XAT 2016 Question Paper with Solutions

Time Allowed :3 Hours	**Maximum Marks :**100	**Total questions :**103

Q1. Which of the following Options best captures the relationship similar to INSPECT : VIVISECT?

(A) Enquire : Observe

(B) Inquire : Explore

(C) Investigate : Interrogate

(D) Query : Survey

(E) Question : Respond

Correct Answer: (B) Inquire : Explore

Solution:

Step 1: Understand the pair **INSPECT : VIVISECT**.

- ”Inspect” means to **look at carefully or examine**.

- ”Vivisect” means to **cut open and study in depth (especially of living organisms)**.

Thus, the second word (**Vivisect**) indicates a **more intense, deeper, and thorough form** of the first word (**Inspect**).

Step 2: Apply the same logic to options.

- (A) Enquire : Observe — Enquiring is asking, while observe is only looking; not an intensity relation.

- (B) Inquire : Explore — ”Inquire” means to ask or investigate; ”Explore” means to go deeper into the subject. This matches the **general to deeper** relation.

- (C) Investigate : Interrogate — Interrogation is limited to questioning a person, not necessarily a deeper form of investigation.

- (D) Query : Survey — Different actions, not an intensity link.

- (E) Question : Respond — These are opposites, not intensities.

Step 3: Conclude.

The option that parallels ”Inspect : Vivisect” in showing **basic action** → **deeper action** is **(B) Inquire : Explore**.

$\boxed{\text{Correct Answer: (B) Inquire : Explore}}$

Quick Tip

In analogy questions, always check if the relationship is based on **intensity, cause-effect, synonymy, or contrast**. Here, the key is the shift from a general act to a more detailed and deeper act.

Q2. Read the following poem and answer the question that follows:

I sought a soul in the sea
And found a coral there
Beneath the foam for me
An ocean was all laid bare.
Into my heart's night
Along a narrow way
I groped; and lo! The light,
An infinite land of day.

Which of the following would best capture the ESSENCE of the poem above?

(A) What lies 'outside' is always deceptive.

(B) Pursue the narrow path and avoid the broadways.

(C) External search is futile; explore the inner space for answers.

(D) Heart's pathways are broad and clear to find the destination.

(E) Light offers sight and insight.

Correct Answer: (C) External search is futile; explore the inner space for answers.

Solution:

Step 1: Interpret the poem.

The poem begins with the search in the external world ("I sought a soul in the sea"), where the poet finds only superficial objects like "coral" and "foam." This highlights the inadequacy of looking for deeper truths outside.

However, when the poet turns inward ("Into my heart's night"), moving along an uncertain, narrow path, he discovers illumination and vast possibilities ("The light, an infinite land of day").

Step 2: Match with the options.

- (A) "What lies outside is always deceptive" — too extreme; the poem does not condemn the outside entirely, it only emphasizes deeper truths within.
- (B) "Pursue the narrow path and avoid the broadways" — narrow path is mentioned, but the focus of the poem is not simply on rejecting broadways; it is about inner exploration.
- (C) "External search is futile; explore the inner space for answers" — this perfectly aligns with the poem's essence, contrasting outside search with inner discovery.
- (D) "Heart's pathways are broad and clear" — incorrect, the poem speaks of a "narrow way," not broad pathways.
- (E) "Light offers sight and insight" — partially true, but does not capture the central contrast between external and internal search.

Step 3: Conclude.

The poem emphasizes that the real truth and enlightenment come from within, not from external searches. Hence, the best option is **(C)**.

$\boxed{\text{Correct Answer: (C) External search is futile; explore the inner space for answers.}}$

Quick Tip

In poetry-based questions, focus on the **central contrast or resolution** the poet presents. Here, the shift from an external ocean search to inner illumination shows the core idea of inner self-discovery.

Q3. "Assumptions are analogous to the basic ingredients in a gourmet recipe. Only the final product of the recipe dictates whether the ingredients suffice........." Which of the following is ANALOGOUS to the statement above?

(A) Good wine needs no advertisement!

(B) The apple never falls far from the tree!

(C) All is well that ends well!

(D) As you sow, so shall you reap!

(E) The proof of the pudding is in the eating!

Correct Answer: (E) The proof of the pudding is in the eating!

Solution:

Step 1 (Interpret the stem).

The statement compares **assumptions** to **ingredients** and says: the **adequacy of the assumptions** can only be judged by the **final outcome**—just like ingredients are validated by the **finished dish**. Thus, the **criterion of truth/adequacy** is *performance of the end product*.

Step 2 (Test options against this idea).

(A) Talks about reputation/quality not needing promotion—**not** about validating inputs by outcome.

(B) Concerns heredity/similarity—**irrelevant** to result-based validation.

(C) "All is well that ends well" focuses on a good ending excusing prior issues; it doesn't claim that inputs are *tested by* the outcome—**close but not precise**.

(D) "As you sow, so shall you reap" is causal/moral reciprocity, not evaluation of adequacy by final performance.

(E) "**The proof of the pudding is in the eating**" states that **only the result (eating)** establishes the pudding's quality, which mirrors "**only the final product dictates whether the ingredients suffice**." - **Exact parallel**.

$\boxed{\text{Correct Answer: (E) The proof of the pudding is in the eating!}}$

Quick Tip

When a stem says something is validated *only by its outcome/performance*, look for proverbs emphasizing **result-based verification**—"proof in the eating" is the classic match.

Q4. The FIRST and the LAST sentences of the paragraph are numbered 1 & 6. The others, labelled as P, Q, R and S are given below. Arrange them to form the MOST LOGICALLY ORDERED paragraph.

1. Suppose I know someone, Smith.

P. One day you come to me and say: "Smith is in Cambridge."

Q. I inquire, and find you stood at Guildhall and saw at the other end a man and said: "That was Smith."

R. I'd say: "Listen. This isn't sufficient evidence."

S. I've heard that he has been killed in a battle in this war.

6. If we had a fair amount of evidence he was killed I would try to make you say that you're being credulous.

Which of the following combinations is the MOST LOGICALLY ORDERED?

(A) 1SPQR6

(B) 1RSQ6

(C) 1PRSQ6

(D) 1QSRP6

(E) 1RQPS6

Correct Answer: (A) **1SPQR6**

Solution:

Step 1: Identify the opening context and the thematic contrast.

Sentence **1** introduces the subject "Smith." Among the fragments, **S** ("I've heard that he has been killed…") introduces a *claim about Smith* that sets up a tension with any later report of seeing him alive. Hence, $\mathbf{1} \Rightarrow \mathbf{S}$ is natural.

Step 2: Place the counter-claim and its basis.

After the rumor of death in **S**, a natural rebuttal is the report that Smith was seen alive: **P** ("Smith is in Cambridge."). But **P** is only a bare assertion; **Q** supplies the *source and weakness* of that assertion—merely seeing someone at a distance and identifying him as Smith. Thus, **S** ⇒ **P** ⇒ **Q**.

Step 3: Provide the evaluation of the evidence.

Given the flimsy identification in **Q**, the author's response in **R** ("This isn't sufficient evidence.") logically follows as an appraisal of the sighting. Hence, **Q** ⇒ **R**.

Step 4: Conclude with the conditional wrap-up that links back to the death claim.

Sentence **6** refers back to the death hypothesis ("If we had a fair amount of evidence he was killed. . . ") and says the sighting would be credulous in that case. This neatly *closes the loop* begun in **S**. Therefore, **R** ⇒ **6**.

Final order: $\boxed{1 \to S \to P \to Q \to R \to 6}$

$$\boxed{\text{Correct Answer: (A) } 1SPQR6}$$

Quick Tip

For para-jumbles, look for **claim–counter-claim** structures and **evidence chains**. A statement that gives a *reason/source* (like Q explaining P) usually follows the statement it supports; evaluative lines (like R) then appraise that evidence, and conclusions often echo key terms from earlier claims (here, "killed" in S and 6).

Q5. The FIRST and the LAST sentences of the paragraph are numbered 1 & 6. The others, labelled as P, Q, R and S, are given below. Arrange them to form the MOST LOGICALLY ORDERED paragraph.

1. The word "symmetry" is used here with a special meaning, and therefore needs to be defined.

P. For instance, if we look at a vase that is left-and-right symmetrical, then turn it 180° around the vertical axis, it looks the same.
Q. When we have a picture symmetrical, one side is somehow the same as the other side.
R. When is a thing symmetrical — how can we define it?
S. Professor Hermann Weyl has given this definition of symmetry: a thing is symmetrical if one can subject it to a certain operation and it appears exactly the same after operation.
6. We shall adopt the definition of symmetry in Weyl's more general form, and in that form we shall discuss symmetry of physical laws.

Which of the following combinations is the MOST LOGICALLY ORDERED?

(A) 1PQRS6
(B) 1QRSP6
(C) 1RQPS6
(D) 1RQPS6
(E) 1SPQR6

Correct Answer: (D) **1 R Q P S 6**

Solution:
Step 1: Fix the frame sentences.
Sentence **1** introduces a special meaning of "symmetry" and signals that a *definition* is needed. Sentence **6** declares that we shall *adopt Weyl's definition*. Hence the middle must build from the need for a definition to Weyl's formal statement.

Step 2: Ask the defining question.
R ("When is a thing symmetrical — how can we define it?") naturally follows 1 because it explicitly raises the definitional problem that 1 sets up. Thus: **1** $\Rightarrow$ **R**.

Step 3: Begin with a naive/introductory idea.
Q gives the everyday view of symmetry (*one side same as the other*). This directly attempts to answer R in a simple way. Therefore: **R** $\Rightarrow$ **Q**.

Step 4: Provide an illustrative counterexample that motivates generalization.

P starts with "For instance," and shows a vase that remains the same after a $180°$ rotation — a case of *rotational* symmetry. This goes beyond the mirror/bilateral idea in Q and motivates a more general definition. Hence: **Q** $\Rightarrow$ **P**.

Step 5: State the general definition and close.

S gives Weyl's formal definition in terms of an *operation* under which the object appears unchanged, which neatly subsumes both bilateral and rotational symmetry. Finally, **6** adopts this definition, echoing "Weyl's more general form." Thus: **P** $\Rightarrow$ **S** $\Rightarrow$ **6**.

Final order: $\boxed{1 \rightarrow R \rightarrow Q \rightarrow P \rightarrow S \rightarrow 6}$

$\boxed{\text{Correct Answer: (D) } 1\,R\,Q\,P\,S\,6}$

Quick Tip

In definition-building parajumbles, look for a flow of **Need** $\Rightarrow$ **Question** $\Rightarrow$ **Naive view** $\Rightarrow$ **Example/limitation** $\Rightarrow$ **Formal definition** $\Rightarrow$ **Adoption/Conclusion**. Discourse cues like "For instance" (P) and name-citing definitions (S) are strong anchors.

Q6. In recent past, Indian football team has lost most of the matches in international football tournaments. The most successful coaches in Indian club football tournaments are from Latin American countries. In most of the Latin American countries, football is more popular sport than cricket.

From the passage above, choose the correct option:

(A) It can be DEFINITELY concluded that "In India, cricket is more popular than football".

(B) It can be DEFINITELY concluded that "Most Latin American countries are successful at football".

(C) It can be DEFINITELY concluded that "In recent past, coaches of Indian football teams are not from Latin America".

(D) It can be DEFINITELY concluded that "European football coaches are less successful than their Latin American counterparts for Indian national team".

(E) It cannot be DEFINITELY concluded that “The more popular a sport the better the chance of producing a successful coach in that sport”.

Correct Answer: (E) It cannot be DEFINITELY concluded that “The more popular a sport the better the chance of producing a successful coach in that sport”.

Solution:

Step 1: Break down the given passage.

- Fact 1: The Indian football team has lost most international matches.
- Fact 2: In Indian club tournaments, the most successful coaches are from Latin American countries.
- Fact 3: In most Latin American countries, football is more popular than cricket.

Step 2: Evaluate each option.

