।

निष्कर्ष: उत्सवों के लिए उपयुक्त भाषा

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि 'जन्म - विवाहादि - उत्सवार्थ भाषा' ही वह भाषा है जो 'आनन्दोत्सव' या खुशी के अवसरों पर प्रयोग की जाती है। इस प्रकार की भाषा भावनाओं को व्यक्त करने और उत्सव के माहौल को बढ़ाने के लिए होती है।

इसलिए, सही विकल्प वह है जो विशेष रूप से खुशी के अवसरों, जैसे जन्म और विवाह समारोहों के लिए भाषा के उपयोग का वर्णन करता है।

139. Answer: d

Explanation:

मातृभाषा सहज शिक्षण क्षमता: भाषाधिगम-उपकरणम्

प्रश्न पूछता है कि वह कौन सी मानव क्षमता है जिसके द्वारा व्यक्ति बिना किसी विशेष प्रयास के अपनी मातृभाषा या घर की भाषा सीख लेता है। यह क्षमता भाषा अधिग्रहण से संबंधित है, जो मनुष्य की एक अद्वितीय विशेषता है।

विकल्पों का विश्लेषण

आइए दिए गए विकल्पों का विश्लेषण करें:

- **मानवैः शिक्षितां भाषां प्रति सहजरुचिः**: इसका अर्थ है मनुष्यों द्वारा सीखी गई भाषा के प्रति स्वाभाविक रुचि। जबकि रुचि भाषा सीखने में सहायक हो सकती है, यह स्वयं वह क्षमता नहीं है जिसके द्वारा हम बिना प्रयास के भाषा सीखते हैं।
- **भाषा-अभिरुचिः**: इसका अर्थ है भाषा में रुचि। यह विकल्प भी भाषा सीखने की प्रक्रिया में रुचि को दर्शाता है, न कि सहज रूप से भाषा सीखने की अंतर्निहित क्षमता को।
- **बहुभाषी**: बहुभाषी वह व्यक्ति होता है जो एक से अधिक भाषाएँ बोल सकता है। यह किसी व्यक्ति की भाषा सीखने की क्षमता का परिणाम है, न कि वह क्षमता स्वयं जिससे हम अपनी पहली भाषा सहजता से सीखते हैं।
- **भाषाधिगम-उपकरणम्**: यह एक महत्वपूर्ण अवधारणा है, जिसे अक्सर भाषा अधिग्रहण उपकरण (Language Acquisition Device - LAD) के रूप में समझा जाता है। यह वह जन्मजात, जैविक क्षमता है जो मनुष्यों में भाषा को समझने और उत्पन्न करने के लिए होती है। इसी क्षमता के कारण बच्चे बिना व्याकरण की औपचारिक शिक्षा के अपनी मातृभाषा को सहजता और सरलता से सीख लेते हैं। यह प्रश्न में वर्णित "प्रयासेन विनैव" (बिना प्रयास के) सीखने की क्षमता से सीधे मेल खाता है।

सही उत्तर का स्पष्टीकरण

भाषाधिगम-उपकरणम् वह शब्द है जो मनुष्य की उस जन्मजात क्षमता का वर्णन करता है जिससे वह अपनी मातृभाषा या आसपास की भाषा को बिना किसी सचेत प्रयास या औपचारिक शिक्षण के आत्मसात कर लेता है। यह क्षमता बच्चों को ध्वनियों, शब्दों, व्याकरणिक संरचनाओं और भाषा के उपयोग को स्वाभाविक रूप से सीखने में सक्षम बनाती है। यह नव-भाषाविज्ञान (neurolinguistics) और भाषा अधिग्रहण के सिद्धांतों का एक केंद्रीय तत्व है।

140. Answer: d

Explanation:

क्षमताधारित अध्ययन-अध्यापनस्य प्रमुखं लक्ष्यं

क्षमताधारित अध्ययन-अध्यापन (Competency-Based Study-Teaching) इत्युक्ते यत् छात्रेषु विशिष्टानि ज्ञानानि, कौशलानि, अभिवृत्तिश्च विकसन्ति येन ते जीवने सफलभवितुं शक्नुयुः। अत्र केवलं विषयस्य ज्ञानं प्राप्तं न भवति, अपि तु तस्य ज्ञानस्य उपयोगः कथं करणीयः इति अपि शिक्ष्यते। एतत् उपागमः छात्रस्य सर्वाङ्गीण विकासाय केन्द्रितः भवति।

विकल्पानां विश्लेषणं

प्रस्तुतप्रश्ने क्षमताधारित अध्ययन-अध्यापनस्य उद्देश्यं किं नास्ति इति ज्ञातुं उक्तम् अस्ति। एतत् उपागमं (approach) इत्यस्य विषये विभिन्न-विकल्पानां विश्लेषणं कुर्मः:

- **समाजे साफल्यपूर्वकं कार्यम्:** क्षमताधारित उपागमं छात्रान् समाजस्य आवश्यकतानुसारं कार्यं कर्तुं योग्यां करोति। अतः, एतत् एकं महत्त्वपूर्णं उद्देश्यम् अस्ति।
- **सोद्देश्यं कौशलस्य प्रयोगशिक्षणम्:** अत्र छात्रान् केवलं ज्ञानं दातुं न, अपितु उद्देशपूर्णं यत् कौशलं (skill) प्राप्तं तेन सह कार्यं कर्तुं (application) अपि शिक्ष्यते। एतत् क्षमताधारित-उपागमस्य मुख्यं लक्ष्यम् अस्ति।
- **पारस्परिकसम्बन्धजनककौशलस्य विकासः:** संवादकौशलं (communication skills), सहयोगकौशलं (teamwork), तथा अन्ये परस्परसम्बन्धितानि कौशलानि अपि क्षमताधारित-अध्ययनस्य भागः भवन्ति। एतेषां विकासः अपि एकं आवश्यकं लक्ष्यम् अस्ति।
- **केवलं विषयनैपुण्यम्:** क्षमताधारित उपागमं केवलं विषये नैपुण्यं (subject expertise) प्राप्तं न इति इच्छति। अपितु, प्राप्तं ज्ञानं कौशलरूपेण कथं प्रयुज्यते इति अपि महत्त्वपूर्णं भवति। यदा वयं 'केवलम्' (only) इति शब्दं पश्यामः, तदा जायते यत् एतत् व्यापक-लक्ष्याणां विहाय एकस्मिन् एव पक्षे सीमितं भवति। क्षमताधारित-अध्ययनं विषयनैपुण्यात् अपि अधिकं लक्ष्यं साधयति।

