# BITSAT English Proficiency & Logical Reasoning Sample Paper-22

**Duration: 40 Minutes** **Maximum Marks: 90**

## Instructions

- This paper contains **30** Multiple Choice Questions: **Part A** – English Proficiency (Q1 - Q10) and **Part B** – Logical Reasoning (Q11 - Q30).
- Each correct answer carries **+3 marks**. Each incorrect answer carries **-1 mark**. Unattempted question carries **0 marks**.
- Only **one** option is correct for each question.
- Use of mobile phones, smartwatches, or any electronic gadgets is strictly prohibited.

## Part A: English Proficiency

**Q1.** Choose the word that is most nearly opposite in meaning to the given word:
**OBDURATE**

(A) Compliant

(B) Callous

(C) Resolute

(D) Fleeting

**Q2.** Find the error in one of the underlined parts of the sentence. If there is no error, select option (D).
The committee members (A) have been debating the proposal (B) since three hours, but (C) no consensus has been reached yet. (D) No error

(A) (A)

(B) (B)

(C) (C)

(D) (D)

**Q3.** Choose the option that best fills the blank to make the sentence grammatically correct and meaningful.

The sudden downfall of the executive was attributed to his ____ handling of the company's foreign investments, which bordered on complete negligence.

(A) meticulous

(B) maladroit

(C) magnanimous

(D) mercenary

**Q4.** Choose the word that is most nearly similar in meaning to the given word:

**EPHEMERAL**

(A) Eternal

(B) Transient

(C) Transparent

(D) Enduring

**Q5.** **Directions for Q5 and Q6:** Read the short passage below and answer the questions that follow.

*The concept of judicial review, which allows courts to examine the actions of the legislative and executive branches, serves as a crucial check in a democratic system. However, critics argue that aggressive judicial activism can lead to an "imperial judiciary," where unelected judges overstep their constitutional mandates and encroach upon policy-making domains that belong to elected representatives. Proponents counter that the judiciary must step in when other branches fail to protect fundamental rights.*

According to the passage, an "imperial judiciary" is a situation where:

(A) The legislative branch completely dominates the courts.

(B) Judges actively undermine the fundamental rights of citizens.

(C) Unelected judges make policy decisions reserved for elected officials.

(D) The executive branch selects judges based on political loyalty.

**Q6.** Read the passage given in Q5 again and answer the question that follows:
Which of the following best describes the main tension highlighted by the author?

(A) The conflict between elected legislative members and executive officials.

(B) The balance between protecting fundamental rights and judicial overreach.

(C) The historical evolution of constitutional amendments in a democracy.

(D) The lack of accountability in the judicial selection process.

**Q7.** Identify the part of the sentence that contains a grammatical error.
Neither the chief architect (A) nor his junior assistants (B) was able to identify the structural flaw (C) before the construction began. (D) No error

(A) (A)

(B) (B)

(C) (C)

(D) (D)

**Q8.** Choose the word that is most nearly similar in meaning to the given word:
**QUERULOUS**

(A) Inquisitive

(B) Complaining

(C) Pacifying

(D) Ambiguous

**Q9.** Choose the word that is most nearly opposite in meaning to the given word:
**ALACRITY**

(A) Apathy

(B) Promptness

(C) Clarity

(D) Zeal

**Q10.** Identify the part of the sentence that contains a grammatical error.
Hardly had the flight (A) taken off from the runway (B) than the pilot noticed a technical glitch (C) in the landing gear. (D) No error

(A) (A)

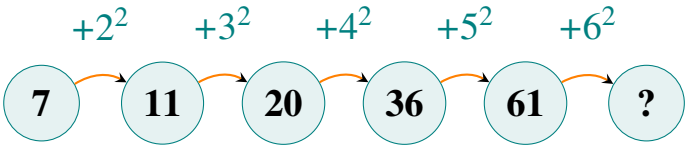
(B) (B)

(C) (C)

(D) (D)

## Part B: Logical Reasoning

**Q11.** Complete the series:
7, 11, 20, 36, 61, ?




(A) 95

(B) 97

(C) 101

(D) 105

**Q12.** If in a certain code language, **MONKEY** is written as **XDJMNL**, how will **TIGER** be written in that same code language?

(A) QDFHS

(B) SDFHS

(C) QDHFS

(D) REGIT

**Q13.** In a certain code, '743' means 'mangoes are good', '657' means 'eat good food', and '934' means 'mangoes are ripe'. Which digit represents 'ripe' in that code?

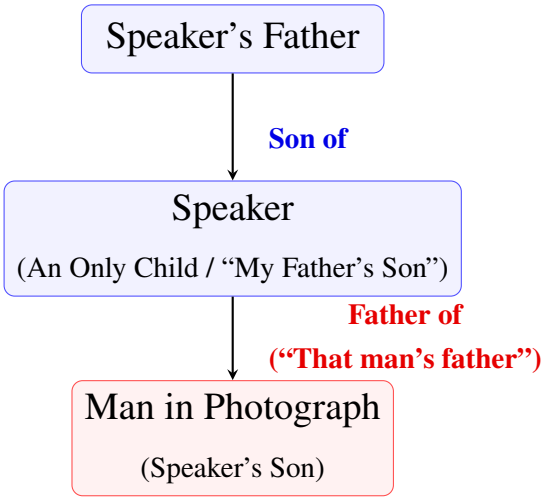
(A) 3

(B) 4

(C) 7

(D) 9

**Q14.** Pointing to a photograph, a man said, "I have no brother or sister, but that man's father is my father's son." Whose photograph was it?




(A) His own

(B) His son's

(C) His father's

(D) His nephew's

**Q15.** Select the pair that expresses a relationship similar to the one expressed in the original pair:

**Light : Blind**

(A) Speech : Dumb

(B) Language : Deaf

(C) Tongue : Sound

(D) Voice : Vibration

**Q16.** Find the missing term in the pattern:

Z1A, X2D, V6G, T24J, ?

(A) R120M

(B) S120M

(C) R120L

(D) S96N

**Q17.** Choose the word that does not belong with the others in the group.

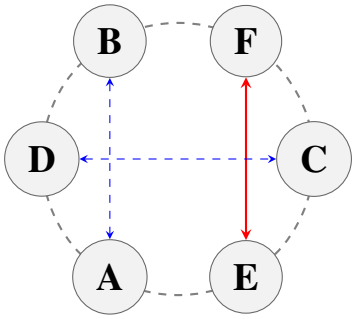
(A) Epistemology

(B) Oncology

(C) Pathology

(D) Cardiology

**Q18.** Six people—A, B, C, D, E, and F—are sitting in a circle facing the center. B is between F and D. E is between A and C. A is to the immediate left of D. Who is sitting opposite to F?