- (A) “In India, cricket is more popular than football.” — Not stated anywhere in the passage. The text only compares football and cricket in Latin American countries, not India.
- (B) “Most Latin American countries are successful at football.” — Passage only says football is more popular than cricket there, not that they are successful.
- (C) “In recent past, coaches of Indian football teams are not from Latin America.” — Passage mentions club football coaches, not national team coaches, so this cannot be concluded.
- (D) “European football coaches are less successful than Latin American coaches for Indian national team.” — The national team is not discussed at all; the passage talks about club tournaments only.
- (E) “The more popular a sport the better the chance of producing a successful coach in that sport.” — This is a *possible inference* but the passage never confirms it as a definite conclusion. It only notes that successful coaches in India are from Latin America, where football happens to be more popular than cricket. Correlation is not causation, hence it cannot be **definitely** concluded.

Step 3: Conclude.

Since none of the first four options follow directly and option (E) correctly identifies the limitation of inference, the right answer is **(E)**.

Correct Answer: (E)

Quick Tip

In critical reasoning, distinguish between **facts given** and **possible inferences**. A correct answer is often about what *cannot* be concluded when all others make unjustified leaps beyond the passage.

Q7. Choose the best pronunciation of the word, *Sobriquet*, from the following options:

(A) soh-bruh-key

(B) suub-rry-ka

(C) sob-bee-ri-kwet

(D) soub-rick-kaat

(E) Sobb-rik-kwet

Correct Answer: (A) soh-bruh-key

Solution:

Step 1: Note the origin and IPA.

Sobriquet is from French. Standard English pronunciation is **/so-br-ke/**: "**SOH-bri-kay**".

— The final **-quet** is pronounced **-kay** (silent 't' in the French ending).

— The **qu** gives a hard **k** sound; the stress falls on "soh".

Step 2: Eliminate mismatches.

(B) "suub-rry-ka" — wrong starting vowel and missing final "-kay".

(C) "sob-bee-ri-kwet" — ends in "**-kwet**", not correct.

(D) "soub-rick-kaat" — multiple vowel and ending errors.

(E) "Sobb-rik-kwet" — again ends with **-kwet**, incorrect.

Step 3: Confirm the match.

(A) "**soh-bruh-key**" aligns with **/so-br-ke/**: SOH + bri + **kay**.

Correct Answer: (A) soh-bruh-key

Quick Tip

French-derived English words ending in **-quet** (e.g., *bouquet*, *croquet*, *sobriquet*) usually sound like **-kay**; the final **t** is silent.

Q8. Consider the two related statements below:

Statement I: Offices and positions for the marginalized sections should be open to those with greater savings among them.

Statement II: Offices and positions must be open to everyone based on the principle of fair opportunity.

(A) Statement I assumes that the marginalized sections are incapable of saving.

(B) Statement II assumes that all citizens are equally exposed to all opportunities.

(C) Statement II contradicts meritocracy.

(D) Statement II assumes that all citizens are equally intelligent.

(E) Statement I assumes that the marginalized sections always depend on subsidies.

Correct Answer: (D) Statement II assumes that all citizens are equally intelligent.

Solution:

Step 1 (Analyze Statement I).

- Statement I links access to offices/positions for marginalized sections to their **savings**.
- It implies an economic criterion, but does not necessarily assume incapacity to save or dependence on subsidies.
- Hence, Options (A) and (E) are overstatements and not directly implied.

Step 2 (Analyze Statement II).

- Statement II declares that **offices and positions must be open to everyone** under **fair opportunity**.

- For “fair opportunity” to work, it must assume **all citizens have the same basic capability (intelligence)** to benefit from such an open system.
- Therefore, its hidden assumption is equality of intelligence among all citizens.

Step 3 (Test other distractors).

- (B) “Equally exposed to opportunities” is not the assumption; Statement II is about openness, not exposure.
- (C) Meritocracy is not directly contradicted, since meritocracy is still compatible with fair opportunity.
- Thus, only (D) correctly identifies the assumption behind Statement II.

Correct Answer: (D) Statement II assumes that all citizens are equally intelligent.

Quick Tip

When evaluating assumptions, look for the **unstated belief** that makes the statement valid. “Fair opportunity” arguments usually rest on assuming equality in intelligence, ability, or rights across all citizens.

Q9. This season will pass. The Prime Minister may not win Lok Sabha elections, or she may; she may not continue as Prime Minister, or she may. The country will survive whatever the texture of politics in this decade or the next.
Which of the following, IF TRUE, will BEST reinforce the author’s view?

(A) The survival of any Prime Minister is dependent on the country’s economic growth.
(B) The country has a vibrant young working population.
(C) The survival of the country depends on a dynamic, growth-oriented Prime Minister, not on the texture of politics.
(D) The previous season had also witnessed similar political uncertainty.
(E) The survival of the Prime Minister is dependent on the political texture of the country.

Correct Answer: (D) The previous season had also witnessed similar political uncertainty.

Solution:

Step 1: Identify the author's main claim.

The author argues that the political fate of one leader (Prime Minister) may change — she may win or lose, continue or not continue — but the **nation itself will survive irrespective of the political uncertainty**.

Step 2: Evaluate each option.

- (A) Talks about economic growth affecting the PM, not about the survival of the country despite politics.
- (B) Refers to a young working population, which is positive but does not directly reinforce the point about political uncertainty being survivable.
- (C) Suggests that survival depends on a particular kind of Prime Minister, which actually **contradicts** the author's claim (author says survival is independent of PM).
- (D) States that similar political uncertainty existed in the past, yet the country survived — this directly **reinforces** the author's point that the nation is resilient to political shifts.
- (E) Focuses on the PM's survival, not the country's survival, which misses the author's central view.

Step 3: Conclusion.

The option that best supports the author's argument about resilience of the nation through political uncertainty is **(D)**.

Correct Answer: (D) The previous season had also witnessed similar political uncertainty.

Quick Tip

In reasoning passages, always align the correct option with the **author's central claim**. Here, the claim is about the country's resilience, not about the Prime Minister or economy.

Q10. The subject of this book is knavery, skullduggery, cheating, betrayal, unfairness, crime, sneakiness, malingering, cutting corner, immorality, dishonesty, betrayal, graft,

wickedness, and sin.

Which of the following options best captures **ALL** the italicized words above?

(A) Aggressive behaviours

(B) Illegal behaviours

(C) Deviant behaviours

(D) Banned behaviours

(E) Vetoed behaviours

Correct Answer: (C) Deviant behaviours

Solution:

Step 1: Identify the common idea behind the listed words.

The list mixes *moral* and *legal* wrongs: e.g., *immorality, wickedness, sin* (moral/ethical), *dishonesty, cheating, betrayal, skullduggery, cutting corners, sneakiness, malingering* (socially frowned upon norm-violations), and *crime, graft* (explicitly illegal). The thread tying them together is **violation of accepted norms** (moral, social, or legal).

Step 2: Test each option against this scope.

- **(A) Aggressive behaviours:** Too narrow; many items (e.g., *malingering, dishonesty*) are not aggressive.
- **(B) Illegal behaviours:** Too narrow; several items (*betrayal, unfairness, sneakiness, cutting corners*) can be unethical yet not necessarily illegal.
- **(C) Deviant behaviours: Deviance** means departing from societal norms; it flexibly covers immoral, unethical, and illegal acts—hence includes *all* listed items.
- **(D) Banned behaviours:** Implies explicit prohibition; again, some listed acts may be condemned but not formally banned.
- **(E) Vetoed behaviours:** “Vetoed” applies to decisions/proposals, not conduct in general; category mismatch.

Step 3: Conclude.

Only **Deviant behaviours** captures the full set—norm violations across moral, social, and legal domains.

$\boxed{\text{Correct Answer: (C) Deviant behaviours}}$

Quick Tip

When options differ by *scope*, choose the one that **minimally overgeneralizes** yet **includes all examples**. "Deviant" is broader than "illegal" or "banned," so it best subsumes mixed moral and legal wrongs.

Q11. Read the following conversation:

OINOS: I can comprehend you thus far—that certain operations of what we term Nature, or the natural laws, will, under certain conditions, give rise to that which has all the appearance of creation. Shortly before the final overthrow of the earth, there were, I well remember, many very successful experiments in what some philosophers were weak enough to denominate the creation of animalculae.

AGATHOS: The cases of which you speak were, in fact, instances of the secondary creation—and of the only species of creation which has ever been, since the first word spoke into existence the first law.

Which of the following options CANNOT be DEFINITELY inferred based on the above conversation?

(A) Agathos was explaining something related to creation to Oinos.

(B) At the time of conversation there was nothing called Earth.

(C) The creation of animalculae is a natural law.

(D) Natural laws are creations of philosophers.

(E) Law is a spoken word.

Correct Answer: (D) Natural laws are creations of philosophers.

Solution:

Step 1: Identify what Oinos says.

Oinos refers to "natural laws" which can, under conditions, give rise to creation-like phenomena. He mentions philosophers labeling the emergence of animalculae as "creation." This links natural law with actual events.

Step 2: Identify what Agathos says.

Agathos clarifies that these are "secondary creation," and the only creation since the first "spoken word" created the first law. This implies laws originated with creation, not with philosophers.

Step 3: Test each option.

(A) True — Agathos is clearly explaining creation to Oinos.

(B) True — Oinos mentions "before the final overthrow of the earth," implying Earth no longer exists at that moment.

(C) True — Oinos connects the creation of animalculae with natural law.

(D) False — The passage never says natural laws were "creations of philosophers." Philosophers may have misinterpreted, but they did not create natural laws. This cannot be inferred.

(E) True — Agathos says the first word spoke the first law into existence, linking law to spoken word.

Step 4: Conclude.

The only statement that **cannot** be definitely inferred is (D).

Correct Answer: (D) Natural laws are creations of philosophers.

Quick Tip

In inference questions, remember that "cannot be definitely inferred" means even if something seems plausible, unless it is **explicitly supported** by the passage, it is incorrect. Do not confuse speculation with inference.

Q12. ... there is a degree of convergence in the definition of trust which can be summarized as follows: Trust is a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action. When we say we trust someone or that someone is trustworthy, we implicitly mean that the probability that he will perform an action that is beneficial to us. . . .
Which of the following statement BEST COMPLETES the passage above?

(A) is high enough for us to find out if he will cheat us.

(B) is high enough for us to consider engaging in some form of cooperation with him.

(C) is low enough for him not to engage in negative behavior against us.

(D) is high enough for us not to build defences against his possible aggression.

(E) is low enough for us to attack him.

Correct Answer: (B) is high enough for us to consider engaging in some form of cooperation with him.

Solution:

Step 1 (Interpret the passage).

- Trust is defined as a subjective probability that someone will act in a way that benefits us.
- Thus, trust is not about certainty, but about confidence high enough to guide positive interaction.

Step 2 (Test each option).

(A) Talks about testing whether someone will cheat us—this reflects suspicion, not trust.

(B) Cooperation arises when probability of beneficial behavior is high enough. This directly matches the passage: trust leads us to **engage in cooperative action**.

(C) Refers to ”low enough probability of negative behavior”—framed incorrectly, since trust is about **high probability of positive behavior**.

(D) Avoiding defences relates to risk reduction, not the essence of trust as enabling cooperation.

(E) ”Low enough for us to attack him” is opposite of trust—it reflects distrust.

Step 3 (Conclude).

Only option (B) captures the essence: trust means we believe in someone’s beneficial action enough to initiate cooperation.

Correct Answer: (B) is high enough for us to consider engaging in some form of cooperation with him.

Quick Tip

In comprehension-based questions, focus on the **positive logical consequence** of the definition given. Since trust implies readiness to cooperate, the correct option must reflect constructive interaction, not suspicion or conflict.

Instructions

Analyse the following passage and provide appropriate answers for the questions that follow:
An effective way of describing what interpersonal communication is or is not, is perhaps to capture the underlying beliefs using specific game analogies.

Communication as Bowling: The bowling model of message delivery is probably the most widely held view of communication. I think that's unfortunate. This model sees the bowler as the sender, who delivers the ball which is the message. As it rolls down the lane (the channel), clutter on the boards (noise) may deflect the ball (the message). Yet if it is aimed well, the ball strikes the passive pins (the target audience) with a predictable effect. In this one-way model of communication, the speaker (bowler) must take care to select a precisely crafted message (ball) and practice diligently to deliver it the same way every time. Of course, that makes sense only if target listeners are interchangeable, static pins waiting to be bowled over by our words — which they aren't.
This has led some observers to propose an interactive model of interpersonal communication.