निष्कर्षः

उपरोक्त-विश्लेषणानुसारं, क्षमताधारित अध्ययन-अध्यापनं छात्रस्य समग्र-कौशल-विकासं, सामाजिक-सफलतां, तथा व्यावहारिक-ज्ञानस्य प्रयोगं प्रोत्साहयति। केवलं विषये नैपुण्यं प्राप्तं कर्तुं इति तु अस्य उपागमस्य एकमात्रं वा मुख्यं उद्देश्यं न भवति। अतः, 'केवलं विषयनैपुण्यम्' इति वाक्यं क्षमताधारित अध्ययन-अध्यापनस्य उद्देश्यं न भवति।

141. Answer: a

Explanation:

भाषा का शैक्षिक पाठ्यक्रम में स्थान

यह प्रश्न पाठ्यक्रम में **भाषा** की भूमिका और महत्व के बारे में पूछता है। शिक्षा प्रणाली में, **भाषा** केवल संवाद का माध्यम नहीं है, बल्कि यह ज्ञान प्राप्त करने और उसे व्यक्त करने का एक अनिवार्य उपकरण भी है। किसी भी विषय को समझने और उस पर चर्चा करने के लिए **भाषा** की स्पष्टता महत्वपूर्ण है।

विकल्पों का विश्लेषण

- **विकल्प 1:** यह विकल्प बताता है कि **भाषा** का महत्व पाठ्य विषय (subject matter) को जानने और शिक्षण के माध्यम (medium of instruction) को समझने, दोनों में स्वीकार किया जाता है। यह **भाषा** की दोहरी भूमिका को दर्शाता है - ज्ञान का आधार और ज्ञान का माध्यम।
- **विकल्प 2:** यह विकल्प पाठ्यपुस्तकों की तुलना में विषयों के माध्यम से **भाषा** सिखाने की बात करता है। यह एक विशेष शिक्षण विधि पर केंद्रित है, न कि **भाषा** के समग्र महत्व पर।
- **विकल्प 3:** यह विकल्प भाषा की कक्षा में अन्य विषयों (जैसे गणित, विज्ञान) के माध्यम से ज्ञान सिखाने का सुझाव देता है। यह पाठ्यक्रम के अंतर्संबंध को दर्शाता है, लेकिन यह नहीं बताता कि पाठ्यक्रम में **भाषा** को कैसे देखा जाता है।
- **विकल्प 4:** यह कथन कि "विद्यालयी शिक्षा में **भाषा** के बिना विषय ज्ञान संभव नहीं है" काफी हद तक सही है, लेकिन यह केवल एक पहलू पर जोर देता है। विकल्प 1 अधिक व्यापक है क्योंकि यह न केवल विषय ज्ञान के लिए बल्कि शिक्षण के माध्यम के रूप में **भाषा** के महत्व को भी स्वीकार करता है।

पाठ्यक्रम में भाषा के महत्व की स्वीकृति

शैक्षिक पाठ्यक्रम के संदर्भ में, **भाषा** को अत्यंत महत्वपूर्ण माना जाता है। इसे निम्नलिखित कारणों से स्वीकार किया जाता है:

- **विषय ज्ञान का आधार:** छात्र विभिन्न विषयों (जैसे विज्ञान, सामाजिक विज्ञान, गणित) के ज्ञान को **भाषा** के माध्यम से ही समझते और ग्रहण करते हैं। **भाषा** के बिना, पाठ्य सामग्री को समझना मुश्किल होगा।
- **शिक्षण का माध्यम:** कक्षा में शिक्षक जिस **भाषा** का प्रयोग करते हैं, वह शिक्षण का माध्यम होती है। छात्र उस माध्यम को जितनी अच्छी तरह समझेंगे, उतना ही बेहतर वे विषय को सीख पाएंगे।

- **संवाद और अभिव्यक्ति:** भाषा छात्रों को अपने विचारों, शंकाओं और ज्ञान को व्यक्त करने में सक्षम बनाती है।

इसलिए, यह स्वीकार करना कि **भाषा** पाठ्यविषय के ज्ञान और शिक्षण के माध्यम, दोनों के लिए महत्वपूर्ण है, पाठ्यक्रम में **भाषा** की भूमिका का सबसे सटीक वर्णन है। विकल्प 1 इसी बात पर जोर देता है।

142. Answer: a

Explanation:

भाषाशिक्षण आवश्यक निवेशः

भाषाशिक्षण (Language Teaching) इति प्रक्रियायां, विद्यार्थिनः भाषां कर्तुं कस्य प्रकारस्य निवेशस्य (Input) आवश्यकता भवति इति प्रश्नः अस्ति। भाषा अधिग्रहणस्य (Language Acquisition) सिद्धांतेषु, विशेषतः स्टीफन क्रेषनस्य (Stephen Krashen) 'निवेश परिकल्पना' (Input Hypothesis) अनुसारं, विद्यार्थिनः वर्तमान भाषा-स्तरतः (Current Language Level) किञ्चित् उन्नतस्य स्तरस्य निवेशस्य (Input) माध्यमेन भाषां अधिकं प्रभावीरूपेण गृह्णन्ति। एतत् 'i+1' सूत्रेण अपि ज्ञायते, यत्र 'i' इति छात्रस्य वर्तमान स्तरं सूचयति, तथा '+1' इति तस्मात् किञ्चित् अधिकं उन्नतं स्तरं सूचयति।