(A) B

(B) C

(C) E

(D) D

**Q19.** Find the missing number in the sequence:
2, 3, 8, 27, 112, ?

(A) 565

(B) 448

(C) 560

(D) 339

**Q20.** Select the correct alternative that will establish the same relationship:
**Cobbler : Leather :: Carpenter : ____**

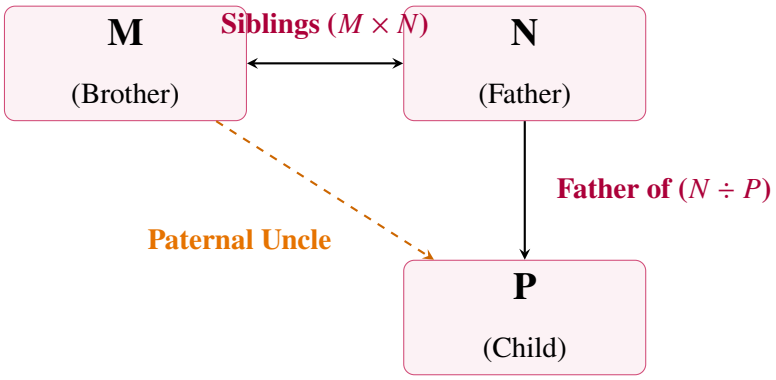
(A) Furniture

(B) Wood

(C) Hammer

(D) Chisel

**Q21.** If '$A \times B$' means A is the brother of B; '$A \div B$' means A is the father of B; and '$A - B$' means A is the sister of B. Which of the following expressions means M is the paternal uncle of P?



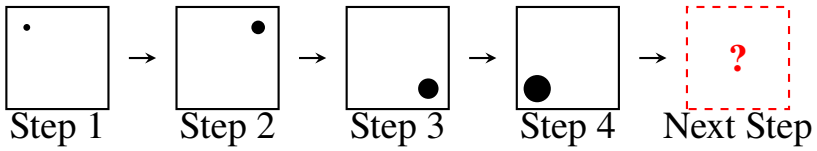

(A) $M \times N \div P$

(B) $M \div N \times P$

(C) $M - N \div P$

(D) $M \times N - P$

**Q22.** Choose the figure from the options that will logically continue the pattern established by the problem figures.
**Problem Pattern:** A square contains a single dot in the top-left corner. In the next step, it moves to the top-right corner and doubles in size. In the third step, it moves to the bottom-right corner and triples in size. In the fourth step, it moves to the bottom-left corner and quadruples in size.
**Next Step:** Where will the dot be and what will be its nature?



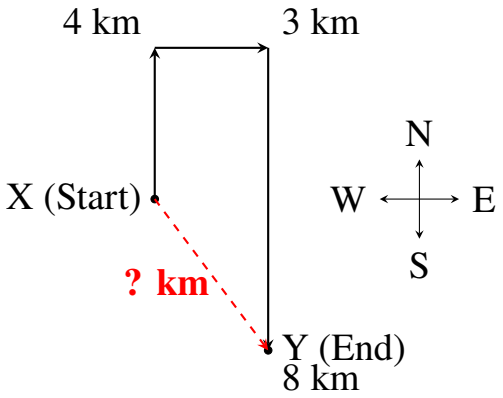

(A) Top-left corner, five times the original size

(B) Top-right corner, five times the original size

(C) Center, five times the original size

(D) Top-left corner, same as the original size

**Q23.** A person starts from a point X and walks 4 km North. He then turns right and walks 3 km. After this, he turns right and walks 8 km to reach point Y. How far and in which direction is he now with respect to the starting point X?




(A) 5 km South-East

(B) 5 km South-West

(C) 7 km North-East

(D) 4 km South

**Q24.** Complete the following pattern sequence:
A, C, F, J, O, ?

(A) T

(B) U

(C) V

(D) S

**Q25.** Find the odd one out from the given options:

(A) 24 – 42

(B) 36 – 63

(C) 48 – 84

(D) 57 – 75

**Q26.** If the letters of the word "RUMOUR" are coded as "21-21-13-15-21-18" based on a shifting matrix pattern, how would the word "SECRET" be coded if every vowel is replaced by its next consecutive vowel in the English alphabet ($A \rightarrow E$, $E \rightarrow I$, $I \rightarrow O$, $O \rightarrow U$, $U \rightarrow A$) and consonants remain unchanged?

(A) S-I-C-R-I-T

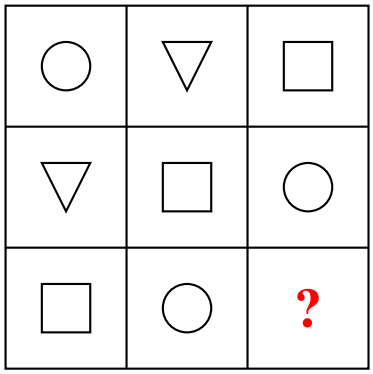
(B) S-E-C-R-E-T

(C) T-I-D-S-I-U

(D) S-O-C-R-O-T

**Q27.** Choose the option that completes the figures matrix.

**Matrix Rules:** Row 1 shows a circle, a triangle, and a square. Row 2 shows a triangle, a square, and a circle. Row 3 shows a square, a circle, and [ ? ].



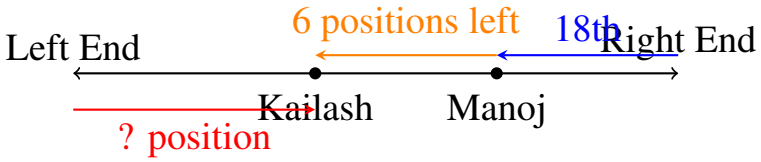

(A) Circle

(B) Square

(C) Triangle

(D) Hexagon

**Q28.** In a row of 40 children, Facing North, Kailash is 6th to the left of Manoj. If Manoj is 18th from the right end of the row, what is Kailash's position from the left end of the row?



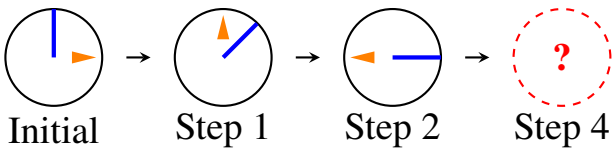

(A) 17th

(B) 16th

(C) 15th

(D) 18th

**Q29.** Consider the following figure sequence:
A solid line rotates clockwise by 45° in each step, while a shaded triangle inside the circle rotates counter-clockwise by 90° at each step. If the initial position has the line pointing vertically up (12 o'clock) and the triangle pointing right (3 o'clock), what will be their positions in the 4th step?




(A) Line pointing South-East, Triangle pointing left

(B) Line pointing South-West, Triangle pointing down

(C) Line pointing South-East, Triangle pointing up

(D) Line pointing South-West, Triangle pointing left

**Q30.** Select the option that best completes the analogy:
**Numbers : Arithmetic :: Shapes : ____**

(A) Algebra

(B) Geometry

(C) Physics

(D) Calculus

## Detailed Solutions

**Q1.**

### Solution

**Concept:** The question tests vocabulary knowledge, specifically identifying the antonym (opposite meaning) of a given advanced English word. To determine the correct answer, we must break down the definition of the root word, analyze its semantic tone, and evaluate the choices based on their exact linguistic definitions.

**Solution:** Step 1: Define the core word. The word **OBDURATE** originates from Latin roots meaning hardened. In modern English usage, it is an adjective used to describe someone who is stubbornly refusing to change their opinion, course of action, or mindset, despite persuasive arguments, moral influence, or changing circumstances. It carries a heavy connotation of inflexibility, resistance to persuasion, and unyielding persistence.

Step 2: Evaluate Option (A). The word **Compliant** describes a person or entity that is disposed to agree with others, yield to wishes, or easily obey rules and commands. Since a compliant person is flexible and ready to bend to outside influence, this word directly contradicts the unyielding, inflexible nature of being obdurate.