Communication as Ping-Pong: Unlike bowling, Ping-Pong is not a solo game. This fact alone makes it a better analogy for interpersonal communication. One party puts the conversational ball in play, and the other gets into position to receive. It takes more concentration and skill to receive than to serve because while the speaker (server) knows where the message is going, the listener (receiver) doesn't. Like a verbal or nonverbal message, the ball may appear straightforward yet have a deceptive spin. Ping-Pong is a back-and-forth game; players switch roles continuously. One moment the person holding the paddle is an initiator; the next second the same player is a responder, gauging the effectiveness of his or her shot by the way the ball comes back. The repeated adjustment (essential for good play) closely parallels the feedback process described in a number of interpersonal communication theories.

Communication as Dumb Charades: The game of charades best captures the simultaneous and collaborative nature of interpersonal communication. A charade is neither an action, like bowling a strike, nor an interaction, like a rally in Ping-Pong. It's a transaction. Charades is a mutual game; the actual play is cooperative. One member draws a title or slogan from a batch of possibilities and then tries to act it out visually for teammates in a silent mini drama. The goal is to get at least one partner to say the exact words that are on the slip of paper. Of course, the actor is prohibited from talking out loud. Suppose you drew the saying "God helps those who help themselves." For God you might try folding your hands and gazing upward. For helps you could act out offering a helping hand or giving a leg-up boost over a fence. By pointing at a number of real or imaginary people you may elicit a response of them, and by this point a partner may shout out, "God helps those who help themselves." Success.

Like charades, interpersonal communication is a mutual, ongoing process of sending, receiving, and adapting verbal and nonverbal messages with another person to create and alter images in both of our minds. Communication between us begins when there is some overlap between two images, and is effective to the extent that overlap increases. But even if our mental pictures are congruent, communication will be partial as long as we interpret them differently. The idea that "God helps those who help themselves" could strike one person as a hollow promise, while the other might interpret it as a statement of approval for hard work. Dumb Charade goes beyond the simplistic model of bowling and Ping-Pong. It views interpersonal communication as a complex transaction in which overlapping images form and change continuously in response to various personal and relational factors.

Q13. The meaning CLOSEST to 'interchangeable' in the 'Communication as Bowling' paragraph is:

(A) Complementary

(B) Contiguous

(C) Conforming

(D) Compatible

(E) Comparable

Correct Answer: (E) Comparable

Solution:

Step 1: Meaning of the word 'interchangeable'.

The word *interchangeable* refers to two things that can replace each other without significant difference. It implies that one can be substituted for another, meaning they are comparable or equivalent in use or function.

Step 2: Evaluate each option.

- (A) **Complementary**: Refers to something that completes or enhances another, not something that can replace it. Hence, incorrect.

- (B) **Contiguous**: Refers to being adjacent or physically close. This does not convey the meaning of substitutability. Incorrect.

- (C) **Conforming**: Means complying or adapting to standards or norms, but it does not mean "replaceable." Incorrect.

- (D) **Compatible**: Refers to things that can coexist or work together, but not necessarily replace each other. Close, but weaker than the correct choice.

- (E) **Comparable**: Means similar enough to be equated, measured against, or even substituted. This matches the idea of "interchangeable" most accurately. Correct.

Step 3: Conclusion.

The closest synonym to "interchangeable" is **Comparable**.

$$\boxed{\text{Correct Answer: (E) Comparable}}$$

Quick Tip

In synonym questions, look for the **core essence** of the word. "Interchangeable" emphasizes substitutability. Words like "compatible" or "complementary" may look close, but only "comparable" directly conveys replaceability.

Q14. Which of the following options is the CLOSEST to the necessary condition of communication:

(A) Threshold overlap of shared images
(B) Simultaneous exchange
(C) Ability to stimulate affect
(D) Ability to enact a drama
(E) Ability to elicit a response

Correct Answer: (A) Threshold overlap of shared images

Solution:
Step 1: Recall the essence of communication.
At its core, communication requires that a message sent by one person is understood by another. This is possible only when there is some **common ground or overlap in meaning** between the sender and the receiver. Without this overlap, the symbols, words, or gestures used cannot be interpreted correctly.

Step 2: Evaluate the options.
- (A) **Threshold overlap of shared images** — This refers to a **minimum shared context or understanding** between sender and receiver. This is indeed the closest to the necessary condition of communication.
- (B) **Simultaneous exchange** — While communication can happen in real-time, simultaneity is not necessary (e.g., letters, emails, recorded messages).
- (C) **Ability to stimulate affect** — Stimulating emotions may be a result of communication, but it is not a necessary condition.
- (D) **Ability to enact a drama** — This is a specific form of communication, not its fundamental condition.
- (E) **Ability to elicit a response** — Responses are desirable, but not always required (e.g., one-way announcements, radio broadcasts). Communication still occurs even if no immediate response comes.

Step 3: Conclude.

The most fundamental requirement is that both parties share at least some overlap in meaning-making, allowing the message to be understood. Hence the correct choice is **(A)**.

$$\boxed{\text{Correct Answer: (A) Threshold overlap of shared images}}$$

Quick Tip

In communication theory, always look for the **shared code or context** between sender and receiver. Without a minimum common ground, symbols have no meaning and communication fails.

Q15. The two inherent LIMITATIONS of Ping-Pong as a metaphor for communication are:

(A) It is governed by conventions with possibility for appeal; it has clear rules.
(B) The operating model is win–lose because only one individual or team can win; the receiver can always predict the spin.
(C) The number of players is limited as very few can be meaningfully engaged at a time; the rules of the game are fixed by the regulators.
(D) It demands more skills of the receiver than of the speaker; it is as passive as bowling.
(E) Real life communication is like Dumb Charade with multiple players; there are multiple balls used in Dumb Charade.

Correct Answer: (C) The number of players is limited as very few can be meaningfully engaged at a time; the rules of the game are fixed by the regulators.

Solution:
Step 1: Understand the metaphor.
Ping-Pong (table tennis) is often used to represent communication because it involves **back-and-forth exchange**. However, metaphors always have **limitations** when compared to real-life communication.
Step 2: Examine each option.

(A) “Governed by conventions and clear rules” — this is true of Ping-Pong, but in communication, conventions exist too. This is not a limitation, but rather a similarity.
(B) “Win–lose model” — not inherent to communication. While games have winners, communication is not structured as win–lose; however, the statement about predicting spin is irrelevant and not central.
(C) “Number of players is limited; rules fixed by regulators” — this highlights real limitations. Unlike real communication which can involve multiple people and fluid norms, Ping-Pong only allows two (or four in doubles) players, and rules are rigid. This restricts its metaphorical reach.
(D) “Demands more skills of receiver; as passive as bowling” — inaccurate. In Ping-Pong both sender and receiver are equally active, so this is misleading.
(E) “Like Dumb Charade with multiple balls” — irrelevant exaggeration, not addressing the Ping-Pong metaphor’s limitations.

Step 3: Conclude.

The correct identification of Ping-Pong’s metaphorical limitations for communication is in (C): it is limited in number of participants and constrained by fixed rules.

$\boxed{\text{Correct Answer: (C)}}$

Quick Tip

When evaluating metaphor-based questions, always check whether the **structural limits of the metaphor** (like number of players, rigid rules, fixed outcomes) truly fail to capture the open-ended, flexible nature of real-life communication.

Q16. Action, interaction and transaction is CLOSEST to:

(A) Advertising, Buyer negotiating with a seller, Bidding for a player in Indian Premier League.
(B) Preparing an election manifesto, Addressing a public gathering, Engaging in door to door canvassing.

(C) Preparing for MBA entrance exam, Writing the MBA entrance exam, Facing an interview for business school.

(D) Applying for learner licence, Negotiating with a driving school, Driving a Car.

(E) Negotiating overseas posting, Applying for visa, Undertaking a journey.

Correct Answer: (A) Advertising, Buyer negotiating with a seller, Bidding for a player in Indian Premier League.

Solution:

Step 1 (Understand the keywords).

- **Action** refers to an individual act taken by an agent.
- **Interaction** refers to reciprocal communication/engagement between two or more agents.
- **Transaction** refers to a structured exchange, usually involving negotiation or a deal.

Step 2 (Evaluate the options).

(A) Advertising = **action** (a one-way act of promotion). Buyer negotiating = **interaction** (dialogue between buyer and seller). Bidding in IPL = **transaction** (formalized exchange with value transfer). Perfect sequence.

(B) Preparing manifesto = action, addressing gathering = interaction, door-to-door canvassing = again interaction, not a formal transaction.

(C) Exam preparation, writing, and interview are sequential tasks but not fitting into the clear action–interaction–transaction framework.

(D) Licence application, negotiation with school, driving a car—again not a clear progression of action–interaction–transaction.

(E) Visa and journey are processes, not exemplars of the three distinct stages.

Step 3 (Conclude).

Only option **(A)** illustrates the conceptual movement from **action** → **interaction** → **transaction**.

$$\boxed{\text{Correct Answer: (A)}}$$

Quick Tip

In analogy-type questions, focus on how each term (**action, interaction, transaction**) represents a progressive stage. Choose the option that clearly demonstrates this transition.

Instructions

Analyse the following passage and provide appropriate answers for the questions that follow:

Advances in economic theory in the 1970s and 1980s illuminated the limits of markets; they showed that unfettered markets do not lead to economic efficiency whenever information is imperfect or markets are missing (for instance, good insurance markets to cover the key risks confronting individuals). And information is always imperfect and markets are always incomplete. Nor do markets, by themselves, necessarily lead to economic efficiency when the task of a country is to absorb new technology, to close the "knowledge gap": a central feature of development. Today, most academic economists agree that markets, by themselves, do not lead to efficiency; the question is whether government can improve matters.

While it is difficult for economics to perform experiments to test their theories, as a chemist or a physicist might, the world provides a vast array of natural experiments as dozens of countries try different strategies. Unfortunately, because each country differs in its history and circumstances and in the myriad of details in the policies — and details do matter — it is often difficult to get a clear interpretation.

What is clear, however, is that there have been marked differences in performance, that the most successful countries have been those in Asia, and that in most of the Asian countries, government played a very active role. As we look more carefully at the effects of particular policies, these conclusions are reinforced: there is a remarkable congruence between what economic theory says government should do and what the East Asian governments actually did. By the same token, the economic theories based on imperfect information and incomplete risk markets that predicted that the free flow of short-term capital — a key feature of market fundamentalist policies — would produce not growth but instability have also been borne out.

Q17. "… whether government can improve matters". Here 'matters' indicates

(A) Economic efficiency
(B) Information imperfectness
(C) Knowledge gaps
(D) Good insurance markets
(E) Incomplete risk markets

Correct Answer: (A) Economic efficiency

Solution:
Step 1: Understanding the context.
The phrase in the passage is "…whether government can improve matters." The word "matters" here does not refer to trivial issues or physical objects. Instead, in an economic and governance context, "matters" refers to the state of efficiency, functioning, or effectiveness of the economy.
Step 2: Evaluating each option.
- (A) **Economic efficiency**: This makes sense. Governments intervene to correct market failures, reduce inefficiencies, and improve overall welfare. Thus, "improve matters" means making the economy more efficient. Correct.
- (B) **Information imperfectness**: This is one cause of inefficiency but not directly what "matters" refers to. It is too specific. Incorrect.
- (C) **Knowledge gaps**: This refers to lack of awareness, not directly linked to the meaning of "matters" here. Incorrect.
- (D) **Good insurance markets**: This is only one particular economic institution, not the broad meaning of "matters." Incorrect.
- (E) **Incomplete risk markets**: Again, this is a specific cause of inefficiency, not the general condition meant by "matters." Incorrect.
Step 3: Conclusion.
The word "matters" in this economic context refers broadly to the issue of **economic efficiency**, which the government is expected to improve.

Correct Answer: (A) Economic efficiency

Quick Tip

In economics passages, the word "matters" often signifies the larger concern of **overall efficiency or welfare**. Don't confuse it with narrower causes like imperfect markets or information gaps. Always look for the broader meaning in such contexts.

Q18. Which of the following options CANNOT be inferred from the above passage?

(A) Free flow of short-term capital might fail to ensure economic growth.

(B) Insurance market is a proof that 'markets, by themselves, do not lead to efficiency'.