विविध पर्यायानां विश्लेषणम्

- **पर्यायः 1:** छात्रस्य भाषास्तरात् ईषद् अधिकतरेण स्तरेण सह सम्पर्कः।

एषः विकल्पः भाषा अधिग्रहणस्य प्रभावी सिद्धान्तानुसारं सम्यक् अस्ति। छात्रस्य वर्तमान ज्ञानात् किञ्चित् अधिकं चुनौतीपूर्णं, परन्तु अवगन्तुं शक्यं (Comprehensible Input) भाषा-सामग्रीं प्रदानं कुर्वन्, छात्रः भाषायां प्रगतिं कर्तुं शक्नोति। उदाहरणार्थं, यदि छात्रः सरलवाक्यानि अवगच्छति, तर्हि सः किञ्चित् जटिल-वाक्यानां श्रवणेन अधिकं लाभं प्राप्नोति।

- **पर्यायः 2:** छात्राणां स्तरात् ईषद् निम्नतरस्तरस्य भाषया सह सम्पर्कः।

एषः विकल्पः न्यूनप्रभावी अस्ति। यदा निवेशः छात्रस्य वर्तमान स्तरतः निम्नः भवति, तर्हि सः नूतनं किञ्चित् अपि न ददाति, अपि तु छात्रः यत् पूर्वमेव जानाति तस्य पुनरावर्तनं भवति।

- पर्याय: 3: भाषाम् अवगन्तुं छात्रस्य स्तरः ।

छात्रस्य स्तरः महत्त्वपूर्णः अस्ति, परन्तु सः स्वयं 'निवेशः' न भवति । अपि तु, छात्रस्य स्तरं ज्ञात्वा तदनुसारं निवेशः (Input) कल्पितः भवेत् । अत्र निवेशः इतिपदस्य अर्थः भाषा-सामग्री यत् छात्रः गृह्णाति ।

- पर्याय: 4: भाषया सह सम्पर्कं स्थापयितुं छात्राणां भाषा-स्तरस्यावबोधः ।

छात्राणां स्तरं ज्ञातुं आवश्यकम् अस्ति, यतः तेन योग्यः निवेशः प्रदातुं शक्यते । परन्तु, केवलं स्तरज्ञानं पर्याप्तं न भवति । वास्तविकं आवश्यकं तु छात्रस्य स्तरतः किञ्चित् उन्नतं भाषा-सामग्री प्रदानं (निवेशः) अस्ति । अतः, एषः विकल्पः अपूर्णः अस्ति ।

निष्कर्षः

उपर्युक्त विश्लेषणानुसारं, भाषाशिक्षणे सर्वोत्तमं निवेशं (Input) तु छात्रस्य वर्तमान भाषा-स्तरतः किञ्चित् अधिकं उन्नतं (Slightly Higher Level) भवति । एतेन छात्रस्य भाषा-अधिग्रहण प्रक्रिया सुगमा भवति ।

143. Answer: a

Explanation:

विषय-आधारित शब्द समूह निर्माण का विश्लेषण

इस प्रश्न में, एक शिक्षिका छात्रों को दो अलग-अलग विषयों - 'घर' (गृहम्) और 'विद्यालय' (विद्यालयश्च) - से संबंधित शब्द प्रदान करती हैं। छात्रों से अपेक्षा की जाती है कि वे इन शब्दों का उपयोग करके दो शब्द-समूह बनाएँ, जो प्रत्येक विषय से संबंधित हों। हमें यह पहचानना है कि यह गतिविधि किस शैक्षिक प्रक्रिया का वर्णन करती है।

प्रश्न के संदर्भ को समझना

- मुख्य कार्य: छात्रों को दिए गए शब्दों को दो निश्चित विषयों (घर और विद्यालय) के आधार पर समूहों में व्यवस्थित करना।
- उद्देश्य: विषय-विशिष्ट शब्दावली को पहचानना और वर्गीकृत करना।

विकल्पों का विश्लेषण

1. विषयसम्बद्धशब्दकोशः (Subject-related vocabulary/lexicon)

यह विकल्प बताता है कि छात्र किसी विशेष विषय से जुड़े शब्दों का एक संग्रह या शब्दावली बना रहे हैं। प्रश्न में, 'घर' और 'विद्यालय' दो विषय हैं, और छात्र इनसे संबंधित शब्दों को समूहित कर रहे हैं। यह गतिविधि सीधे तौर पर विषय-विशिष्ट शब्दावली (lexicon) के निर्माण से संबंधित है। छात्र सीख रहे हैं कि कौन से शब्द 'घर' से संबंधित हैं और कौन से 'विद्यालय' से, जिससे उनकी विषय-आधारित शब्दावली बढ़ रही है।

2. विषयसम्बद्ध शिक्षणम् (Subject-related teaching)

यह एक व्यापक शब्द है जिसमें किसी विषय को पढ़ाने की पूरी प्रक्रिया शामिल होती है। जबकि शब्दों को समूहित करना विषय-शिक्षण का एक हिस्सा हो सकता है, यह पूरी प्रक्रिया का वर्णन नहीं करता है। प्रश्न विशेष रूप से शब्दावली को व्यवस्थित करने के एक विशिष्ट कार्य पर केंद्रित है।

3. विचारनिर्माणम् (Idea generation)

'विचार निर्माण' का अर्थ है नए विचारों को उत्पन्न करना या विकसित करना। हालाँकि शब्दों को समूहित करने के लिए कुछ हद तक सोचने की आवश्यकता होती है, लेकिन यह गतिविधि मुख्य रूप से विचारों के निर्माण के बजाय मौजूदा शब्दों को वर्गीकृत करने और व्यवस्थित करने पर केंद्रित है। यह शब्दावली निर्माण की एक अधिक विशिष्ट प्रक्रिया है।

4. संज्ञानात्मक शिक्षणम् (Cognitive teaching)

'संज्ञानात्मक शिक्षण' एक व्यापक शैक्षणिक दृष्टिकोण है जो सीखने, स्मृति, समस्या-समाधान आदि जैसी मानसिक प्रक्रियाओं पर केंद्रित है। जबकि शब्दों को समूहित करना एक संज्ञानात्मक कार्य है, यह शब्द स्वयं इस विशेष गतिविधि का सटीक वर्णन नहीं करता है। यह गतिविधि संज्ञानात्मक कौशल का उपयोग करती है, लेकिन यह स्वयं संज्ञानात्मक शिक्षण का पूर्ण प्रतिनिधित्व नहीं है।