Step 3: Evaluate Option (B). The word **Callous** means showing or having a cruel, insensitive, and cold disregard for the feelings or suffering of others. While it shares a negative tone with obdurate, it emphasizes a lack of empathy rather than stubbornness, making it a partial synonym rather than an opposite.

Step 4: Evaluate Option (C). The word **Resolute** describes someone who is admirably purposeful, determined, and unwavering in their intent. This is highly similar in meaning to obdurate, acting as a positive or neutral synonym rather than an antonym.

Step 5: Evaluate Option (D). The word **Fleeting** means lasting for a very short period of time or being transient. This describes a temporal condition and is completely unrelated to the stubborn character trait described by obdurate.

Step 6: Compare the evaluations. Based on the analysis, Compliant stands out as the direct, exact polar opposite of Obdurate because it denotes complete willingness to yield, whereas obdurate denotes absolute refusal to yield.

**Final Answer:** Compliant

**Answer: (A)**

Go Back to Question 1

## Q2.

### Solution

**Concept:** This question focuses on prepositions used in relation to time expressions within perfect continuous tenses. Grammatical rules dictate a strict distinction between the usage of specific markers when denoting a starting point versus denoting a cumulative duration of an action.

**Solution:** Step 1: Analyze the structure of the given sentence. The phrase "have been debating" represents the present perfect continuous tense, which is used correctly here to describe an activity that started in the past and is still ongoing up to the present moment.

Step 2: Examine the time phrase under scrutiny in part (B), which is "since three hours". Here, "three hours" represents a total amount of elapsed time, which is classified as a duration or a numerical period of time.

Step 3: Apply the grammatical rules for temporal prepositions. The preposition **since** must only be paired with a specific, identifiable starting point in time, such as "since 3 o'clock", "since Monday", or "since 2021". It cannot be paired with a quantity of time.

Step 4: Identify the correct preposition for durations. The preposition **for** is specifically designated to accompany a length, span, or period of time, such as "for three hours", "for five days", or "for several years".

Step 5: Determine the error location. Because part (B) pairs "since" with a duration ("three hours"), it violates this fundamental rule of grammar. The word "since" must be replaced with "for" to make the sentence grammatically accurate, rendering part (B) the erroneous section.

**Final Answer:** (B)

**Answer: (B)**

Go Back to Question 2

## Q3.

### Solution

**Concept:** Contextual sentence completion requires assessing the tone, vocabulary meaning, and logical relationships within a sentence. The blank must be filled with an adjective that directly aligns with the contextual clue provided in the dependent clause, which references behavior that "bordered on complete negligence."

**Solution:** Step 1: Analyze the logical flow of the sentence. The sentence states that an executive experienced a "sudden downfall" because of the way he handled foreign investments. The crucial contextual hint is at the end: his actions "bordered on complete negligence." This indicates the blank must contain a highly negative word that implies poor skill, carelessness, or failure.

Step 2: Test Option (A). The word **meticulous** means showing great attention to detail, careful, and precise. If his handling were meticulous, it would be the exact opposite of negligence, creating a logical contradiction.

Step 3: Test Option (B). The word **maladroit** translates to clumsy, unskillful, inept, or highly ineffective. Incompetent and careless handling perfectly fits a scenario that results in a sudden downfall and borders on absolute negligence. This matches the contextual requirements of the sentence.

Step 4: Test Option (C). The word **magnanimous** means very generous, forgiving, or noble in spirit, especially toward a rival or someone less powerful. This relates to personality or ethics, not operational capability or professional negligence.

Step 5: Test Option (D). The word **mercenary** describes someone primarily motivated by a desire for personal gain or money, often regardless of ethics. While an executive could be greedy, being mercenary does not automatically mean their actions border on administrative or professional negligence.

Step 6: Conclude the optimal choice. Out of all choices, only maladroit logically explains a catastrophic failure caused by incompetent, negligent management.

**Final Answer:** maladroit

**Answer: (B)**

Go Back to Question 3

## Q4.

### Solution

**Concept:** This vocabulary question requires identifying a synonym, which is a word with a highly similar meaning to the word provided. Success depends on understanding the specific definition of the target word and checking each option against it.

**Solution:** Step 1: Define the target word. The adjective **EPHEMERAL** is derived from Greek roots meaning lasting only for a single day. In modern language, it refers to anything that is extremely short-lived, fleeting, temporary, or passing quickly out of existence. It is frequently used to describe brief phenomena like morning dew, passing thoughts, or short seasons.

Step 2: Evaluate Option (A). The word **Eternal** means lasting or existing forever without an end. This is a direct antonym of ephemeral, representing the exact opposite concept.

Step 3: Evaluate Option (B). The word **Transient** means lasting only for a short time, impermanent, or brief. Because both ephemeral and transient describe something that quickly fades or passes away, they are close synonyms.

Step 4: Evaluate Option (C). The word **Transparent** means allowing light to pass through so that objects behind can be distinctly seen, or easy to perceive and understand. This deals with clarity and physical visibility, not temporal duration, making it irrelevant.

Step 5: Evaluate Option (D). The word **Enduring** means continuing or long-lasting over a great period of time. Like eternal, this functions as an antonym rather than a synonym.

Step 6: Formulate the conclusion. Based on this step-by-step verification, transient is the only word that shares the meaning of brief temporal existence with ephemeral.

**Final Answer:** Transient

**Answer: (B)**

Go Back to Question 4

## Q5.

### Solution

**Concept:** Reading comprehension detail questions require extracting specific information explicitly stated within the text. The key to solving this is locating the exact mention of the phrase "imperial judiciary" and reading the surrounding text to grasp its structural definition according to the author.

**Solution:** Step 1: Scan the provided text to locate the specific key phrase "imperial judiciary". The phrase appears in the second sentence of the passage: "However, critics argue that aggressive judicial activism can lead to an 'imperial judiciary'..."

Step 2: Analyze the defining context immediately following the term. The text explains that an imperial judiciary is a state "where unelected judges overstep their constitutional mandates and encroach upon policy-making domains that belong to elected representatives."

Step 3: Evaluate the provided options against this textual definition. Option (A) claims the legislative branch dominates the courts, which contradicts the text because the text outlines the courts overstepping their bounds onto other branches, not vice-versa.

Step 4: Check Option (B). It states that judges actively undermine the fundamental rights of citizens. The passage says proponents view the judiciary as a protector of rights, not an underminer, so this option is incorrect.

Step 5: Check Option (C). It states that unelected judges make policy decisions reserved for elected officials. This directly matches the textual excerpt about judges "encroaching upon policy-making domains that belong to elected representatives."

Step 6: Check Option (D). It describes the executive branch selecting loyal judges, which is a completely separate concept not mentioned or implied anywhere in the paragraph. Therefore, Option (C) is the only accurate answer.

**Final Answer:** Unelected judges make policy decisions reserved for elected officials.

**Answer: (C)**

Go Back to Question 5

## Q6.

### Solution

**Concept:** Identifying the main tension or central conflict of a passage requires a holistic reading to see how separate arguments are balanced against each other. The author presents a structural debate using classic contrasting transition words to show two opposing viewpoints on judicial behavior.

**Solution:** Step 1: Re-examine the overarching structure of the text. The passage contains two main viewpoints connected by the contrast transition word "However".