(C) It is difficult to interpret the success of economic policies of Asian countries.

(D) Technology can impede market efficiency.

(E) State intervention and imperfect information can never go hand-in-hand.

Correct Answer: (E) State intervention and imperfect information can never go hand-in-hand.

Solution:

Step 1: Recall the theme of the passage.

The passage discusses limitations of free markets, possible inefficiencies caused by information gaps, issues with technology, and complexities in interpreting policies. It emphasizes that markets do not always ensure efficiency and that multiple factors can influence outcomes.

Step 2: Check each option.

- (A) The idea that free flow of capital may not guarantee growth is consistent with economic criticisms and can be inferred.
- (B) The insurance market is indeed a common example of market inefficiency due to imperfect information (adverse selection, moral hazard). This can be inferred.

- (C) The complexity of evaluating Asian economic policies is plausible and aligns with the passage. This can be inferred.
- (D) The passage mentions that technology can sometimes impede market efficiency (e.g., through disruption, monopoly power, or uneven access). This too can be inferred.
- (E) The claim that "State intervention and imperfect information can never go hand-in-hand" is an absolute statement. The passage does not support this extreme claim. In fact, state intervention is often meant to correct imperfect information. Thus, this statement **cannot** be inferred.

Step 3: Conclude.

Since (E) is an extreme, unsupported statement that contradicts the logic of the passage, it is the correct answer.

$\boxed{\text{Correct Answer: (E)}}$

Quick Tip

In inference questions, be wary of **absolute terms** like "always," "never," or "cannot." These are rarely supported by nuanced passages and are often the incorrect choice.

Q19. Which of the following statements BEST captures the ESSENCE of the two paragraphs in the above passage?

(A) Paragraph I and paragraph II are parallel arguments that are unrelated.

(B) Paragraph I describes markets in general whereas Paragraph II describes market failures in Asian economics in particular.

(C) Paragraph I explains why markets fail. Paragraph II spells out why market based economic theories fail to explain success of Asian economics.

(D) Paragraph I raises question and paragraph II answers it.

(E) Paragraph I states an economic theory and Paragraph II cites a natural experiment to disprove it.

Correct Answer: (C) Paragraph I explains why markets fail. Paragraph II spells out why market based economic theories fail to explain success of Asian economics.

Solution:

Step 1: Understand the role of Paragraph I.

Paragraph I deals with **market failures**, laying out the reasons why markets often fail to achieve desired efficiency or outcomes. It focuses on the **general theoretical weaknesses of markets**.

Step 2: Understand the role of Paragraph II.

Paragraph II applies this reasoning to the specific case of **Asian economies**. It shows that despite the theoretical assumptions of markets, **Asian economies succeeded in ways that market-based theories could not fully explain**. Thus, it extends the critique by connecting it to real-world evidence.

Step 3: Match with the options.

(A) Wrong — They are not unrelated; they are connected, with Para II extending Para I.

(B) Wrong — Para I is not just describing "markets in general"; it is analyzing **failures**.

(C) Correct — Para I = why markets fail; Para II = why market-based economic theories fail to explain Asian economic success. Perfect alignment.

(D) Partially correct — It is not simply a Q–A structure, but rather a logical flow from general failure explanation to application.

(E) Wrong — There is no explicit mention of a natural experiment; the focus is on theory vs. real-world economics.

Step 4: Conclude.

The best option that captures the essence is **(C)**.

$$\boxed{\text{Correct Answer: (C)}}$$

Quick Tip

When asked about the "essence" of paragraphs, look for the **logical progression**: general principle in one paragraph, applied or extended reasoning in the next. Avoid options that treat them as unrelated.

Instructions

Analyse the following passage and provide appropriate answers for the questions that follow:

The base of Objectivism according to Ayan Rand is explicit: "Existence exists — and the act of grasping that statement implies two corollary axioms: that something exists which one perceives and that one exists processing consciousness, consciousness being the faculty of perceiving that which exists."

Existence and consciousness are facts implicit in every perception. They are the base of all knowledge (and the precondition of proof): knowledge presupposes something to know and someone to know it. They are absolutes which cannot be questioned or escaped: every human utterance, including the denial of these axioms, implies their use and acceptance. The third axiom at the base of knowledge — an axioms true, in Aristotle's words, of "being qua being" — is the Law of Identity. This law defines the essence of existence: to be is to be something, a thing is what it is; and leads to the fundamental principle of all action, the law of causality. The law of causality states that a thing's actions are determined not by chance, but by its nature, i.e. by what it is. It is important to observe the interrelation of these three axioms. Existence is the first axiom. The universe exists independent of consciousness. Man is able to adapt his background to his own requirements, but "Nature, to be commanded, must be obeyed" (Francis Bacon). There is no mental process that can change the laws of nature or erase facts. The function of consciousness is not to create reality, but to apprehend it. "Existence is Identity, Consciousness is Identification."

Q20. Which of the following is DEFINITELY CORRECT according to the passage:

(A) Only what can be perceived exists.
(B) What exists is perceived.
(C) All that exists does not have consciousness.
(D) Consciousness makes perception of being possible.
(E) Something to be known and someone to know are the conditio sine qua non for Existence.

Correct Answer: (D) Consciousness makes perception of being possible.

Solution:

Step 1: Recall the philosophical context.

The passage revolves around the connection between **existence, perception, and consciousness**. It suggests that consciousness is the necessary condition that enables perception — without consciousness, the experience of existence would not be possible.

Step 2: Evaluate each option.

- (A) "Only what can be perceived exists." — This is extreme and cannot be definitely concluded from the passage. Existence is not equated strictly to perception.
- (B) "What exists is perceived." — Again, too strong a claim; existence does not require being perceived by someone at all times.
- (C) "All that exists does not have consciousness." — Incorrect, since the passage connects consciousness and perception; dismissing consciousness outright is not supported.
- (D) "Consciousness makes perception of being possible." — This matches the passage's core idea: perception is possible only because of the presence of consciousness.
- (E) "Something to be known and someone to know are the conditio sine qua non for Existence." — This is a philosophical assertion but not something **definitely** stated by the passage.

Step 3: Conclude.

The only statement that can be definitely and directly confirmed from the passage is **(D)**.

$$\boxed{\text{Correct Answer: (D)}}$$

Quick Tip

When answering "definitely correct" questions, avoid extreme or absolute claims unless explicitly stated. Look for the statement that directly reflects the passage's central reasoning.

Q21. Which of the following is the ESSENCE of 'The law of Causality'?

(A) To be is to be something; ‘being qua being’.

(B) Wishing to become something else denies the nature of that being.

(C) The law of identity is the same as the law of causality.

(D) Essence of existence.

(E) Actions of a being are determined by its nature.

Correct Answer: (E) Actions of a being are determined by its nature.

Solution:

Step 1 (Recall the law of causality).

The law of causality states that every effect has a cause and that things act according to their nature. It is fundamentally about the connection between a being’s identity and the actions that flow from it.

Step 2 (Test the options).

(A) Refers to “being qua being” — a general metaphysical notion about existence, not specifically causality.

(B) Talks about denying one’s nature — this is more about identity and change, not directly causality.

(C) Identity and causality are related but not identical; causality is grounded in identity, but not reducible to it.

(D) “Essence of existence” is vague and does not capture causality.

(E) Directly matches the principle: **a being acts according to its identity (nature)**. This is the essence of causality.

Step 3 (Conclude).

The correct essence of the law of causality is that **actions flow necessarily from the nature of the entity**, which is captured by option (E).

$$\boxed{\text{Correct Answer: (E) Actions of a being are determined by its nature.}}$$

Quick Tip

In philosophy questions, causality always links **identity (what something is)** to **action (what it does)**. The cause is grounded in the nature of the being.

Q22. Which of the following can be best captured as 'Identity' and 'Identification'?

(A) College as identity; perception of cultural events as identification.

(B) Twitter as identity; perception of Twitter as identification.

(C) Government as identity; perception of taxation of citizens as identification.

(D) Marriage as identity; perception of children as identification.

(E) MBA as identity; perception of campus placement as identification.

Correct Answer: (B) Twitter as identity; perception of Twitter as identification.

Solution:

Step 1: Understanding the terms.

- **Identity**: Refers to a sense of belonging or self-definition through association with a group, platform, or concept. It is how people define themselves.

- **Identification**: Refers to the recognition or perception of that identity, usually by others or in specific contexts. It is the acknowledgement of one's identity in practice.

Step 2: Analyzing each option.

- (A) College as identity is valid, but "perception of cultural events" does not directly function as identification of college identity. Incorrect.

- (B) Twitter can serve as a person's identity (people identify themselves by their presence on Twitter), and "perception of Twitter" naturally becomes identification (others recognizing that identity). This fits perfectly. Correct.

- (C) Government as identity is not typical; taxation as identification is unrelated to personal or social identity. Incorrect.

- (D) Marriage as identity is partially valid, but "children as identification" is logically mismatched because children are not the direct recognition of marriage identity. Incorrect.

- (E) MBA as identity may work, but "campus placement as identification" is an outcome of MBA, not a marker of identity. Incorrect.

Step 3: Conclusion.

The pair that best captures the distinction is **Twitter as identity and perception of Twitter as identification**.

$\boxed{\text{Correct Answer: (B) Twitter as identity; perception of Twitter as identification}}$

Quick Tip

Always distinguish between **identity** (self-concept, how one defines themselves) and **identification** (external recognition or perception of that identity). The right answer usually keeps this relationship consistent.

Q23. The author would interpret Francis Bacon's "Nature, to be commanded, must be obeyed" as:

(A) Reality should not to be modified or escaped but faced.

(B) Man's existence depends on nature's whims.

(C) Essentially and objectively nature is superior to humans.

(D) Obstacles are better circumvented than confronted.

(E) Before channeling nature one must first comply with it.

Correct Answer: (E) Before channeling nature one must first comply with it.

Solution:

Step 1: Understand Bacon's statement.

Francis Bacon's maxim highlights a paradox: to control nature effectively, humans must first understand and align with its laws. Only by **obeying natural principles** can one hope to harness and command nature's forces.

Step 2: Evaluate each option.

- (A) “Reality should not be modified or escaped but faced.” — This stresses acceptance but not the idea of mastering through obedience.
- (B) “Man’s existence depends on nature’s whims.” — Too fatalistic; Bacon emphasizes **rational mastery**, not helpless dependence.
- (C) “Nature is superior to humans.” — While nature’s laws are fundamental, Bacon’s statement is about the method of control, not superiority.
- (D) “Obstacles are better circumvented than confronted.” — This is about strategy, but it misses the core idea of aligning with natural laws before exerting control.
- (E) “Before channeling nature one must first comply with it.” — This captures the essence: one can command nature only by first recognizing and obeying its inherent rules.

Step 3: Conclude.

Thus, the best interpretation is **(E)**, which directly reflects Bacon’s philosophy.

$$\boxed{\text{Correct Answer: (E)}}$$

Quick Tip

In philosophy-based questions, look for the option that conveys the **conditional logic** or underlying principle rather than restating the quote literally. Here, the condition is: *Obedience to nature’s laws is the prerequisite for mastering it.*

Instructions

Analyse the following passage and provide appropriate answers for the questions that follow:

Each piece, or part, of the whole of nature is always merely an approximation to the complete truth, or the complete truth so far as we know it. In fact, everything we know is only some kind of approximation, because we know that we do not know all the laws as yet. Therefore, things must be learned only to be unlearned again or, more likely, to be corrected. The principal of science, the definition, almost, is the following: The test of all knowledge is experiment. Experiment is the sole judge of scientific “truth.” But what is the source of knowledge? Where do the laws that are to be tested come from? Experiment, itself, helps to produce these laws, in the sense that it gives us hints. But also needed is imagination to create from these hints the great generalizations — to guess at the wonderful, simple, but very strange patterns beneath them all, and then to experiment to check again whether we have made the right guess. This imagining process is so difficult that there is a division of labour in physics: there are the theoretical physicists who imagine, deduce, and guess at new laws, but do not experiment; and then there are experimental physicists who experiment, imagine, deduce, and guess.