निष्कर्ष

अध्यापिका द्वारा छात्रों को 'घर' और 'विद्यालय' जैसे विषयों से संबंधित शब्दों को समूहों में व्यवस्थित करने के लिए कहना, छात्रों को उन विषयों से जुड़ी शब्दावली का निर्माण करने में मदद करना है। इसलिए, यह गतिविधि **विषयसम्बद्धशब्दकोशः** के निर्माण का सबसे अच्छा उदाहरण है।

144. Answer: a

Explanation:

पठनकाले अर्थ ग्रहणम्: प्रमाणाधारित एवं तर्कधारित समझ

इस प्रश्न का उद्देश्य यह समझना है कि जब हम कोई पाठ (text) पढ़ रहे होते हैं, तो उसमें दिए गए प्रमाण (evidence) और तर्क (reasoning) के आधार पर अर्थ को कैसे समझा जाता है। इस प्रक्रिया को क्या कहते हैं, यह पूछा गया है।

विकल्पानां विश्लेषणम्

आइए दिए गए प्रत्येक विकल्प का विश्लेषण करें ताकि सही उत्तर का निर्धारण किया जा सके:

1. अर्थानुमानम् (Arthānumānam)

अर्थानुमानम् का शाब्दिक अर्थ है 'अर्थ का अनुमान लगाना'। पठन के संदर्भ में, इसका मतलब है कि पाठक पाठ में दी गई जानकारी, जैसे शब्दों, वाक्यों, और घटनाओं के क्रम (जो कि प्रमाण हैं) का उपयोग करके, अपने तर्क और समझ के आधार पर पाठ के छिपे हुए या मुख्य अर्थ को समझता है। पाठक केवल शब्दों के शाब्दिक अर्थ तक ही सीमित नहीं रहता, बल्कि प्रस्तुत साक्ष्यों के आधार पर निष्कर्ष निकालता है। यह विकल्प प्रश्न में वर्णित प्रक्रिया से सीधे मेल खाता है।

- यह प्रमाणाधारित है क्योंकि पाठक पाठ में दिए गए साक्ष्यों पर निर्भर करता है।
- यह तर्कधारित है क्योंकि पाठक उन साक्ष्यों का विश्लेषण करके निष्कर्ष निकालता है।
- यह अर्थग्रहण की प्रक्रिया है जो पठन के दौरान होती है।

2. पाठ्यसामग्र्यः लेखनम् (Pāṭhyasāmagryaḥ Lēkhanam)

इस विकल्प का अर्थ है 'पाठ्य सामग्री को लिखना'। यह क्रिया पढ़ने और अर्थ समझने से अलग है; यह सामग्री का निर्माण करने से संबंधित है। इसलिए, यह प्रश्न के संदर्भ में सही उत्तर नहीं हो सकता।

3. शब्दानाम् अर्थग्रहणम् (Śabdānām Arthagrahaṇam)

इसका अर्थ है 'शब्दों के अर्थ को समझना'। यह पठन समझ का एक हिस्सा है, लेकिन यह केवल अलग-अलग शब्दों के अर्थ तक ही सीमित है। प्रश्न में 'प्रमाणाधारित' और 'तर्कधारित' अर्थग्रहण की

बात की गई है, जो केवल शब्दों के अर्थ से कहीं अधिक व्यापक है; इसमें पूरे वाक्य, पैराग्राफ या पाठ के निहित अर्थ को समझना शामिल है। इसलिए, यह विकल्प पूरी तरह से सही नहीं है।

4. पठनानुसारिणं लेख लेखितुं क्षमता (Paṭhanānusāriṇaṁ Lēkha Lēkhituṁ Kṣamatā)

इस विकल्प का अर्थ है 'पढ़े गए पाठ के आधार पर लिखने की योग्यता'। यह पढ़ने की समझ के बाद आती है, जैसे कि पढ़ी हुई जानकारी को सारांशित करना या उस पर आधारित अपने विचार लिखना। यह स्वयं अर्थ समझने की प्रक्रिया नहीं है, बल्कि उस समझ का उपयोग है।

निष्कर्ष

उपरोक्त विश्लेषण के आधार पर, यह स्पष्ट है कि पठन के दौरान पाठ में दिए गए **प्रमाण** और **तर्क** का उपयोग करके अर्थ को समझने की प्रक्रिया को **अर्थानुमानम्** कहा जाता है। यह पाठक को पाठ की गहरी और सूक्ष्म समझ विकसित करने में मदद करता है।

145. Answer: c

Explanation:

सोपाननिर्माणपरिकल्पना (Scaffolding hypothesis) की विस्तृत व्याख्या

सोपाननिर्माणपरिकल्पना को समझना

सोपाननिर्माणपरिकल्पना, जिसे अंग्रेजी में 'Scaffolding hypothesis' कहा जाता है, शिक्षा के क्षेत्र में एक महत्वपूर्ण शिक्षण-अधिगम सिद्धांत है। यह सिद्धांत लेव वायगोत्स्की (Lev Vygotsky) के सामाजिक-सांस्कृतिक सिद्धांत, विशेषकर 'समीपस्थ विकास का क्षेत्र' (Zone of Proximal Development - ZPD) की अवधारणा पर आधारित है। इस परिकल्पना के अनुसार, एक अधिक जानकार व्यक्ति (जैसे शिक्षक या सहपाठी) एक शिक्षार्थी को नई या जटिल अवधारणाओं और कौशलों को सीखने में सहायता प्रदान करता है। यह सहायता एक 'मंचान' (scaffold) की तरह काम करती है, जो सीखने वाले को उस कार्य को पूरा करने में सक्षम बनाती है जिसे वह अकेले करने में असमर्थ होता। जैसे-जैसे शिक्षार्थी अधिक कुशल और आत्मविश्वासी बनता जाता है, यह सहायता धीरे-धीरे कम कर दी जाती है, जिससे अंततः वह स्वतंत्र रूप से कार्य करने में सक्षम हो जाता है। **मुख्य तत्व:**