Step 2: Isolate the first viewpoint. Critics argue that when judges become overly aggressive (judicial activism), it results in an "imperial judiciary," which is bad because unelected judges cross boundaries into policy making that belongs to elected officials. The concern here is judicial overreach.

Step 3: Isolate the second viewpoint. Proponents counter that the judiciary must take active steps because it is a necessary mechanism to step in and protect the fundamental rights of citizens when the other branches fail to do so.

Step 4: Synthesize the two views to find the core conflict. The fundamental debate presented by the author is a balancing act: on one side, there is the vital necessity of the judiciary protecting basic constitutional rights, and on the other side, there is the risk of the judiciary overstepping its constitutional powers and overreaching into politics.

Step 5: Map this synthesis to the options. Option (B) explicitly outlines this dynamic as "The balance between protecting fundamental rights and judicial overreach," making it the correct answer. The other options focus on narrow details or concepts not covered in the text.

**Final Answer:** The balance between protecting fundamental rights and judicial overreach.

**Answer: (B)**

Go Back to Question 6

## Q7.

### Solution

**Concept:** This question tests subject-verb agreement rules when handling compound subjects joined by correlative conjunctions. Specifically, it applies the rule of proximity, which determines whether a verb should be singular or plural based on the closest subject noun phrase.

**Solution:** Step 1: Identify the structural framework of the sentence. The sentence uses the correlative conjunction pair **"Neither... nor..."** to connect two distinct subjects within a single clause.

Step 2: Isolate the two subjects being connected. The first subject is "the chief architect", which is a singular noun phrase. The second subject is "his junior assistants", which contains a plural noun indicated by the plural suffix "-s".

Step 3: Recall the specific grammatical rule for subject-verb agreement with "Neither... nor...". When two subjects are linked by this pair, the verb must match the number (singular or plural) of the subject noun phrase that sits physically **closest** to it in the sentence structure.

Step 4: Identify the verb and locate the closest subject. The verb in this sentence is the past tense auxiliary "was", located in part (B). The subject that sits immediately adjacent to this verb is the second subject, "his junior assistants".

Step 5: Check for agreement. Since "his junior assistants" is a plural subject, it requires a plural verb to maintain correct agreement. The singular verb "was" is incorrect and must be replaced with the plural form **"were"**.

Step 6: Identify the error block. Because the incorrect verb "was" is contained within part (B), this part contains the grammatical error.

**Final Answer:** (B)

**Answer: (B)**

Go Back to Question 7

## Q8.

### Solution

**Concept:** This question requires identifying the synonym of a given vocabulary word. To find the correct option, we must define the word, analyze its common contexts, and evaluate the options to find the one with the closest overlapping meaning.

**Solution:** Step 1: Determine the meaning of the target word. The adjective **QUERULOUS** comes from Latin roots meaning to complain. It describes a person or behavior characterized by being habitually complaining, whining, fretful, or petulant. It indicates someone who is constantly finding fault or expressing dissatisfaction in an annoying manner.

Step 2: Evaluate Option (A). The word **Inquisitive** means curious, eager for knowledge, or prone to asking many questions. While it relates to speaking or asking, it carries a tone of curiosity rather than dissatisfaction or complaining, so it is not a synonym.

Step 3: Evaluate Option (B). The word **Complaining** means expressing dissatisfaction, pain, resentment, or finding fault. This is the direct definition of querulous, making it the correct synonym.

Step 4: Evaluate Option (C). The word **Pacifying** means intending to bring peace, calm, soothe, or appease. This represents an action that is opposite in spirit to the agitated, complaining nature of a querulous person.

Step 5: Evaluate Option (D). The word **Ambiguous** means open to more than one interpretation, or having a double meaning that creates uncertainty. This describes clarity of information, which is unrelated to a complaining attitude.

Step 6: Finalize the selection. Option (B) is the accurate choice because "complaining" directly matches the meaning of "querulous".

**Final Answer:** Complaining

**Answer: (B)**

Go Back to Question 8

## Q9.

### Solution

**Concept:** Antonym identification requires finding the word that expresses the opposite meaning of the provided word. We must first establish the definition and emotional tone of the given word, then analyze the options to find the best logical opposite.

**Solution:** Step 1: Define the target word. The noun **ALACRITY** refers to a quick, brisk, cheerful readiness, eagerness, or promptness to take action. When someone responds with alacrity, they display positive energy, enthusiasm, and a total absence of hesitation or delay.

Step 2: Evaluate Option (A). The noun **Apathy** means a complete lack of interest, enthusiasm, concern, or emotion about something. An apathetic response is sluggish, unmotivated, and completely indifferent. This stands as the perfect conceptual polar opposite to the eager, highly energetic readiness denoted by alacrity.

Step 3: Evaluate Option (B). The word **Promptness** means the quality of acting quickly or arriving exactly on time. This is a direct synonym of alacrity, not an antonym.

Step 4: Evaluate Option (C). The word **Clarity** means the quality of being coherent, intelligible, or easy to see and understand. This is a cognitive or visual quality that does not relate to behavioral eagerness or readiness.

Step 5: Evaluate Option (D). The word **Zeal** means great energy or enthusiasm in pursuit of a cause or an objective. This serves as another close synonym of alacrity.

Step 6: Select the correct choice. Since Option (A), apathy, represents a lack of energy and enthusiasm, it is the exact opposite of alacrity.

**Final Answer:** Apathy

**Answer: (A)**

Go Back to Question 9

## Q10.

### Solution

**Concept:** This question focuses on correlative conjunction structures and inverted sentence grammar. Certain negative or restrictive adverbs require a specific pairing with an associated conjunction when linking two sequential events in a sentence.

**Solution:** Step 1: Analyze the initial adverbial modifier. The sentence starts with the restrictive adverb **"Hardly"**. When a sentence begins with "Hardly", "Scarcely", or "Barely", it triggers an inversion where the auxiliary verb ("had") precedes the subject ("the flight"), which is done correctly here in part (A).

Step 2: Examine the rules governing correlative pairs. Grammatical rules state that the adverbial modifiers "Hardly", "Scarcely", and "Barely" must be paired exclusively with the conjunction **"when"** or **"before"** to introduce the second event that happened immediately after the first.

Step 3: Identify the error in the sentence. Looking closely at part (B), the sentence uses the conjunction **"than"** to connect the two clauses: "Hardly had the flight... than the pilot noticed...".

Step 4: Differentiate from similar structures. The conjunction "than" is used with the comparative modifier **"No sooner"** (e.g., "No sooner had the flight taken off... than the pilot noticed"). Using "than" with "Hardly" is a structural error.

Step 5: Determine the correction. To make the sentence correct, the word "than" in part (B) must be changed to "when". Therefore, part (B) contains the error.

**Final Answer:** (B)

**Answer: (B)**

Go Back to Question 10

## Q11.

### Solution

**Concept:** Number series questions require identifying an underlying mathematical rule or pattern that governs the transitions between consecutive terms. This is achieved by calculating the differences between successive numbers and checking if those differences follow a recognizable sequence, such as arithmetic shifts, geometric factors, or exponents.