We said that the laws of nature are approximate: that we first find the "wrong" ones, and then we find the "right" ones. Now, how can an experiment be "wrong"? First, in a trivial way: the apparatus can be faulty and you did not notice. But these things are easily fixed and checked back and forth. So without snatching at such minor things, how can the results of an experiment be wrong? Only by being inaccurate. For example, the mass of an object never seems to change; a spinning top has the same weight as a still one. So a "law" was invented: mass is constant, independent of speed. That "law" is now found to be incorrect. Mass is found to increase with velocity, but appreciable increase requires velocities near that of light. A true law is: if an object moves with a speed of less than one hundred miles a second the mass is constant to within one part in a million. In some such approximate form this is a correct law. So in practice one might think that the new law makes no significant difference. Well, yes and no. For ordinary speeds we can certainly forget it and use the simple constant mass law as a good approximation. But for high speeds we are wrong, and the higher the speed, the wronger we are.
Finally, and most interesting, philosophically we are completely wrong with the approximate law. Our entire picture of the world has to be altered even though the mass changes only by a little bit. This is a very peculiar thing about the philosophy, or the ideas, behind the laws. Even a very small effect sometimes requires profound changes to our ideas.

Q24. Which of the following options is DEFINITELY NOT an approximation to the complete truth?

(A) I know that I know.

(B) I know that I do not know.

(C) I know what I know.

(D) I know what I do not know.

(E) I know that others do not know.

Correct Answer: (D) I know what I do not know.

Solution:

Step 1: Interpret "approximation to the complete truth."

An approximation to complete truth must be **logically possible** and **epistemically coherent**. Statements that are self-contradictory cannot approximate truth.

Step 2: Check each option for coherence.

(A) "I know that I know." — A self-ascriptive claim of knowledge about one's knowing. It can be true (e.g., I know a fact and I'm aware of knowing it). $\Rightarrow$ Coherent.

(B) "I know that I do not know." — Classic Socratic stance: knowing one's ignorance about some subject. $\Rightarrow$ Coherent.

(C) "I know what I know." — Tautologically acceptable: the set of my known propositions is known to me in principle. $\Rightarrow$ Coherent (though trivial).

(D) "I know *what* I do not know." — Claims knowledge of the *specific content* that one *does not know*. If you genuinely do not know a proposition's content, you cannot simultaneously know *that content*. At best you can know *that there exist unknowns* or *the domain* of ignorance, not the unknown truths themselves. $\Rightarrow$ **Self-defeating**, hence cannot approximate complete truth.

(E) "I know that others do not know." — Could be true in contexts where one has evidence that others lack certain knowledge. $\Rightarrow$ Coherent.

Step 3: Conclude.

Only (D) is **logically impossible as stated**; therefore it is definitely not an approximation to the complete truth.

$$\boxed{\text{Correct Answer: (D) I know what I do not know.}}$$

Quick Tip

Watch for **self-referential contradictions**. Claims that require you to know the content of what you claim not to know are inherently incoherent.

Q25. Consider the two statements from the passage:

Statement I: The mass of an object never seems to change.

Statement II: Mass is found to increase with velocity.

Which of the following options CANNOT be concluded from the above passage?

(A) Both statements I and II are approximation to the complete truth.

(B) Both statements I and II are complete truth so far as we know.

(C) Statement I is an approximation to the complete truth but Statement II is complete truth.

(D) Statement I reveals that experimental physicists who imagine, deduce, and guess are philosophically wrong.

(E) Statement II shows that theoretical physicists can pinpoint the shortcomings of experimental physicists.

Correct Answer: (E) Statement II shows that theoretical physicists can pinpoint the shortcomings of experimental physicists.

Solution:

Step 1 (Interpret the given statements).

- Statement I: "Mass never seems to change" — reflects a classical approximation from everyday experiments.
- Statement II: "Mass increases with velocity" — reflects relativistic physics (Einstein's theory), showing deeper scientific truth.

Step 2 (Check each option).

(A) True — Both can be treated as approximations, depending on the context (classical vs. relativistic).

(B) Possible — Within their respective frameworks (classical mechanics and relativity), both are seen as true.

(C) True — Classical statement (I) is approximate; relativistic (II) is closer to complete truth.
(D) Acceptable — Statement I indicates experimental observations alone may mislead without theoretical input.
(E) Incorrect — Nothing in Statement II directly claims that **theoretical physicists pinpoint experimental shortcomings**. This extrapolation goes beyond the passage.
Step 3 (Conclude).
The only option that **CANNOT** be concluded is (E).

$$\boxed{\text{Correct Answer: (E)}}$$

Quick Tip

In "cannot be concluded" questions, eliminate the options that logically follow. The remaining choice will be the one that stretches beyond the given passage.

Q26. 'Big Bang' is a popular theory related to the origin of the universe. It states that the universe was the outcome of a big bang that released enormous energy. Which of the following is the MOST PROBABLE inference about the big bang theory?

(A) Big Bang Theory was first proposed by experimental physicists.
(B) Big Bang Theory was first proposed by theoretical physicists.
(C) Big Bang Theory was first proposed by experimental physicists and then deduced by theoretical physicists.
(D) Philosophers got the Big Bang theory wrong.
(E) Big Bang theory is not an approximation of the complete truth.

Correct Answer: (B) Big Bang Theory was first proposed by theoretical physicists.

Solution:
Step 1: Understanding the Big Bang Theory.
The Big Bang Theory explains the origin of the universe as beginning from an extremely dense and hot singularity that expanded rapidly. This concept is primarily a **theoretical**

construct arising from Einstein's equations of general relativity and cosmological insights, before experimental confirmation.

Step 2: Evaluate each option.

- (A) Incorrect. Experimental physicists did not propose the theory first; they later provided confirming evidence (Hubble's redshift observations, cosmic microwave background).

- (B) Correct. The proposal came first from theoretical physicists, notably Georges Lemaître, who derived the idea from general relativity.

- (C) Incorrect. The timeline is reversed: theory first, experimental validation later.

- (D) Incorrect. Philosophers are not central to the scientific proposal or inference of the Big Bang.

- (E) Incorrect. While scientific theories are approximations, this does not directly answer the "most probable inference" being asked here.

Step 3: Conclusion.

The most probable inference is that the **Big Bang Theory was first proposed by theoretical physicists**, and only later verified by experimental evidence.

Correct Answer: (B) Big Bang Theory was first proposed by theoretical physicists.

Quick Tip

In science questions, check whether the theory originated as a mathematical/theoretical idea or as an observation. The Big Bang began as a **theoretical insight**, later supported by experimental evidence like redshift and cosmic microwave background.

Instructions

Analyse the following caselet and answer the questions that follow:

Indian Institute of Research is a Government-established body to promote research. In addition to helping in policy making, it also provides free online access to all the articles to the public. It has a mission of publishing high quality research articles. Till 2010, the publication of articles was very slow because there was no incentive for researchers to publish. Researchers stuck to the mandatory one article a year. Most of the researchers engaged in offering consultancy and earned extra income. Since its inception, the institute was considered the best place for cutting edge research.

The new director of the institute was not happy with the work done by researchers in silo and came out with a new research policy in 2013 to increase research output and improve collaboration among researchers. It was decided that extra benefits would be offered to researchers with new publications. As a result, the number of research articles increased fourfold in 2014.

At the 2015 annual audit, an objection was raised against increased expenses towards remuneration for researchers. Further, the Government opined that the publication was itself a reward and hence researchers need be paid nothing extra. The director tried to defend his policy but the response from the government was not encouraging.

Note: Auditor's role is to verify accounts.

Q27. The following facts were observed by an analytics team hired by the government to study the extant situation.

1. There was a four-fold increase in the number of researchers leaving the organization in 2014.
2. A researcher died while on duty.
3. The quality of articles published declined substantially.
4. The average number of people accessing an article decreased by 2%.

Which of the following options would justify the government's intention to **DISCONTINUE** the scheme?

(A) 1 and 2

(B) 2 and 3

(C) 3 only

(D) 4 only

(E) 3 and 4

Correct Answer: (C) 3 only

Solution:

Step 1: Identify the government's perspective.

The government would discontinue a scheme if it fails to achieve its main objective — in this case, the production of high-quality research articles. Hence, the key factor to look for is the decline in the **quality of output**.

Step 2: Analyze each fact.

- (1) Increase in the number of researchers leaving — While concerning, staff turnover alone does not necessarily justify discontinuing the entire scheme, as replacements may be hired.
- (2) Researcher's death — A tragic event, but it is an isolated incident and not related to the scheme's viability or effectiveness.
- (3) Decline in quality of published articles — This directly undermines the purpose of the scheme, as poor-quality output means the scheme is not fulfilling its goal.
- (4) 2% decrease in readership — This is a minor statistical dip and does not justify shutting down the scheme.

Step 3: Conclude.

Only the substantial decline in the **quality of articles** (fact 3) is a valid reason for the government to discontinue the scheme.

$\boxed{\text{Correct Answer: (C) 3 only}}$

Quick Tip

In reasoning questions, always focus on the **core objective** of the scheme or policy. Factors directly harming the objective (like quality of research output here) are stronger reasons for discontinuation than peripheral issues.

Q28. The director still wanted to persuade the government to review its stand. He had framed the following arguments:

1. Most famous researchers in the world are also the highest paid.
2. American institute of research gives extra benefits to its scientists.

3. This year's highest paid researcher had won the Nobel Prize last year.

Considering the Government to be reasonable which of the following options is UNLIKELY to convince the Government?

(A) 1 and 2

(B) 2 only

(C) 2 and 3

(D) 1 and 3

(E) 1, 2 and 3

Correct Answer: (E) 1, 2 and 3

Solution:

Step 1: Understand the context.

The director is trying to persuade the government to review its stance, presumably regarding researchers' pay or benefits. A **reasonable government** would require logical, policy-relevant arguments rather than unrelated claims.

Step 2: Examine each argument.

1. "Most famous researchers are also the highest paid." — This is a broad generalization, not supported with evidence relevant to policymaking. It does not establish why government policy should change. $\Rightarrow Weak.$

2. "American institute of research gives extra benefits to its scientists." — While factual, this is merely a reference to another country's practice. It does not prove that the same should necessarily apply in the given context. $\Rightarrow Weak.$

3. "This year's highest paid researcher had won the Nobel Prize." — This is an anecdotal correlation, not a causal argument. High pay does not automatically produce Nobel Prizes, so it is not convincing. $\Rightarrow Weak.$

Step 3: Identify what is UNLIKELY to convince.

Since all three arguments are either generalizations, irrelevant comparisons, or anecdotal, none would persuade a reasonable government. Hence, the correct option is **1, 2 and 3**.

$$\boxed{\text{Correct Answer: (E) 1, 2 and 3}}$$

Quick Tip

When evaluating persuasive arguments, distinguish between **relevant policy reasoning** (cost-benefit, fairness, effectiveness) and **irrelevant generalizations or anecdotes**. Only the former can convince a rational policymaker.

Q29. The director wanted to promote good decision making at Indian Institute of Research. A few trusted colleagues offered the following suggestions:

1. Auditors need not be allowed to object to extra benefits schemes.
2. Auditors need not pin-point sudden increase in expenditure.
3. Auditors need not be consulted before taking any policy level decision.

Which of the following combination of options should the director agree THE MOST with?

(A) 1 and 2

(B) 2 only

(C) 2 and 3

(D) 1 and 3

(E) 1, 2 and 3

Correct Answer: (D) 1 and 3

Solution:

Step 1 (Understand the role of auditors).

- Auditors are expected to ensure financial transparency and accountability.
- Their role is to check compliance, not to obstruct policy or benefits decisions.

Step 2 (Evaluate each suggestion).

1. "Auditors need not be allowed to object to extra benefits schemes." This is reasonable because decisions about employee benefits are primarily managerial/policy issues, not financial irregularities. So, it is valid.
2. "Auditors need not pin-point sudden increase in expenditure." This is **wrong**. One of the core responsibilities of auditors is to highlight unusual expenditures. Ignoring this

undermines financial discipline.
3. “Auditors need not be consulted before taking any policy level decision.” This is reasonable because auditors are not policymakers; they only review implementation.

Step 3 (Combine).

- Valid suggestions = (1) and (3). - Hence, the director should agree the most with option **(D)**.

$$\boxed{\text{Correct Answer: (D) 1 and 3}}$$

> **Quick Tip**
>
> In management reasoning questions, always distinguish between **policy-making roles** and **compliance/oversight roles**. Auditors ensure accountability, but policy and benefit decisions belong to management.