- **अस्थायी सहायता:** यह सहायता स्थायी नहीं होती, बल्कि सीखने की प्रक्रिया के दौरान ही प्रदान की जाती है।
- **परस्पर संपर्क:** इसमें शिक्षक और छात्र के बीच या छात्रों के बीच सक्रिय संवाद और सहयोग शामिल होता है।
- **मार्गदर्शन:** सहायता संरचित और लक्षित होती है, जो छात्र को सही दिशा में मार्गदर्शन करती है।
- **ZPD पर ध्यान:** सहायता छात्र की वर्तमान क्षमता और उसके संभावित विकास के बीच के अंतर (ZPD) को पाटती है।

दिए गए विकल्पों का विश्लेषण

आइए अब प्रश्न के प्रत्येक विकल्प का विश्लेषण करें ताकि 'सोपाननिर्माणपरिकल्पना' के संदर्भ में सही उत्तर को समझा जा सके:

विकल्प 1: प्रत्येक छात्र: स्वतन्त्र: अस्ति तथा व्यक्तिशः शिक्षणम् अपेक्षते ।

अर्थ: प्रत्येक छात्र स्वतंत्र है और उसे व्यक्तिगत शिक्षण की आवश्यकता है। **विश्लेषण:** यह विकल्प छात्र की स्वतंत्रता और व्यक्तिगत शिक्षण पर जोर देता है। जबकि व्यक्तिगत ध्यान महत्वपूर्ण हो सकता है, सोपाननिर्माण (Scaffolding) स्वयं सहयोगात्मक संपर्क पर आधारित है, न कि पूर्ण स्वतंत्रता पर। यह परिकल्पना सामाजिक संपर्क और सहायता की भूमिका को महत्वपूर्ण मानती है। इसलिए, यह विकल्प सोपाननिर्माणपरिकल्पना के मूल तत्व से मेल नहीं खाता।

विकल्प 2: विषयाणां सम्मिश्रणं परस्परं सम्पर्कश्च ।

अर्थ: विषयों का मिश्रण और आपसी संपर्क। **विश्लेषण:** यह विकल्प केवल विषयों के संयोजन और संपर्क की बात करता है, जो बहुत सामान्य है। यह स्पष्ट नहीं करता कि यह संपर्क किस प्रकार सीखने में सहायक होता है या इसका उद्देश्य क्या है। सोपाननिर्माण में संपर्क का एक विशिष्ट उद्देश्य होता है - छात्र को सीखने में मदद करना। यह विकल्प उस विशिष्टता को व्यक्त नहीं करता।

विकल्प 3: सर्वशिक्षणानां प्रेरणा परस्परसम्पर्कः

अर्थ: सभी प्रकार के सीखने के लिए प्रेरणा और आपसी संपर्क। **विश्लेषण:** यह विकल्प दो महत्वपूर्ण पहलुओं पर प्रकाश डालता है: 'प्रेरणा' (motivation) और 'परस्पर संपर्क' (mutual interaction)। सोपाननिर्माण (Scaffolding) में शिक्षक या सहपाठी द्वारा प्रदान की जाने वाली सहायता न केवल छात्र को कार्य पूरा करने में मदद करती है, बल्कि सीखने की प्रक्रिया में उसकी रुचि और प्रेरणा को भी बढ़ाती है। 'परस्पर संपर्क' इस प्रक्रिया का आधार है, क्योंकि सहायता बातचीत और सहयोग के माध्यम

से ही प्रदान की जाती है। यह छात्र को ZPD के भीतर सीखने और प्रगति करने में मदद करता है। यह विकल्प सोपाननिर्माण परिकल्पना के सार को सबसे अच्छी तरह दर्शाता है।

विकल्प 4: शिक्षण छात्रस्य व्यक्तिः प्रयत्नफलम् अस्ति ।

अर्थ: शिक्षण छात्र के व्यक्तिगत प्रयास का परिणाम है। **विश्लेषण:** यह विकल्प पूरी तरह से छात्र के व्यक्तिगत प्रयास पर ध्यान केंद्रित करता है और बाहरी सहायता या सामाजिक संपर्क की भूमिका को नजरअंदाज करता है। सोपाननिर्माण (Scaffolding) का सिद्धांत यह मानता है कि सीखने में बाहरी मदद (जैसे शिक्षक का मार्गदर्शन) एक महत्वपूर्ण भूमिका निभाती है, खासकर जब छात्र किसी नई चीज को सीख रहा हो। इसलिए, यह विकल्प भी सही नहीं है।

निष्कर्ष

सोपाननिर्माणपरिकल्पना (Scaffolding hypothesis) शिक्षण की एक ऐसी विधि है जिसमें छात्र को सीखने में मदद करने के लिए अस्थायी, संरचित सहायता प्रदान की जाती है। यह सहायता अक्सर शिक्षक और छात्र के बीच 'परस्पर संपर्क' के माध्यम से होती है और छात्र की 'प्रेरणा' को भी बढ़ाती है। दिए गए विकल्पों में से, विकल्प 3 ('सर्वशिक्षणानां प्रेरणा परस्परसम्पर्कः ') इस प्रक्रिया के सबसे महत्वपूर्ण पहलुओं - प्रेरणा और आपसी संपर्क - को शामिल करता है, जो इसे सोपाननिर्माणपरिकल्पना के लिए सबसे उपयुक्त उत्तर बनाता है।

146. Answer: d

Explanation:

विद्यालयीयां शिक्षायां मातृभाषा शिक्षणस्य महत्त्वम्

मातृभाषायां शिक्षा प्रदानं विद्यार्थिनां कृते अत्यावश्यकं वर्तते । इदं तेषां समग्रविकासस्य, विशेषतः बौद्धिकस्य, सामाजिकस्य, भावनात्मकस्य च विकासाय साहाय्यं करोति । अत्र प्रश्नः अस्ति यत् मातृभाषायां शिक्षणस्य विषये किं वाक्यं सत्यं नास्ति । आइए प्रत्येकं विकल्पस्य विश्लेषणं कुर्मः ।