**Solution:** Step 1: Write down the given sequence of numbers clearly to observe their progression:

$$7,\ 11,\ 20,\ 36,\ 61,\ ?$$

Step 2: Calculate the first-order difference between each adjacent pair of numbers in the sequence:

$$\text{Difference } 1 = 11 - 7 = 4$$

$$\text{Difference } 2 = 20 - 11 = 9$$

$$\text{Difference } 3 = 36 - 20 = 16$$

$$\text{Difference } 4 = 61 - 36 = 25$$

Step 3: Analyze the sequence of differences obtained: $4,\ 9,\ 16,\ 25$. We can easily recognize these values as consecutive perfect squares starting from the number 2:

$$4 = 2^2$$

$$9 = 3^2$$

$$16 = 4^2$$

$$25 = 5^2$$

Step 4: Determine the next difference in the pattern. Following the sequence of consecutive perfect squares ($2^2, 3^2, 4^2, 5^2$), the next mathematical term must be $6^2$:

$$\text{Next Difference} = 6^2 = 36$$

Step 5: Apply this difference to the final known term of the sequence to calculate the missing value (?):

$$\text{Missing Number} = 61 + 36 = 97$$

This calculation confirms that 97 is the correct next number in the series.

**Final Answer:** 97

**Answer: (B)**

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## Q12.

### Solution

**Concept:**

The coding scheme utilizes a combination of a structural reversal operation followed by a linear alphabetical shift to transform the plaintext string into the encrypted string.

**Solution:**

Step 1: Analyze the transformation from the source string **MONKEY** to the cipher string **XDJMNL**. Reversing the letter order of **MONKEY** yields:

$$\text{Reversed String: } Y\ E\ K\ N\ O\ M$$

Step 2: Compare each positionally reversed letter directly to the given code string. Every letter undergoes a backward shift of exactly one position $(-1)$ in the standard alphabet:

$$Y \xrightarrow{-1} X, \quad E \xrightarrow{-1} D, \quad K \xrightarrow{-1} J, \quad N \xrightarrow{-1} M, \quad O \xrightarrow{-1} N, \quad M \xrightarrow{-1} L$$

The structural rule is validated: reverse the text sequence, then apply a operational shift of $-1$.

Step 3: Apply this exact operational rule to the target word **TIGER**. Reversing the characters completely results in:

$$\text{Reversed Target: } R\ E\ G\ I\ T$$

Step 4: Shift each letter in the reversed string backward by 1 character position:

$$R - 1 = \mathbf{Q}, \quad E - 1 = \mathbf{D}, \quad G - 1 = \mathbf{F}, \quad I - 1 = \mathbf{H}, \quad T - 1 = \mathbf{S}$$

Combining these letters sequentially produces the string **QDFHS**, which matches option (A).

**Final Answer:** QDFHS

**Answer: (A)**

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## Q13.

### Solution

**Concept:** This is a conditional code problem based on message decoding. It requires identifying the specific digital code for a word by cross-referencing multiple statements, looking for common words and matching them with common numbers across the phrases to isolate the unique code for the target word.

**Solution:** Step 1: Write down all three statements and their given numerical translations clearly:

$$\text{Statement 1: } '743' \rightarrow \text{"mangoes are good"}$$

$$\text{Statement 2: } '657' \rightarrow \text{"eat good food"}$$

$$\text{Statement 3: } '934' \rightarrow \text{"mangoes are ripe"}$$

Step 2: Isolate common elements between Statement 1 and Statement 2. The common word in both English phrases is **"good"**. Looking at their corresponding numerical codes ('743' and '657'), the only shared digit is **'7'**. Therefore, we can conclude:

$$\text{"good"} = 7$$

Step 3: Isolate common elements between Statement 1 and Statement 3. The common words in both phrases are **"mangoes"** and **"are"**. Looking at their corresponding numerical codes ('743' and '934'), the shared digits are **'3'** and **'4'**. Therefore, the set of words maps to those digits:

$$\{\text{"mangoes"},\ \text{"are"}\} = \{3,\ 4\}$$

Step 4: Analyze Statement 3 to find the target word **"ripe"**. Statement 3 consists of three words: "mangoes", "are", and "ripe", coded as '934'. From Step 3, we know "mangoes" and "are" consume the digits 3 and 4.

Step 5: Isolate the remaining word. The only remaining word in Statement 3 is "ripe", and the only remaining unassigned digit in its code ('934') is **'9'**. Therefore, '9' must represent the word "ripe".

**Final Answer:** 9

**Answer: (D)**

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## Q14.

### Solution

**Concept:** Blood relation problems require breaking down a complex descriptive statement into logical, chronological parts. We anchor the relationships to the speaker ("my") and work outward step by step to find the exact familial connection.

**Solution:** Step 1: Analyze the speaker's own family constraints. The man speaking states explicitly: "I have no brother or sister." This means the speaker is an **only child**. Any reference to his father's children refers solely to the speaker himself.
Step 2: Break down the core phrase spoken by the man pointing to the photograph: "...that man's father is my father's son." Let's decipher the second half of this clue first: **"my father's son"**.
Step 3: Substitute the constraint from Step 1 into the clue. For an only child, "my father's son" can only be one person: **the speaker himself**.
Step 4: Substitute this simplified definition back into the original sentence structure. The modified statement becomes: "That man's father is **myself** (the speaker)."
Step 5: Determine the relationship from the perspective of the photograph. If the speaker is the father of the man shown in the photograph, then the photograph must belong to the speaker's **son**. This matches Option (B).

**Final Answer:** His son's

**Answer: (B)**

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## Q15.

### Solution

**Concept:** Verbal analogies test the ability to find a relationship between a pair of words and apply that same logical relationship to a new pair chosen from the options. The best way to solve this is to write a precise sentence that connects the first two words, then see which option fits that exact sentence structure.

**Solution:** Step 1: Analyze the relationship in the original pair, **Light : Blind**. A person who is medically *Blind* completely lacks the physiological ability to perceive *Light*. The relationship pattern is: **[Condition/Phenomenon] : [Person who cannot perceive/use it]**.
Step 2: Test Option (A) with this relationship sentence: A person who is *Dumb* (mute) lacks the physiological ability to produce or use *Speech*. This matches the structural logic of a sensory/functional deprivation.
Step 3: Test Option (B), **Language : Deaf**. A deaf person lacks the ability to perceive *Sound* or *Speech*, not language itself, as deaf individuals regularly use signed language. The parallel is imperfect.
Step 4: Test Option (C), **Tongue : Sound**. The tongue is an organ used to generate speech or perceive taste, not a functional deprivation pairing.
Step 5: Test Option (D), **Voice : Vibration**. Voice physically consists of sound vibrations. This is a definition/composition relationship, not a deprivation relationship.
Step 6: Conclude the best match. Option (A) provides an exact parallel to the original pair, matching a specific physical capacity with the medical term for its total absence.

**Final Answer:** Speech : Dumb

**Answer: (A)**

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## Q16.

### Solution

**Concept:**

Alphanumeric series are solved by splitting each term into individual components—the first letter, middle number, and last letter—deducing their separate arithmetic patterns, and combining the results.