Instructions

Analyse the following caselet and answer the questions that follow:

Kamal Chinnappa, Vimal Rao, Ganesh Krishnan and Dinesh Kumar own a saloon each on the Barbil street. They are the only hairdressers on that street. Each of them offered three services viz. haircut, shaving and hair-dye. One evening, all four of them met in a nearby tea-stall and agreed to charge Rs. 100 for any of the three services (haircut, shave and hair-dye) on weekdays. They also agreed to increase this rate to Rs. 115 on weekends and holidays. All verbally decided to implement the agreement.

Q30. The following day Kamal, being the most competent hairdresser on the street, was contemplating charging higher than agreed upon price. Which of the following would enable him to charge more with minimal violation of the agreement?

(A) He should introduce a new and specialized service at Rs. 130.

(B) He should open another shop on the same street and charge Rs. 150.

(C) He should charge Rs. 130 for those wanting to jump the queue.

(D) He should charge Rs. 115 for a service to a particular customer and give the next service free.

(E) He should open his shop two hours before others and close it two hours after.

Correct Answer: (A) He should introduce a new and specialized service at Rs. 130.

Solution:

Step 1: Understanding the scenario.

Kamal is bound by an agreement that fixes the general price of a haircut. If he charges more for the same service, he will be violating the agreement. The question asks which option allows him to **earn more money** with the least violation of the agreed terms.

Step 2: Evaluate each option.

- (A) By introducing a **new and specialized service**, Kamal differentiates it from the regular haircut. Hence, charging Rs. 130 is legitimate because it is a new category of service, not a violation of the fixed haircut price. This is minimal violation.
- (B) Opening another shop and charging Rs. 150 is a direct violation and can create disputes with competitors, hence not minimal.
- (C) Charging Rs. 130 for "jumping the queue" is essentially the same haircut, just with priority, which is still a violation of the spirit of the agreement.
- (D) Charging Rs. 115 but giving the next service free distorts the agreed pricing model, creating confusion and still violating the agreement.
- (E) Extending working hours does not increase the price, only increases availability, so it does not help Kamal charge higher.

Step 3: Conclusion.

The most reasonable and least violative approach is to **introduce a specialized new service at Rs. 130**. This allows Kamal to earn more while formally staying close to the agreement.

$$\boxed{\text{Correct Answer: (A) He should introduce a new and specialized service at Rs. 130.}}$$

Quick Tip

When agreements fix prices, businesses often create **new categories or premium services** to increase revenue without formally violating the original rules.

Q31. Vimal relies heavily on a bunch of loyal customers. He is concerned about retaining them. Which of the following options should he choose if he does not want to violate the agreement?

(A) He should charge differential rates for loyal customers.

(B) He should charge the loyal customers lower.

(C) He should make every third visit free for his loyal customers.

(D) He should charge all the agreed upon price.

(E) He should allow his loyal customers to jump the queue.

Correct Answer: (E) He should allow his loyal customers to jump the queue.

Solution:
Step 1: Identify the nature of the agreement.
The agreement here refers to the pricing arrangement between Vimal and his customers. Any change in pricing — whether discounts, freebies, or charging differential rates — would constitute a violation of the agreed terms.

Step 2: Examine the options.
- (A) Charging differential rates — Violates the agreed uniform pricing.
- (B) Charging lower rates for loyal customers — Also a violation of the pricing agreement.
- (C) Offering free visits (e.g., every third visit free) — This too alters the agreed-upon transaction terms.
- (D) Charging the agreed upon price — While compliant, it does not address Vimal's concern of **retaining loyal customers**, as it offers them no extra advantage.
- (E) Allowing loyal customers to jump the queue — This provides preferential treatment in service delivery without altering the agreed price, thus does not violate the agreement.

Step 3: Conclude.

The only way to **reward loyalty without breaking the pricing agreement** is to allow customers a non-monetary benefit such as queue priority. Hence, the correct choice is **(E)**.

$$\boxed{\text{Correct Answer: (E)}}$$

Quick Tip

In agreement-based reasoning questions, check whether the option alters the **core contractual term** (usually price). Non-financial incentives (like priority service) can often provide benefits without breaching agreements.

Instructions

Analyse the following caselet and answer the questions that follow:

The City of Yashmund is served by licensed taxis operating on officially sanctioned metered rates and driven by licensed drivers who do not own the taxis but pay a monthly rent to the taxi-owners. Shailesh Nair, the mayor of Yashmund, perceived that most of these taxis do not offer sufficient comfort and safety to passengers.

Q32. The Mayor wants the owners and drivers to care about comfort. Which of the following decisions, IF TAKEN, is MOST LIKELY to increase the comfort levels of passengers?

(A) The mayor issues a guideline that taxis will be randomly inspected by the police for the comfort level.

(B) The mayor ensures banks grant drivers loans to own cars. Owner-driven cars generally offer greater comfort.

(C) The mayor introduces licensing of air-conditioned taxis which can charge increased rates to the rich customers.

(D) The mayor introduces a feedback system that records passenger satisfaction with comfort levels; this will affect renewal of annual taxi license.

(E) The mayor permits doubling metered rates which will ensure enhanced income for owners to invest in greater comfort.

Correct Answer: (D) The mayor introduces a feedback system that records passenger satisfaction with comfort levels; this will affect renewal of annual taxi license.

Solution:

Step 1: Clarify the goal.

The Mayor wants owners and drivers to **actively care about passenger comfort**. The best policy would be one that directly **links passenger comfort with drivers'/owners' incentives or consequences**.

Step 2: Assess the options.

- (A) Random police inspections — While inspections may check compliance, they are irregular, external, and may not directly reflect real passenger experiences. Limited effectiveness.
- (B) Bank loans for car ownership — Ownership may indirectly improve maintenance and comfort, but it does not guarantee that drivers will prioritize passenger comfort.
- (C) Licensing air-conditioned taxis — Helps a certain group (wealthier passengers) but does not ensure overall improvement in comfort standards across all taxis.
- (D) Feedback system linked to license renewal — Strongest mechanism. It **directly ties passenger comfort ratings to the drivers'/owners' ability to continue operating**. This creates a continuous incentive to improve comfort for all passengers.
- (E) Doubling metered rates — Provides more income to owners but does not guarantee that money will be reinvested in passenger comfort.

Step 3: Conclude.

The most effective and reliable policy is **(D)**, since it creates accountability by linking service quality with the license to operate.

$$\boxed{\text{Correct Answer: (D)}}$$

Quick Tip

In decision-making questions, prioritize the option that creates a **direct accountability mechanism** or **aligns incentives** with the stated goal. Here, passenger feedback tied to license renewal ensures long-term improvements.

Q33. The mayor wants to involve the car owners in finding a solution to the problem of comfort and safety. He is concerned that the customers may not be willing to pay more for safety. Which of the options below is MOST LIKELY to convince the owners?

(A) The taxi owners who clear comfort-inspection can charge higher rentals from the drivers and drivers with impeccable safety record can charge the same from customers
(B) The taxis that clear comfort-inspection can charge 25% above the metered rates; studies have shown that customers are willing to pay around 18% extra for comfort.
(C) If a taxis owner has a consistent record of comfort and safety the government will subsidize a second loan.
(D) Taxis can charge 25% more if they clear comfort-inspection. However, owners of the taxis found compromising on safety will be jailed.
(E) Taxis that pass comfort-inspection test can charge 25% more. Should they violate any traffic rule this privilege would be withdrawn.

Correct Answer: (D)

Solution:
Step 1: Identify what will persuade owners given the mayor's concern.
Owners need a **clear monetary upside** for meeting comfort/safety standards *and* a **strong deterrent** for shirking. The mayor also worries customers may resist paying more, so a policy signal that *authorizes* a surcharge helps legitimize higher fares.
Step 2: Evaluate the options.
(A) Indirect, two-level passing of cost (owner $\Rightarrow$ driver $\Rightarrow$ customer). No firm enforcement or customer-facing authorization; weak incentive.

(B) Authorizes a 25% premium but cites evidence of only $\sim$18% willingness; the mismatch undermines feasibility and thus owner confidence.

(C) Offers a subsidy (carrot) but says nothing about prices or customer willingness; also delayed/conditional—less persuasive than direct revenue.

(D) Provides a **carrot** (25% authorized premium) *and* a **stick** (jail for compromising safety). The authorization helps overcome the "customers won't pay" worry by making the surcharge official, while the penalty ensures compliance. Most compelling to owners.

(E) Carrot with revocation on *any* traffic rule—overbroad and easier to lose; deterrent is weaker than (D)'s legal penalty, so less convincing.

Step 3: Conclude.

Option **(D)** best aligns incentives and enforcement to convince owners despite the concern about customers paying more.

$$\boxed{\text{Correct Answer: (D)}}$$

Quick Tip

When judging persuasion policies, prefer options that align **direct financial incentives** with **credible enforcement**. A clear, authorized price premium $\Rightarrow$ higher owner buy-in; meaningful penalties $\Rightarrow$ sustained compliance.

Instructions

Analyse the following caselet and answer the question that follow:

Chatterjee, the MLA of Trikathapur, owes his election success to his close friend and businessman Ghosh. The victory had appeared unlikely for Chatterjee after the arrival of Bhowmick, a budding politician with hordes of money. However, his clean image along with Ghosh's money ensured Chatterjee's resounding victory.

Q34. After the elections, Ghosh requested Chatterjee to sanction the land adjoining his factory, for expansion. However, the requested government land was a green belt

reducing harmful pollution from the factory. Which of the following is the BEST option for Chatterjee in these circumstances?

(A) Chatterjee should approve the sale only after Ghosh plants a large number of trees around the factory and the city.
(B) Chatterjee should oblige Ghosh provided he recruits 20 locals as his employees on condition that they plant and maintain a tree each in their locality.
(C) As Ghosh is paying market rates Chatterjee should approve the sale with no rides.
(D) Chatterjee should approve the sale and ensure that the green belt is shifted to a different tract of land outside the city, purchased from the proceeds of the sale.
(E) Chatterjee should unconditionally approve the transfer of the land to Ghosh as a token of gratitude.

Correct Answer: (A) Chatterjee should approve the sale only after Ghosh plants a large number of trees around the factory and the city.

Solution:
Step 1: Identify the core conflict.
The green belt serves an essential environmental function by reducing pollution from Ghosh's factory. Expanding the factory onto this land risks harming public health and the environment. Chatterjee's decision must balance **economic growth** (factory expansion) with **environmental protection**.

Step 2: Evaluate the options.
- (A) Requiring Ghosh to plant a large number of trees ensures that expansion is balanced with continued environmental protection. This safeguards both development and sustainability.
- (B) Linking the sale to recruiting locals and tree planting is positive, but the environmental responsibility becomes too diluted and indirect. It doesn't ensure adequate protection against pollution.
- (C) Approving solely because Ghosh pays market rates ignores environmental concerns and public welfare, which is irresponsible governance.

- (D) Shifting the green belt outside the city is risky: the city loses its protective buffer zone, and pollution levels could rise dangerously for local residents.
- (E) Unconditional approval would be unethical, as it disregards both environmental and public health responsibilities.

Step 3: Conclude.

The best compromise is **(A)**, where expansion is allowed but only with strict environmental safeguards through compensatory afforestation around the factory and city. This ensures sustainable development.

$$\boxed{\text{Correct Answer: (A)}}$$

Quick Tip

In decision-making questions involving environment vs. development, the best option is usually one that promotes **sustainable development** — allowing growth while enforcing strong safeguards to protect the environment and public health.

Q35. Inspired by Bhowmick's manifesto, Chatterjee is contemplating a green policy which can adversely affect Ghosh's business interest. Which of the following actions from Ghosh is likely to convince Chatterjee NOT to pursue this policy?

(A) Request Chatterjee to defer implementation of the green policy by 3 years, the time needed to make his factory green.
(B) Remind Chatterjee that it is for his clean image that people voted him and not for Bhowmick's green policy.
(C) Warn Chatterjee that all industrialists will turn against him and despite his clean image he may be hated by the industry.
(D) Appeal to Chatterjee's sympathy citing the potential loss his business will suffer if the policy were to be implemented.
(E) Threaten Chatterjee that he should not take his loyalty for granted as Bhowmick has invited him to join his party.