विकल्पानां विषये चर्चा

1. मातृभाषायां संज्ञानात्मकविकासः

कथनम्: 'मातृभाषा उच्चतर संज्ञानात्मकविकासं प्रोन्नयति' ।

विश्लेषणम्: एतत् सत्यम् अस्ति । यदा छात्रः स्वस्य मातृभाषायां पठति, तदा सः पाठ्यं सरलतापूर्वकं अवगच्छति । अस्य अवबोधनस्य फलेन तस्य चिन्तनक्षमता, समस्यासमाधानक्षमता च वर्धते, यत् उच्चतर संज्ञानात्मकविकासस्य द्योतकं अस्ति ।

2. मातृभाषायां सम्प्रेषणयोग्यता

कथनम्: 'मातृभाषा परस्परं सम्प्रेषणात्मकयोग्यतां वर्धयति ।'

विश्लेषणम्: एतत् अपि सत्यम् अस्ति । मातृभाषायां छात्रः स्वविचारान्, भावनाः च स्पष्टतया व्यक्तं कर्तुं शक्नोति । इयं सुस्पष्टता अन्यैः सह संवादं सुगमं करोति, येन सम्प्रेषणात्मकयोग्यतायां वृद्धिः भवति ।

3. मातृभाषायां विचाराणां स्पष्टता

कथनम्: 'मातृभाषा विचारात्मकस्पष्टतां प्रोन्नयति ।'

विश्लेषणम्: एतत् अपि सत्यम् अस्ति । मातृभाषायां विचारं व्यक्तं कर्तुं सुलभं भवति । यदा विचाराः सुलभतया व्यक्तं भवन्ति, तदा तेषु स्पष्टता आगच्छति, येन छात्रः अधिकं स्पष्टरूपेण चिन्तयितुं शक्नोति ।

4. मातृभाषा अन्यभाषाशिक्षणं बाधते इति कथनम्

कथनम्: 'मातृभाषा अन्यभाषाशिक्षणं बाधते ।'

विश्लेषणम्: एतत् असत्यम् अस्ति । बहुविधाः संशोधनाः दर्शयन्ति यत् मातृभाषायां सुदृढं ज्ञानं अन्यभाषाणां ज्ञानं प्राप्तुं साहाय्यं करोति, न तु बाधां जनयति । एकभाषायां दक्षतां प्राप्य अन्यभाषां सोपानरूपेण अभ्यासं कर्तुं शक्यते । अतः, एतत् वाक्यं सत्यं नास्ति ।

निष्कर्षः

उपर्युक्तानां विश्लेषणानाम् आधारेण, यत् वाक्यं विद्यालयीयां शिक्षायां मातृभाषायाः शिक्षणस्य विषये सत्यं नास्ति, तत् अस्ति – 'मातृभाषा अन्यभाषाशिक्षणं बाधते ।'

147. Answer: b

Explanation:

मूल्यांकनपद्धति का विश्लेषण

प्रस्तुत प्रश्न में एक अष्टमी कक्षा की अध्यापिका का वर्णन किया गया है जो पूरे वर्ष छात्रों के सीखने की प्रक्रिया से सम्बंधित विवरण एकत्र करती है। वह प्रत्येक छात्र का सत्र के अनुसार निरीक्षण करती है और मूल्यांकन के लिए एक विस्तृत रिपोर्ट तैयार करती है। हमें इस विशिष्ट मूल्यांकन पद्धति का नाम पहचानना है।

पत्राधान (Portfolio) मूल्यांकन की व्याख्या

पत्राधान (Portfolio) मूल्यांकन एक ऐसी मूल्यांकन प्रक्रिया है जिसमें शिक्षक पूरे शैक्षणिक सत्र के दौरान छात्र द्वारा किए गए कार्यों, जैसे - असाइनमेंट, प्रोजेक्ट, वर्कशीट, परीक्षा के परिणाम, और अन्य प्रासंगिक शैक्षिक गतिविधियों का एक व्यवस्थित संग्रह तैयार करता है। यह संग्रह छात्र की प्रगति, कौशल विकास और उपलब्धियों का एक समग्र दृष्टिकोण प्रस्तुत करता है।

प्रश्न के संदर्भ में पत्राधान मूल्यांकन

प्रश्न में वर्णित अध्यापिका की गतिविधियाँ पत्राधान मूल्यांकन से पूरी तरह मेल खाती हैं:

- **वर्षपर्यन्त विवरण एकत्रीकरण:** अध्यापिका पूरे वर्ष छात्रों के सीखने का विवरण एकत्र कर रही है, जो पोर्टफोलियो निर्माण का मुख्य आधार है।
- **प्रतिसत्र निरीक्षण:** प्रत्येक सत्र में छात्र का अवलोकन करना पोर्टफोलियो में शामिल की जाने वाली सामग्री को इकट्ठा करने और समझने में मदद करता है।
- **विवरणलेख सज्जीकरण:** एकत्रित जानकारी और छात्र के कार्यों के आधार पर एक विस्तृत रिपोर्ट (विवरणलेख) तैयार करना पोर्टफोलियो मूल्यांकन का एक महत्वपूर्ण चरण है, जो छात्र के प्रदर्शन का समग्र चित्र प्रस्तुत करता है।

अन्य मूल्यांकन पद्धतियों का विश्लेषण

आइए देखें कि अन्य विकल्प इस स्थिति में क्यों कम उपयुक्त हैं:

- **परम्परावादी मूल्यांकन:** इसमें मुख्य रूप से अंतिम परीक्षा या अर्धवार्षिक परीक्षा जैसे मानकीकृत परीक्षणों पर ध्यान केंद्रित किया जाता है। यह विस्तृत, वर्ष-भर के अवलोकन और सामग्री संग्रह पर आधारित नहीं है।
- **सोद्देश्य मूल्यांकन:** यद्यपि सभी मूल्यांकन उद्देश्यपूर्ण होते हैं, यह शब्द किसी विशेष विधि का वर्णन नहीं करता है, बल्कि मूल्यांकन के सामान्य उद्देश्य को दर्शाता है।

- **सतत मूल्यांकनम्:** यह एक व्यापक शब्द है जिसमें नियमित अंतराल पर होने वाले मूल्यांकन शामिल होते हैं। पत्राधान मूल्यांकन, सतत मूल्यांकन का ही एक विशिष्ट रूप है जो कार्यों के संग्रह पर जोर देता है। हालाँकि, प्रश्न में जिस प्रकार के विस्तृत संग्रह और रिपोर्टिंग का उल्लेख है, वह विशेष रूप से 'पत्राधान' को इंगित करता है।