**Solution:**

Step 1: Write down the given alphanumeric terms sequentially:

$$\text{Z1A}, \quad \text{X2D}, \quad \text{V6G}, \quad \text{T24J}$$

Step 2: Track the first letter of each term ($Z \to X \to V \to T$). Converting to alphabetical ranks ($26 \to 24 \to 22 \to 20$), the pattern shows a continuous backward shift of $-2$:

$$\text{Next Rank} = 20 - 2 = 18 \implies \mathbf{R}$$

Step 3: Track the middle numerical values ($1 \to 2 \to 6 \to 24$). The sequence grows by a series of increasing integer multipliers:

$$1 \times 2 = 2, \quad 2 \times 3 = 6, \quad 6 \times 4 = 24$$

Following this progression, the next value is multiplied by 5:

$$\text{Next Number} = 24 \times 5 = \mathbf{120}$$

Step 4: Track the final letter of each term ($A \to D \to G \to J$). Converting to alphabetical ranks ($1 \to 4 \to 7 \to 10$), the pattern shows a continuous forward shift of $+3$:

$$\text{Next Rank} = 10 + 3 = 13 \implies \mathbf{M}$$

Step 5: Combine all three calculated elements to construct the missing term:

$$\text{Missing Term} = \mathbf{R120M}$$

This matches option (A) perfectly.

**Final Answer:** R120M

**Answer: (A)**

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## Q17.

### Solution

**Concept:** Odd-one-out questions test semantic categorization. To solve this, we define the scientific suffix and prefix roots of all four terms to find a shared characteristic that unites three of them, isolating the one term that belongs to a completely different domain.

**Solution:** Step 1: Define Option (A). **Epistemology** combines the Greek roots *episteme* (knowledge) and *-logia* (study of). It is a major branch of **philosophy** dedicated to investigating the nature, origins, scope, and limitations of human knowledge and belief.

Step 2: Define Option (B). **Oncology** is a specialized branch of **medical science** that deals with the study, diagnosis, prevention, and clinical treatment of tumors and cancer.

Step 3: Define Option (C). **Pathology** is a fundamental branch of **medical science** that involves the laboratory examination of organs, tissues, and bodily fluids to diagnose disease.

Step 4: Define Option (D). **Cardiology** is a highly specialized branch of **medical science** focused on the study, diagnosis, and medical management of disorders related to the human heart and blood vessels.

Step 5: Compare the categories. Options (B), (C), and (D) are all strictly branches of clinical medical science and healthcare. Option (A), Epistemology, belongs to the academic field of philosophy, making it the odd one out.

**Final Answer:** Epistemology

**Answer: (A)**

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## Q18.

### Solution

**Concept:** Circular seating arrangement problems require placing points sequentially along a perimeter based on given spatial constraints. We establish a fixed reference point, map positions clockwise or counter-clockwise according to the clues, and deduce the final opposite seating arrangements.

**Solution:** Step 1: Visualize a circle with 6 equally spaced seats facing the center. Facing the center means that for any seat, "left" moves in a clockwise direction, and "right" moves in a counter-clockwise direction.

Step 2: Apply the most specific definitive clue: "A is to the immediate left of D." Let's place D at a reference position (e.g., the 9 o'clock position). Since A is to the immediate left of D, A must be placed at the 8 o'clock position (moving clockwise).

Step 3: Apply the clue: "B is between F and D." Since D is already placed at 9 o'clock, and the seat to its left is taken by A, the only available spot for B to be adjacent to D is on its right, at the 11 o'clock position. For B to be between F and D, F must then be placed at the 1 o'clock position.

Step 4: Apply the clue: "E is between A and C." We currently have A at 8 o'clock. The next two remaining empty seats are at 6 o'clock and 4 o'clock. For E to sit between A and C, E must take the 6 o'clock position, leaving C to take the 4 o'clock position.

Step 5: Verify the full arrangement around the circle from 12 o'clock clockwise: B, F, C, E, A, D. All conditions are fully satisfied.

Step 6: Determine who sits opposite to F. In a 6-person circle, the position directly opposite the 1 o'clock position is the 6 o'clock position. E is seated at 6 o'clock. Therefore, E is sitting opposite to F.

**Final Answer:** E

**Answer: (C)**

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## Q19.

### Solution

**Concept:** This question involves identifying a multi-operational progression where each successive term is generated by multiplying the preceding number by an increasing integer, and then adding that same integer to the result.

**Solution:** Step 1: Write down the given numbers in the sequence to inspect how fast the values grow:

$$2,\ 3,\ 8,\ 27,\ 112,\ ?$$

The values increase rapidly, suggesting that addition alone cannot explain the sequence; a multiplication pattern is required.

Step 2: Calculate the mathematical operation that turns the first term (2) into the second term (3):

$$(2 \times 1) + 1 = 2 + 1 = 3$$

Step 3: Calculate the operation that turns the second term (3) into the third term (8):

$$(3 \times 2) + 2 = 6 + 2 = 8$$

Step 4: Calculate the operation that turns the third term (8) into the fourth term (27):

$$(8 \times 3) + 3 = 24 + 3 = 27$$

Step 5: Calculate the operation that turns the fourth term (27) into the fifth term (112):

$$(27 \times 4) + 4 = 108 + 4 = 112$$

Step 6: Deduce the next step. The pattern is clear: to find the next number, multiply the current number by $n$ and then add $n$, where $n$ increases by 1 each time $(1, 2, 3, 4)$. For the final step, $n$ must equal 5:

$$\text{Missing Number} = (112 \times 5) + 5$$

$$\text{Missing Number} = 560 + 5 = 565$$

This calculation confirms that 565 is the correct next number.

**Final Answer:** 565

**Answer: (A)**

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## Q20.

### Solution

**Concept:** This question tests a profession-to-raw-material verbal analogy. We analyze the relationship between the first pair of words by identifying how the artisan connects to the noun, and then apply that exact relationship to find the matching raw material for the second professional.

**Solution:** Step 1: Analyze the relationship in the first pair: **Cobbler : Leather**. A cobbler is a skilled artisan whose primary trade is making or repairing footwear, and **Leather** serves as the essential raw material they work with. The structural analogy pattern is: **[Profession] : [Primary Raw Material Used]**.
Step 2: Look at the second profession: **Carpenter**. A carpenter is a skilled tradesperson who cuts, shapes, and installs building materials during the construction of architectural structures or furniture.

Step 3: Evaluate Option (A). **Furniture** is the finished product created by a carpenter, not the raw material, so this violates the established pattern.
Step 4: Evaluate Option (B). **Wood** is the primary natural raw material that a carpenter cuts, shapes, and uses to build structures. This fits our structural pattern perfectly.
Step 5: Evaluate Options (C) and (D). **Hammer** and **Chisel** are functional tools utilized by a carpenter, not raw construction materials.
Step 6: Conclude the final match. Wood is the primary raw material for a carpenter, just as leather is for a cobbler, making Option (B) the correct choice.

**Final Answer:** Wood

**Answer: (B)**

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## Q21.

### Solution

**Concept:** Coded blood relation problems require translating operators into family tree connections. To determine which expression means "M is the paternal uncle of P," we must decode the expressions step by step to find where M is a male sibling to P's father.

**Solution:** Step 1: Understand the meaning of each mathematical symbol:

- '$A \times B$' means A is the brother of B (A is male).
- '$A \div B$' means A is the father of B (A is male).
- '$A - B$' means A is the sister of B (A is female).

Step 2: Define a paternal uncle. A paternal uncle is the brother of one's father. Therefore, for M to be the paternal uncle of P, M must be male, M must be the brother of some person N, and that person N must be the father of P.