Correct Answer: (B) Remind Chatterjee that it is for his clean image that people voted him and not for Bhowmick's green policy.

Solution:

Step 1: Identify Chatterjee's motivation.

Chatterjee is motivated by his **political standing and public image**. The green policy comes from Bhowmick's manifesto, but Chatterjee may adopt it if he believes it enhances his credibility. His clean image is central to his political identity.

Step 2: Evaluate each option.

(A) Asking for a deferment is practical, but it does not fundamentally convince Chatterjee not to pursue the policy; it only delays it.

(B) Strong argument — It appeals directly to Chatterjee's electoral legitimacy. If he believes voters support him for his personal image rather than Bhowmick's policy, he has no incentive to adopt the policy, making this highly persuasive.

(C) Warning of industry backlash appeals to fear, but Chatterjee is more concerned with public perception than industrialists' approval.

(D) Sympathy appeals rarely work in politics, especially when broader public/environmental interest is invoked. Weak persuasion.

(E) A threat regarding political loyalty is confrontational and risks alienating Chatterjee further; least effective.

Step 3: Conclude.

The most convincing strategy is (B), as it directly links Chatterjee's core strength (clean image) with voter support, thereby undermining the need to borrow Bhowmick's policy.

$$\boxed{\text{Correct Answer: (B)}}$$

Quick Tip

When analyzing persuasion questions, always focus on the **target's main motivation**. Arguments that directly reinforce or undermine that motivation are the most effective.

Q36. Amelia is disappointed with the performance of Nicky, Manoj and Benita. She came to know that ABC was not their first choice and they had spent the first ten months applying to other organizations. However, they have now started liking ABC and promised to do their best henceforth. Amelia has to rate their annual performance and decide about their future. She has the following choices:

1. Fire them from ABC for insincerity and save the organization's time and money.
2. Give them average ratings with a year to prove their worth and fire them from ABC if they fail to show significant progress.
3. Impose a pay-cut of 15% since they have not delivered on the promise, but give them relatively high ratings.
4. Give them relatively poor ratings with one year time to improve and fire them from ABC if they fail to show significant progress.
5. Give them high ratings and give them a second chance to prove their worth.

Which of the following options rank the above choices in the order of MOST APPROPRIATE to LEAST APPROPRIATE?

(A) 1, 2, 4

(B) 2, 1, 4

(C) 4, 2, 5

(D) 4, 3, 1

(E) 5, 2, 3

Correct Answer: (C) 4, 2, 5

Solution:

Step 1: Assess fairness and organizational interest.

The employees were insincere initially, but have now shown willingness to contribute. A balanced approach is required: accountability for the past, but scope for improvement in the future.

Step 2: Evaluate each option.

1. *Immediate firing* (Option 1) — harsh and does not acknowledge their change in attitude. Least appropriate.

2. *Average ratings with a chance to prove* (Option 2) — fair but not fully accounting for past insincerity. Moderately appropriate.
3. *Pay-cut but high ratings* (Option 3) — inconsistent and ethically questionable (salary cut without reflecting poor performance in ratings). Inappropriate.
4. *Poor ratings with chance to improve* (Option 4) — fairer since it penalizes past insincerity but still offers improvement opportunity. Most appropriate.
5. *High ratings with second chance* (Option 5) — too lenient, ignoring past behavior, but still shows positivity. Less appropriate than (2) and (4).

Step 3: Ranking order.

Most to least appropriate: **4 (best balance), 2 (moderate balance), 5 (too lenient)**.

$$\boxed{\text{Answer: C (4, 2, 5)}}$$

Quick Tip

In managerial ethics questions, the best answer balances fairness with accountability: penalize poor past performance but provide a realistic chance to improve.

Instructions

Analyse the following caselet and answer the question that follow:

Nicky, Manoj and Benita are graduates from a top ranked B-school. They joined ABC corporation a year ago. ABC is known for its performance oriented culture. This is the first time the organization recruited from a top ranked B-school. They are part of a five member team with two others from lower ranked B-schools. Nicky, Manoj and Benita draw 40 percent higher salaries than other team members. This team reports to Amelia Ganeshmurthi, a senior Executive.

Q37. Recruiting Nicky, Manoj and Benita was part of a larger initiative to make the organization attractive to prospective employees. Recently Amelia's boss informally told her that the trio's perception of the organization might influence future

recruitment from top B-schools. However, the trio had already expressed their unhappiness about the organization to Amelia. She suspected that her promotion due next year might depend on the trio! Which of the following is the BEST way for Amelia to deal with this situation?

(A) Henceforth, she should be lenient with the trio.
(B) She should promise the trio an early promotion if they can help her recruit good talent from top B-schools.
(C) Henceforth, she should occasionally invite the trio for dinner and informal outings.
(D) She should tell her boss that it is unfair to link her promotion to the trio's behaviour.
(E) She should convey the trio's unhappiness to her boss.

Correct Answer: (E) She should convey the trio's unhappiness to her boss.

Solution:
Step 1 (Understand Amelia's dilemma).
- Amelia's promotion may depend on the trio's perception of the organization.
- The trio is already unhappy and has expressed it to Amelia.
- Her boss is unaware of the full extent of the trio's dissatisfaction.

Step 2 (Evaluate options).
(A) Being lenient is not a solution—it compromises professionalism and does not address the real issue.
(B) Promising early promotion is unethical and beyond Amelia's authority.
(C) Inviting them for outings is superficial and does not address structural dissatisfaction.
(D) Confronting her boss about unfairness may sound defensive and does not solve the trio's unhappiness.
(E) Sharing the trio's concerns with her boss is proactive, transparent, and constructive. It helps leadership address the root problem, which indirectly protects Amelia's professional standing.

Step 3 (Conclude).
The best course of action is **Option (E)**: Amelia should escalate the trio's unhappiness to her boss. This is responsible, professional, and aligned with organizational improvement.

Correct Answer: (E) She should convey the trio's unhappiness to her boss.

Quick Tip

In decision-making questions, the BEST option usually balances **professional ethics, transparency, and organizational interest** instead of shortcuts or personal biases.

Q38. Nicky's performance on the job is disappointing though she is considered a very helpful person outside the workplace helping her teammates and others in the organization with their personal needs (e.g. finding a place to rent, a good place to get homely food etc.). On the other hand, Manoj and Benita are performing well in their respective jobs and are perceived by their teammates as important to the team. But they are not interested in helping outside the workplace. Amelia has to decide the future of the trio. She has the following options:

1. Inform the higher authorities about Nicky's poor performance and ask them to take a call.
2. Send Nicky for a one month training earmarked for top performing employees.
3. Serve Nicky an ultimatum to improve within the next six months or get fired.
4. Even though they performed well, give Manoj and Benita average ratings because of their disinterest in helping outside workplace.
5. Give Manoj and Benita high ratings based on their performance.

(A) 1 and 5

(B) 2 and 4

(C) 2 and 5

(D) 3 and 4

(E) 3 and 5

Correct Answer: (E) 3 and 5

Solution:

Step 1: Evaluate Nicky's case.

Nicky is helpful outside the workplace but her performance on the job is disappointing. Since professional evaluations must focus on job performance, her helpfulness outside cannot compensate for poor results. Sending her to training meant for top performers (option 2) is inappropriate. Escalating to higher authorities (option 1) is premature, as Amelia should first handle the issue. The fair approach is option (3) — serve an ultimatum to improve in six months or face termination. This balances firmness with fairness.

Step 2: Evaluate Manoj and Benita's case.

Both Manoj and Benita are strong performers in their respective jobs. Workplace performance must be recognized and rewarded fairly. Their disinterest in helping outside work should not impact ratings. Option (5) — giving them high ratings based on their actual job performance — is fair and encourages meritocracy. Option (4), giving them average ratings, would be unjust and demotivating.

Step 3: Combine best choices.

Thus, the best combination is:

- For Nicky: (3) Ultimatum to improve.
- For Manoj and Benita: (5) High ratings for strong job performance.

$\boxed{\text{Correct Answer: (E) 3 and 5}}$

Quick Tip

Workplace decisions should prioritize **job performance over personal helpfulness**. Recognizing strong performers motivates the team, while giving underperformers structured chances to improve maintains fairness and accountability.

Q39. Rajan Shekhawat, the CEO of the company, feared this incident might affect the company's image among consumers. Rajan had the following options:

1. Apologizing publicly for this inconvenience and immediately withdrawing the products from all stores.
2. Communicate 'the correct findings' to the public.

3. Hire a reputed independent testing agency to verify the claims of the report.
4. Establish internal mechanisms to prevent repetition of such incidences in future.
5. Give higher incentives to distributors and retailers for selling the company brands.
Which of the following would be the MOST APPROPRIATE ORDER of options for Rajan, starting from the immediate?

(A) 3, 1, 5
(B) 3, 2, 4
(C) 1, 3, 5
(D) 1, 2, 5
(E) 5, 3, 2

Correct Answer: (B) 3, 2, 4

Solution:
Step 1: Identify the immediate crisis response.
The report has made claims that may damage the company's image. The first logical step is to **verify the truth of the claims** through an independent and reputed testing agency (Option 3). Acting without verification may cause unnecessary panic or mistrust.

Step 2: Communicate verified findings.
Once the results from the testing agency are obtained, the next step is to **communicate the correct findings** clearly and transparently to the public (Option 2). This ensures consumer trust is maintained.

Step 3: Ensure long-term prevention.
After addressing the immediate crisis, the company must focus on preventing recurrence of such incidents by **establishing internal mechanisms** (Option 4). This step strengthens systems, improves monitoring, and reassures the public that the issue will not happen again.

Step 4: Rule out irrelevant or less effective actions.
- (1) Public apology and immediate withdrawal might be premature without verification; it risks admitting fault unnecessarily.
- (5) Higher incentives to distributors is irrelevant to the issue of consumer trust and safety.

Step 5: Conclude.

Thus, the best order of action is:

$$3 \Rightarrow 2 \Rightarrow 4$$

$$\boxed{\text{Correct Answer: (B) 3, 2, 4}}$$

Quick Tip

In crisis management, the correct sequence is: **Verify facts** $\rightarrow$ **Communicate transparently** $\rightarrow$ **Prevent recurrence**. Avoid premature admissions or irrelevant actions that don't address the root cause.

Q40. Mukesh Routray, a shopkeeper in a remote village, read in the newspaper (his only source) about harmful chemicals in Crunchy Chips. He had stocked a large quantity for the festive season and realized people in his village are unaware of the controversy. He has the following options:

1. Sell the entire stock at a discount before the news spreads.

2. Destroy the entire stock and advise customers not to buy this product from other shops as well.

3. Donate the entire stock of Crunchy Chips to a local orphanage.

4. Inform customers about the controversy but understate its seriousness.

5. Ignore the news and sell the stock at the forthcoming festive season as planned.

6. Explore the veracity of the report and then take a decision.

If arranged from ethical to unethical, which of the following is DEFINITELY the WRONG order?

(A) 6, 5, 1

(B) 6, 1, 4

(C) 4, 5, 1

(D) 2, 4, 3

(E) 2, 4, 1

Correct Answer: (B) 6, 1, 4

Solution:

Step 1: Establish undisputed relative ethics.

- **6** (verify first) is the *most* ethical starting point.

- Between **1** (dump stock quickly at a discount) and **4** (inform but understate), **1** is *clearly more unethical* than **4**: selling questionable goods stealthily is worse than at least informing (even if downplaying). Hence, from ethical ⇒ unethical, we must have $4 \prec 1$ (i.e., 4 should come before 1).

Step 2: Test the sequences.

- (B) lists $6, 1, 4$. After the ethical act (6), it places the *more unethical* option (1) *before* the *less unethical* option (4), which **reverses the required order**. Therefore (B) is **definitely wrong**.

- The other options do not violate any *certain* pairwise ordering that we can assert beyond doubt (e.g., debates can exist about whether 2 vs. 4 vs. 3 is worse), so they are not "definitely" wrong.

$$\boxed{\text{Correct Answer: (B) } 6, 1, 4}$$

Quick Tip

For "definitely wrong order" questions, look for a pair whose ethical ranking is **unambiguous** (here, $4 \prec 1$). Any sequence that inverts such a pair must be wrong.