निष्कर्ष

अध्यापिका द्वारा वर्ष भर छात्रों के शिक्षण का विवरण एकत्र करना, सत्रानुसार निरीक्षण करना और एक विस्तृत रिपोर्ट तैयार करना, यह सब **पत्राधान (Portfolio) मूल्यांकनम्** पद्धति का हिस्सा है। यह विधि छात्र की समग्र वृद्धि और सीखने की प्रक्रिया को समझने में सहायक होती है।

148. Answer: c

Explanation:

भाषाशिक्षणे प्रामाणिकं पाठ्यपुस्तकं: विश्लेषणम्

अत्र प्रश्नः वर्तते यत् भाषाशिक्षणाय निम्नलिखितं प्रामाणिकं पाठ्यपुस्तकं नास्ति इति । प्रामाणिकं पाठ्यपुस्तकं इति यत् कृत्रिमं न भवति, अपितु वास्तविक-जीवन-व्यवहारेषु प्रयुज्यते । अपि च, एतादृशं सामग्री भाषा-कक्षायाः कृते न निर्मिता भवति । इदानीं वयं प्रत्येकस्य विकल्पस्य विश्लेषणं कुर्मः ।

विकल्पानां विस्तृतं विश्लेषणं

- **विकल्पः 1:** केनापि लेखकेन कुत्रापि लिखिता लघुकथा ।
एषा लघुकथा कस्मिन् अपि अवसरे, कस्यापि कृते, लेखकेन लिखिता भवितुम् अर्हति । इयं भाषा-शिक्षणाय न निर्मिता । अतः, भाषा-शिक्षण-प्रक्रियायां एषा 'प्रामाणिकं पाठ्यपुस्तकं' इति गण्यते ।
- **विकल्पः 2:** कवेः कविता ।
कवेः कविता कलात्मक-अभिव्यक्तिः अस्ति, सा विशेषरूपेण भाषा-शिक्षणस्य कृते न रचिता । एषा अपि प्रामाणिक-सामग्रीरूपेण भाषा-शिक्षणे प्रयोगात् प्रामाणिकं पाठ्यपुस्तकं इति मन्यते ।
- **विकल्पः 3:** पाठ्यपुस्तकरूपेण लिखिता लेखकस्य कृतिः ।
अत्रेदृशीं कृतिं निर्दिशति यत् सा विशेषरूपेण 'पाठ्यपुस्तकम्' इत्येव उद्देशेन लिखिता अस्ति । यद्यपि एषा लेखकस्य कृतिः, परन्तु अस्याः निर्माणस्य मुख्यं प्रयोजनं शिक्षण-प्रक्रिया एव अस्ति ।

प्रामाणिक-सामग्री तु सा भवति यस्याः निर्माणं शिक्षण-भिन्न-उद्देश्येन कृतं भवति । अतः, पाठ्यपुस्तकरूपेण निर्मिता कृतिः 'प्रामाणिकं पाठ्यपुस्तकं' न भवति ।

- विकल्पः 4: रेलवे समय सारिणी ।

रेलवे समय-सारिणी तु व्यवहारिक-जीवने यात्रा-नियोजनाय उपयुज्यते । एषा कृत्रिमं न भवति, अपि तु वास्तविक-जगति प्रयोगं प्राप्नोति । अतः, एषा अपि भाषा-शिक्षणाय प्रामाणिकं पाठ्यपुस्तकं गण्यते ।

- विकल्पः 5:

अयं विकल्पः रिक्तः अस्ति ।

निष्कर्षः

उपर्युक्त-विश्लेषणानुसारं, यत्किमपि **पाठ्यपुस्तकरूपेण लिखिता लेखकस्य कृतिः** भवति, तस्य निर्माणस्य मूलं प्रयोजनं भाषा-शिक्षणं भवति, न तु वास्तविक-जीवन-संचारः । अन्ये विकल्पाः (लघुकथा, कविता, रेलवे समय-सारिणी) वास्तविक-जीवन-संचारस्य उदाहरणानि सन्ति, अतः ताः प्रामाणिक-सामग्रीरूपेण परिगण्यन्ते । अतः, **विकल्पः 3** एव सः अस्ति यः भाषाशिक्षणाय प्रामाणिकं पाठ्यपुस्तकं नास्ति ।

149. Answer: d

Explanation:

भाषाशिक्षण-सम्बन्धितं कार्यं विश्लेषण

This question asks to identify the activity that is not related to language learning among the given options. Language learning encompasses various skills like reading, writing, speaking, listening, understanding context, and interacting effectively. We need to analyze each option to determine its relevance to language acquisition.

1. समूहकार्यः पाठ्यविषयपठनं

Option Analysis: Students read a text in groups of four and perform tasks based on it.

Explanation: This method involves collaborative learning. Students read together, which enhances reading comprehension. They discuss the content and work on tasks, promoting interactive language use and comprehension skills. This is a recognized language learning activity.

2. व्यावहारिकं कार्यः ग्रामे संवादः

Option Analysis: Students visit a village to gather information about their work from local people.

Explanation: This activity involves real-world interaction and communication. Students need to understand spoken language, ask questions, and convey information, thereby practicing their listening and speaking skills in a practical context. This strongly supports language learning.

3. लेखनकार्यः दैनन्दिनी लेखनम्

Option Analysis: Students maintain a diary for a week, writing about their work and experiences.

Explanation: Diary writing is an excellent way to develop writing skills. It encourages students to use vocabulary, structure sentences correctly, express thoughts coherently, and reflect on events using the target language. This is a core language learning activity.

4. अनुकरणं: कविता श्रवणं एवं पाठं

Option Analysis: Students listen to and recite a poem by imitating the teacher.

Explanation: This activity primarily focuses on auditory learning and vocal reproduction. Students practice pronunciation, rhythm, and intonation by mimicking the teacher. While pronunciation practice is a component of language learning, this activity is mainly imitative and may not involve deeper comprehension, creative expression, or spontaneous communication compared to the other options. It's more about rote memorization and mimicry.