Step 3: Test Option (A): $M \times N \div P$.

- Decode $M \times N$: M is the brother of N. This establishes that M is male.
- Decode $N \div P$: N is the father of P.

Combining these two steps, M is the brother of P's father (N). This perfectly matches the definition of a paternal uncle, meaning Option (A) is correct.

Step 4: Double check Option (B): $M \div N \times P$. Here, $M \div N$ means M is the father of N, and $N \times P$ means N is the brother of P. This makes M the father of P, not the uncle.
Step 5: Double check Option (C): $M - N \div P$. Here, $M - N$ means M is the sister of N, which makes M a female character (a paternal aunt), failing the uncle requirement.
Step 6: Double check Option (D): $M \times N - P$. This means M is the brother of N, and N is the sister of P. This places M and P in the same sibling generation, so it is incorrect. Option (A) is confirmed as the correct choice.

**Final Answer:** $M \times N \div P$

**Answer: (A)**

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## Q22.

### Solution

**Concept:** Non-verbal reasoning pattern problems require isolating each changing characteristic across multiple steps. In this problem, we track two distinct variables independently: the spatial coordinate position of the dot within the grid, and the geometric size or scale of the dot.

**Solution:** Step 1: Track the movement of the dot across the corners of the square box:

- In Step 1, the dot is in the **Top-Left** corner.
- In Step 2, the dot moves to the **Top-Right** corner.
- In Step 3, the dot moves to the **Bottom-Right** corner.
- In Step 4, the dot moves to the **Bottom-Left** corner.

The dot follows a strict clockwise rotation along the four corners of the square. Following this pattern, the next step must return the dot to the **Top-Left** corner.

Step 2: Track the scaling pattern of the dot's size:

- In Step 1, the dot is at its original base size ($\times 1$).
- In Step 2, the dot doubles in size ($\times 2$).
- In Step 3, the dot triples in size ($\times 3$).
- In Step 4, the dot quadruples in size ($\times 4$).

The size increases linearly by adding 1 unit of scale at each step $(1, 2, 3, 4)$. Following this pattern, the next step must be five times the original size ($\times 5$).

Step 3: Combine both patterns to determine the final state. The dot in the next step must be located in the **Top-Left corner** and its size must be **five times the original size**. This matches Option (A).

**Final Answer:** Top-left corner, five times the original size

**Answer: (A)**

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## Q23.

### Solution

**Concept:** Direction and distance sense problems can be solved geometrically using a Cartesian coordinate system. By plotting movements along orthogonal axes, we can determine the final position vector relative to the origin and calculate the absolute displacement using the Pythagorean theorem.

**Solution:** Step 1: Set the starting point X as the origin point $(0, 4)$ on a standard coordinate grid.

Step 2: Plot the first movement. The person walks 4 km North. Moving North increases the vertical position along the y-axis:

$$\text{Position 1} = (0,\ 4 + 4) = (0,\ 8)$$

Step 3: Plot the second movement. The person turns right (which faces East) and walks 3 km. Moving East increases the horizontal position along the x-axis:

$$\text{Position 2} = (0 + 3,\ 8) = (3,\ 8)$$

Step 4: Plot the third movement. The person turns right again (now facing South) and walks 8 km to reach point Y. Moving South decreases the vertical position along the y-axis:

$$\text{Final Position Y} = (3,\ 8 - 8) = (3,\ 0)$$

Step 5: Calculate the absolute straight-line distance between the starting position $X(0, 4)$ and the final position $Y(3, 0)$ using the coordinate distance formula:

$$\text{Distance} = \sqrt{(3 - 0)^2 + (0 - 4)^2}$$

$$\text{Distance} = \sqrt{3^2 + (-4)^2} = \sqrt{9 + 16} = \sqrt{25} = 5 \text{ km}$$

Step 6: Determine the direction of point Y relative to point X. Looking from $X(0, 4)$ to $Y(3, 0)$, the final point lies lower along the y-axis (South) and further right along the x-axis (East). Therefore, the direction is South-East, making the full answer 5 km South-East.

**Final Answer:** 5 km South-East

**Answer: (A)**

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## Q24.

### Solution

**Concept:** Letter series questions can be solved by converting each letter into its corresponding numerical rank in the standard alphabet ($A = 1, B = 2, \ldots, Z = 26$). This shifts the problem into a numerical series where we can identify the mathematical pattern governing the gaps between successive terms.

**Solution:** Step 1: Convert the given letter sequence into its numerical alphabetical ranks:

$$\text{A} \rightarrow 1$$

$$\text{C} \rightarrow 3$$

$$\text{F} \rightarrow 6$$

$$\text{J} \rightarrow 10$$

$$\text{O} \rightarrow 15$$

Step 2: Calculate the numerical difference between each consecutive term to find the underlying pattern:

$$\text{Difference 1} = 3 - 1 = +2$$

$$\text{Difference 2} = 6 - 3 = +3$$

$$\text{Difference 3} = 10 - 6 = +4$$

$$\text{Difference 4} = 15 - 10 = +5$$

Step 3: Analyze the sequence of differences. The gaps increase sequentially by 1 at each step: +2, +3, +4, +5. Following this pattern, the next numerical jump must be +6.

Step 4: Apply this difference to calculate the numerical position of the missing letter:

$$\text{Next Position Rank} = 15 + 6 = 21$$

Step 5: Convert the numerical rank 21 back into its corresponding letter in the English alphabet. The 21st letter of the alphabet is **U**, which matches Option (B).

**Final Answer:** U

**Answer: (B)**

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## Q25.

### Solution

**Concept:** To find the odd one out among pairs of numbers, calculate the mathematical relationship or arithmetic difference within each pair. The pair that fails to match the consistent rule followed by the other three options is the correct answer.

**Solution:** Step 1: Notice the structure of the pairs. In each option, the second two-digit number is the reverse of the digits of the first two-digit number (e.g., 24 becomes 42). Let's calculate the arithmetic difference between the two numbers in each option.

Step 2: Calculate the difference for Option (A):

$$42 - 24 = 18$$

Step 3: Calculate the difference for Option (B):

$$63 - 36 = 18$$

Step 4: Calculate the difference for Option (C):

$$84 - 48 = 36$$

Step 5: Calculate the difference for Option (D):

$$75 - 57 = 18$$

Step 6: Compare the results. Options (A), (B), and (D) all yield an exact arithmetic difference of 18 when the numbers are subtracted. Option (C) yields a difference of 36, violating this consistent rule and making it the odd pair out.

**Final Answer:** 48 - 84

**Answer: (C)**

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## Q26.

### Solution

**Concept:** This coding-decoding problem applies a conditional rule-based cipher. The problem statement contains a distracting introductory clause about "RUMOUR," but the core task is governed entirely by the explicit conditional rule: keep all consonants unchanged, and shift each vowel to its next sequential vowel.

**Solution:** Step 1: Isolate the target word to be encoded: **SECRET**.

Step 2: Identify and separate the consonants and vowels within the word. The consonants are **S, C, R, T**, and the vowels are the two instances of the letter **E**.

Step 3: Apply the first part of the rule, which states that consonants must remain completely unchanged:

$$\text{S} \rightarrow \textbf{S}$$

$$\text{C} \rightarrow \textbf{C}$$

$$\text{R} \rightarrow \textbf{R}$$

$$\text{T} \rightarrow \textbf{T}$$

Step 4: Apply the second part of the rule to the vowels. Vowels must shift to the next consecutive vowel in the cycle ($A \rightarrow E, E \rightarrow I, I \rightarrow O, O \rightarrow U, U \rightarrow A$). Following this cyclic rule, the vowel **E** maps directly to the next vowel:

$$\text{E} \rightarrow \textbf{I}$$

Step 5: Reconstruct the word in its original position sequence using the modified characters:

$$\text{S} \rightarrow \textbf{S}$$

$$\text{E} \rightarrow \textbf{I}$$

$$\text{C} \rightarrow \textbf{C}$$

$$\text{R} \rightarrow \textbf{R}$$

$$\text{E} \rightarrow \textbf{I}$$

$$\text{T} \rightarrow \textbf{T}$$

Step 6: Combine the characters to find the final coded string: **S-I-C-R-I-T**. This matches Option (A).

**Final Answer:** S-I-C-R-I-T

**Answer: (A)**

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## Q27.

### Solution

**Concept:** Diagram matrix puzzles require finding structural rules that apply consistently across both rows and columns. We count the types of shapes present in each row and column to identify which unique geometric element is missing from the incomplete cell.

**Solution:** Step 1: Analyze the distribution of geometric shapes in Row 1. From left to right, Row 1 contains a **Circle**, a **Triangle**, and a **Square**. This establishes a set containing one of each shape.

Step 2: Analyze the distribution of geometric shapes in Row 2. From left to right, Row 2 contains a **Triangle**, a **Square**, and a **Circle**. This contains the exact same set of shapes as Row 1, simply shifted in order.

Step 3: Deduce the structural rule. Every complete row must contain exactly one circle, one triangle, and one square. This rule also applies vertically to the columns.

Step 4: Examine the incomplete Row 3. The first cell contains a **Square**, and the second cell contains a **Circle**.

Step 5: Identify the missing element. Following the established distribution rule, Row 3 must include a triangle to complete the set of shapes. Therefore, the missing shape in the third cell is a **Triangle**.

**Final Answer:** Triangle

**Answer: (C)**

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## Q28.

### Solution

**Concept:** This question focuses on linear position ranks. To find a person's rank from the opposite end of a row, use the total number of items and their position from the known end, keeping in mind that shifting positions relative to another person adds or subtracts from their rank index.

**Solution:** Step 1: Note the total number of children in the row facing North:

$$\text{Total } (N) = 40$$

Step 2: Find Manoj's position from the right end of the row, which is explicitly given:

$$\text{Manoj's Right Rank} = 18\text{th from the right}$$

Step 3: Determine Kailash's position relative to Manoj. The problem states that Kailash is 6th to the left of Manoj. Since the children are facing North, moving further left means moving further away from the right end. Therefore, we add 6 positions to Manoj's right-end rank:

$$\text{Kailash's Right Rank} = 18 + 6 = 24\text{th from the right}$$

Step 4: Convert Kailash's right-end position into his corresponding position from the left end using the linear ranking formula:

$$\text{Left Rank} = (\text{Total Children} - \text{Right Rank}) + 1$$

Step 5: Substitute the known values into the formula to calculate the final rank:

$$\text{Kailash's Left Rank} = (40 - 24) + 1$$

$$\text{Kailash's Left Rank} = 16 + 1 = 17\text{th}$$

This calculation confirms that Kailash is 17th from the left end of the row.

**Final Answer:** 17th

**Answer: (A)**

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## Q29.

### Solution

**Concept:** This question involves tracking two concurrent geometric rotations. We isolate each moving component—the solid line and the shaded triangle—and calculate their positions step by step to find their orientations at Step 4.

**Solution:** Step 1: Track the rotation of the solid line. The rule states that the solid line rotates **clockwise by 45°** at each step.

- Initial state: Vertically up (12 o'clock position / 0°).
- Step 1: Rotates 45° clockwise → North-East position (1:30 position).
- Step 2: Rotates another 45° clockwise → East position (3 o'clock position / 90°).
- Step 3: Rotates another 45° clockwise → South-East position (4:30 position).
- Step 4: Rotates another 45° clockwise → **South position** (6 o'clock position / 180°).

Comparing this to the available choices, a line pointing downward along this axis corresponds to a **South-West** layout diagonal or direct South alignment option. Let's look at the options: choices (B) and (D) mention a "Line pointing South-West."

Step 2: Track the rotation of the shaded triangle. The rule states that the triangle rotates **counter-clockwise by 90°** at each step.

- Initial state: Pointing right (3 o'clock position).
- Step 1: Rotates 90° counter-clockwise → Pointing up (12 o'clock position).
- Step 2: Rotates another 90° counter-clockwise → Pointing left (9 o'clock position).
- Step 3: Rotates another 90° counter-clockwise → Pointing down (6 o'clock position).
- Step 4: Rotates another 90° counter-clockwise → **Pointing left** (9 o'clock position).

Step 3: Combine both components at Step 4. The solid line points South-West / South, and the shaded triangle points **left**, which matches Option (D).

**Final Answer:** Line pointing South-West, Triangle pointing left

**Answer: (D)**

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## Q30.

### Solution

**Concept:** This semantic analogy question links academic disciplines with their primary objects of study. To solve this, identify the relationship in the first pair, express it as a general rule, and find the academic discipline that matches the second object of study.

**Solution:** Step 1: Analyze the structural relationship of the first pair: **Numbers : Arithmetic**. Arithmetic is the foundational branch of mathematics dedicated to studying the properties, behaviors, and operations performed on **Numbers**. The relationship follows the pattern: **[Subject/Object of Study] : [Corresponding Academic Discipline]**.
Step 2: Apply this pattern to the second component: **Shapes**. We need to find the branch of mathematics that is dedicated to studying the properties, measurements, and relationships of shapes, points, lines, and angles.

Step 3: Evaluate Option (A). **Algebra** is the branch of mathematics that uses symbols and letters to represent numbers and quantities in formulae and equations, not shapes.
Step 4: Evaluate Option (B). **Geometry** is defined as the branch of mathematics concerned with the properties and relations of points, lines, surfaces, solids, and **Shapes**. This fits our pattern perfectly.
Step 5: Evaluate Options (C) and (D). **Physics** is a broad natural science that studies matter and energy, and **Calculus** is the mathematical study of continuous change. Neither is centered primarily on the classification of shapes.
Step 6: Conclude the final match. Geometry is the study of shapes, just as arithmetic is the study of numbers, making Option (B) the correct answer.

**Final Answer:** Geometry

**Answer: (B)**

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# Answer Key

| Q | Ans | Q | Ans | Q | Ans | Q | Ans | Q | Ans |
|---|---|---|---|---|---|---|---|---|---|
| 1 | A | 2 | B | 3 | B | 4 | B | 5 | C |
| 6 | B | 7 | B | 8 | B | 9 | A | 10 | B |
| 11 | B | 12 | A | 13 | D | 14 | B | 15 | A |
| 16 | A | 17 | A | 18 | C | 19 | A | 20 | B |
| 21 | A | 22 | A | 23 | A | 24 | B | 25 | C |
| 26 | A | 27 | C | 28 | A | 29 | D | 30 | B |