निष्कर्षः भाषाशिक्षण-असम्बद्धं कार्यं

Comparing the options, activities 1, 2, and 3 involve comprehension, interaction, and production (writing), which are comprehensive aspects of language learning. Option 4, while related to pronunciation and memorization, is primarily imitative. Therefore, it can be considered the activity least representative of broader language learning skills among the choices.

The activity that is not considered a comprehensive language learning activity in this context is:

- छात्रा अध्यापकं अनुकृत्य कवितां पठन्ति । (Students recite a poem imitating the teacher.)

150. Answer: a

Explanation:

निपुणभारतकार्यक्रमस्य उद्देश्यं निरूपणम्

प्रस्तुतप्रश्ने 'निपुणभारतकार्यक्रमस्य उद्देश्यं किम् अस्ति ?' इति सविस्तरं विवृतम् अस्ति । अस्मिन् कार्यक्रमेण भारतसर्वकारः शिक्षाक्षेत्रे, विशेषतः प्राथमिकस्तरे, महत्त्वपूर्णं पदं स्थापितवान् । अत्र कार्यक्रमस्य मुख्यलक्ष्यं, विभिन्नविकल्पानां विश्लेषणं च प्रस्तुतं कृतम् अस्ति ।

निपुणभारतकार्यक्रमस्य विषये

'निपुणभारत' (National Initiative for Proficiency in Reading with Understanding and Numeracy) इति कार्यक्रमः भारतसर्वकारस्य एकः महत्त्वपूर्णः शैक्षिक-पहलः अस्ति । अस्य मुख्यं लक्ष्यं प्रत्येकं बालकेषु, विशेषतः तृतीयश्रेणीपर्यन्तं, पठनक्षमतायां (Literacy) तथा संख्याज्ञाने (Numeracy) प्रवीणतां सुनिश्चितं कर्तुम् अस्ति । एतत् राष्ट्रीयशिक्षा-नीति-2020 (NEP 2020) इत्यस्य अपि एकः महत्त्वपूर्णः भागः अस्ति, यत्र आधारभूत-शिक्षायाः (foundational education) उपरि विशेषः बलः दीयते ।

विकल्पानां विस्तृतं विश्लेषणम्

- **विकल्प 1:** 2025 वर्षाविधिं यावत् प्राथमिकविद्यालये वैश्विक- आधारभूत - साक्षरतां संख्याज्ञानं प्राप्तुम् ।
एषः विकल्पः निपुणभारतकार्यक्रमस्य मूल- उद्देशेन सह पूर्णतया मेलं करोति । कार्यक्रमस्य लक्ष्यं 2025-26 इत्यस्मिन् शैक्षणिक-संवत्सरे तृतीयश्रेणीपर्यन्तं सर्वेषु बालकेषु आधारभूत-साक्षरता (Foundational Literacy) एवं संख्याज्ञानं (Numeracy) प्रापणम् अस्ति । 'वैश्विक-आधारभूत' इति पदं अस्य व्यापकताम् अपि सूचयति, यत् भारतस्य सर्वेषु विद्यालयेषु एतत् लक्ष्यं प्राप्यते ।
- **विकल्प 2:** 2028 वर्षं यावत् दशमीकक्षापर्यन्तं तदधिकामपि कक्षापर्यन्तं छात्रैः, तेभ्यश्च हितायपठनम् ।
अयं विकल्पः दशमीकक्षायाः उपरि छात्रेषु पठनस्य उपरि अधिकं ध्यानं ददाति । यद्यपि पठनक्षमता सर्वदा महत्त्वपूर्णं भवति, निपुणभारतकार्यक्रमस्य प्राथमिकं लक्ष्यं आधारभूत-स्तरे (primary level) अस्ति, न तु उच्च-कक्षासु (higher classes) । अस्य कार्यक्रमस्य मुख्यं केन्द्रं तृतीयश्रेणी-स्तरीयं भवति ।
- **विकल्प 3:** विद्यालये छात्रेषु साक्षरतां संख्याज्ञानञ्च प्रापणाय प्रयासः
एषः विकल्पः यद्यपि सत्यम् अस्ति, तथापि अयम् अति-सामान्यः (too general) इति वक्तुं शक्यते । निपुणभारतकार्यक्रमस्य विशिष्टं लक्ष्यं 'आधारभूत' (foundational) साक्षरता एवं संख्याज्ञानं, विशेषतः एकं निश्चितं समय-सीमायां (specific timeline), अर्थात् 2025-26 पर्यन्तं प्राप्तुम् अस्ति । सामान्य-प्रयासः इत्यस्य वैशिष्ट्यं नास्ति ।
- **विकल्प 4:** प्रारम्भिक बालविद्यालये गुणवत्तापरक शिक्षणाय प्रोत्साहनम् ।
गुणवत्तापूर्ण शिक्षणं (Quality education) निपुणभारतकार्यक्रमस्य एकः आवश्यकः भागः अस्ति, तथापि कार्यक्रमस्य मुख्यं ध्यानं आधारभूत-साक्षरता एवं संख्याज्ञाने प्रवीणतायां (proficiency) अस्ति । केवलं सामान्य-गुणवत्ता-प्रोत्साहनं अस्य कार्यक्रमस्य एकं पूर्णं लक्ष्यं न भवति ।
- **विकल्प 5:**
यतः अयं विकल्पः रिक्तः अस्ति, अतः अस्य विषये किमपि वक्तुं न शक्यते ।

कार्यक्रमस्य मुख्यं लक्ष्यं

उपर्युक्त-विश्लेषणानुसारं, निपुणभारतकार्यक्रमस्य मुख्यं उद्देश्यं प्राथमिकविद्यालयेषु, विशेषतः तृतीयश्रेणीपर्यन्तं, 2025 वर्षविधिं यावत् आधारभूत-साक्षरतायां संख्याज्ञाने च प्रवीणतां प्राप्तं करणे इति स्पष्टं भवति । एतत् लक्ष्यं राष्ट्रीयशिक्षा-नीति-2020 इत्यस्य अपि एकः प्रमुखः भागः इति मन्यते ।

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