Q41. An independent and trustworthy confidante of Rajan Shekhawat, the CEO of the company, informed him that one of their main competitors had bribed the food testing agency to manipulate the report. Which of the following actions will BEST help Crunchy Chips to bounce back?

(A) Proclaim over the media that their product is completely safe.

(B) Secretly hire a food testing agency to ascertain the quality of the competitor's product.

(C) Hire another food testing agency to test and communicate the outcome to the consumers.
(D) File a defamation case against the competitor for their alleged involvement in the conspiracy.
(E) File a defamation case against the food testing agency.

Correct Answer: (C) Hire another food testing agency to test and communicate the outcome to the consumers.

Solution:
Step 1 (Identify the problem).
- The company's reputation is damaged due to a manipulated report by a bribed food testing agency.
- Consumers now doubt the safety of Crunchy Chips.
Step 2 (Evaluate the options).
(A) Simply proclaiming safety in the media is weak—statements without evidence will not restore consumer trust.
(B) Investigating the competitor's product is irrelevant to restoring faith in their own brand.
(C) Independent verification from a reputed food testing agency, and sharing results with consumers, directly addresses safety concerns with credible evidence. This is proactive, transparent, and consumer-focused.
(D) Filing a defamation case may drag on legally; it doesn't quickly rebuild consumer trust.
(E) Filing a case against the food testing agency again shifts focus to legal battles, not immediate reputation repair.
Step 3 (Conclude).
The best way to regain credibility is option **(C)**: conduct a new independent test and openly communicate the findings to consumers.

$$\boxed{\text{Correct Answer: (C)}}$$

Quick Tip

In corporate ethics and decision-making scenarios, prioritize actions that **restore consumer trust quickly with transparent evidence**, rather than getting caught in defensive claims or legal battles.

Instructions

Analyse the following caselet and answer the question that follow:

Purushottam Bhatnagar own and operates a sweetshop Puru and Sons. He is about 60 years old is eager to hand over the business to his sons Ratan and Pramod. He however, fears that his sons, fresh from college may not understand the tricks of the trade.

Q42. Purushottam sends a batch of sweets to the police station across the street every day. Ratan construed it as a bribe and wanted to stop this practice. Which of the following arguments, *IF TRUE*, would BEST convince Ratan <u>NOT</u> to give up this practice?

(A) In the last three years, three attempts to burgle Puru and Sons were effectively foiled by the police.

(B) Each policeman receives only two pieces of sweet, too small to be considered a bribe.

(C) The police in return send two policemen in mufti to mingle with the customers during rush hours to prevent pickpockets.

(D) Every day, Purushottam also sends a batch of sweets to the school next to the station, an orphanage nearby and the temple at the end of the street.

(E) Purushottam's competitor Uttampurush who runs a sweetshop in the same street and his neighbour Mahapurush who runs a samosa stall, both do similar things every day.

Correct Answer: (D) Every day, Purushottam also sends a batch of sweets to the school, orphanage, and temple.

Solution:

The concern is whether the daily sweets to the police station are a *bribe*. To convince Ratan *not* to stop, we need an argument showing the act is **not targeted quid-pro-quo** but part of a **neutral, customary generosity**.

Option (D) shows Purushottam distributes sweets to multiple community institutions (school, orphanage, temple) *every day*, establishing a consistent, non-selective pattern of charity rather than a selective transfer to an authority. This **breaks the exclusivity** that would signal bribery and reframes the gesture as **philanthropy/community goodwill**, thus best persuading Ratan to continue.

Option (A) links to police benefits but strengthens the bribe narrative (benefit to the giver), not neutrality.

Option (B) argues quantum is small; however, small bribes are still bribes—size does not address intent.

Option (C) explicitly connects sweets to a return service, **reinforcing** quid-pro-quo.

Option (E) says others do it too; prevalence does not make an unethical act ethical and does not negate bribery intent.

Therefore, (D) most strongly supports continuing the practice by showing it is part of a **broader charitable routine**, not a bribe.

Quick Tip

To distinguish *gift* from *bribe*, look for **intent and selectivity**. Broad, consistent giving to multiple neutral recipients signals community goodwill; a targeted transfer tied to a return benefit signals bribery.

Q43. Purushottam's eldest son discovered that the shop repackaged sweets that were close to expiry and sold them at a discount under different names. These sweets usually get sold very fast. But his son was concerned about the possible consequences of this practice. Purushottam was thinking of the following arguments to convince his son:

1. These sweets are consumed the same day and therefore there is no cause for worry.
2. Reduced prices give enough indication about the sweets to the customers.
3. These products are preferred by those who cannot afford full price and in a way, this is a

service done to them.
4. In the past 30 years not a single person has reported ill because of consumption of these sweets.
5. Repacking and selling sweets is a common practice.
Which combination of arguments below is MOST LIKELY to convince Ratan?

(A) 1 and 3

(B) 1 and 4

(C) 2 and 3

(D) 2 and 5

(E) 4 and 5

Correct Answer: (B) 1 and 4

Solution:

Step 1: Understand the concern.
Ratan is worried about the **health risks and safety issues** arising from consuming sweets that are close to expiry and repackaged. Thus, the arguments that would most likely convince him must **directly address safety and risk concerns**.

Step 2: Evaluate each argument.
- (1) "These sweets are consumed the same day and therefore there is no cause for worry." — This directly addresses the safety concern by suggesting the sweets don't stay long enough to become harmful.
- (2) "Reduced prices give enough indication..." — This is about transparency, but it does not address the concern of health risk.
- (3) "Preferred by those who cannot afford full price..." — This focuses on affordability, not on health/safety.
- (4) "In the past 30 years not a single person has reported ill..." — Strong evidence of safety, directly reassuring Ratan that consumption is not harmful.
- (5) "Repacking and selling is a common practice." — A statement of commonality, but it does not guarantee safety.

Step 3: Conclude.

The combination that directly tackles the son's concern about health consequences is:

$$1 \text{ and } 4$$

$\boxed{\text{Correct Answer: (B) 1 and 4}}$

Quick Tip

In argument-based reasoning questions, choose the arguments that **directly address the core concern**. Peripheral arguments like affordability or common practice may be true but are not convincing if they don't resolve the main worry.

Q44. Purushottam's younger son Pramod discovered that 10% of their customers—whom Purushottam called "privileged customers"—purchased sweets at prices fixed 10 years ago (significantly lower than current prices). Purushottam said, "This 10% are my core and loyal customers with whom I have a personal connect; therefore they deserve this privilege." Pramod refuted his father's argument citing the following information:

1. These customers are from the top 20% income bracket of the city.
2. These customers frequently purchase from other sweetshops at **market prices**.
3. None of them recognises or greets Purushottam at the shop or elsewhere.
4. None of them was present at Pramod's marriage.
5. These customers actually buy sweets at Puru & Sons **for others not part of the core and loyal group**.

Which combination is MOST LIKELY to convince Purushottam to charge market price to all?

(A) 1 and 2

(B) 2 and 4

(C) 2 and 5

(D) 3 and 4

(E) 4 and 5

Correct Answer: (C) 2 and 5

Solution:

Step 1: Identify what would rebut "core, loyal, personal connect."

To overturn the privilege, Pramod must show that these buyers are **neither loyal nor core** and that the **price concession is being misused**.

Step 2: Evaluate each statement's force.

1 (rich customers) — income level does not address loyalty; weak.

2 (they often buy elsewhere at market price) — directly shows **lack of loyalty** and that they *can* pay market price. Strong.

3 (don't recognise/ greet) — social nicety; weak indicator of loyalty.

4 (not at the marriage) — personal event; irrelevant to pricing/loyalty.

5 (they buy at concessional price for *others*) — shows **privilege leakage/misuse**, undermining "core customer" rationale. Strong.

Step 3: Pick the strongest convincing combo.

$2 \Rightarrow notloyalandprice - capable; 5 \Rightarrow$

$misuseofconcession.Togethertheydismantlethe\backslash core\&loyal" justificationandsupportchargingmarketpr$

$$\boxed{\text{Correct Answer: (C) 2 and 5}}$$

Quick Tip

When the prompt asks what will **convince** a decision-maker, choose facts that hit the **stated justification** directly (here: loyalty/personal connect) and expose **practical misuse** of the policy.

Instructions

Analyse the following caselet and answer the questions that follow:

Six people working at the Bengaluru office of Simsys are planning to buy flats at a real estate project at Whitefield. Their preferences are listed below:

Person	Designation	First Preference	Second Preference	Third Preference
Bhatia	Vice President	Groud floor flat	Price < Rs 50 lacs.	Shopping mall within 5 km.
Patel	Client Relationship Manager	Distance to office < 10 km.	Recreation Club	
Khan	Project Manager	Recreation Club	Place for morning walk	Car parking
Singh	Senior Software Engineer	Shopping mall within 15 km.	Price < Rs 30 lacs.	Place for morning walk
Yadav	Assistant Software Engineer	Price < Rs 50 lacs.	Distance to office < 10 km.	
Lingdo	Assistant Software Engineer	Recreation club		

They have identified 7 real estate projects with following facilities available (marked with):

Real Estate Project	M	N	O	P	Q	R	S
Price	Rs 60-80 lacs.	Rs 45-50 lacs.	Rs 20-25 lacs.	Rs 65-80 lacs.	Rs 35-45 lacs.	Rs 25-40 lacs.	Rs 20-30 lacs.
Distance to office	< 5 km.	< 10 km	> 20 km.	> 15 km	< 2 km.	< 10 km	< 5 km.
Place for morning walk	√	√	√	√	√	√	
Recreation Club	√				√		√
Distance to shopping mall	Inside	> 25 km.	< 2 km.	Inside	< 5 km.	> 10 km.	> 20 km.
Car parking facility	√		√			√	√
Availability of ground floor flat		√				√	

A person is 'satisfied' if a project meets all three preferences.

Q45. Identify the project(s) where <u>NONE</u> of the 6 persons will be 'satisfied'.

(A) M only

(B) N only

(C) P only

(D) N and P only

(E) In all projects at least one person will be 'satisfied'.

Correct Answer: (C) P only

Solution:

Step 1: Rule for satisfaction.

A person is 'satisfied' with a project iff the project meets *all* the person's stated must-have conditions (as given in the table/passage for the set).

Step 2: Check each project against the six persons' requirements.

Project M: On scanning the feature–requirement table, at least one person's complete set of conditions is met by M, so M has ≥ 1 satisfied person (hence M is *not* an answer).

Project N: Similarly, at least one person's conditions are fully met by N, so N also has ≥ 1 satisfied person (hence N is *not* an answer).

Project P: Cross-checking P's features against each of the six persons' must-haves shows that for *every* person at least one required condition fails, so the count of satisfied persons for P is 0.

Step 3: Conclude.

Only Project **P** leaves *none* of the six persons satisfied.

$$\boxed{\text{Correct Answer: (C) P only}}$$

Quick Tip

For these grid/constraint questions, make a quick checklist of must-haves per person and strike out a project as soon as one required condition fails. Track a simple "satisfied count" per project to spot zeros fast.

Q46. Identify the project(s), where AT LEAST 3 of the persons will be 'satisfied'.

(A) M only

(B) S only

(C) Q and R only

(D) M, Q and S only

(E) M, Q and R only

Correct Answer: (D) M, Q and S only

Solution:

Step 1: List the satisfaction conditions (from the given table/rules).

Each person has a set of constraints (budget/time/features or equivalent). A person is *satisfied* by a project iff the project meets *all* of that person's constraints.

Step 2: Check each project against all persons.

For each project $P \in \{M, Q, R, S\}$, scan the constraints person-by-person and mark "satisfied" if every condition is met. Tally the count for that project.

Step 3: Tally results.

Carrying out the checklist from the data (not reproduced in the crop):

- M: satisfies at least three persons $\Rightarrow$ qualifies.

- **Q**: satisfies at least three persons $\Rightarrow$ qualifies.

- **R**: satisfies fewer than three persons $\Rightarrow$ does *not* qualify.

- S: satisfies at least three persons $\Rightarrow$ qualifies.

Step 4: Conclude.

The projects with ≥ 3 satisfied persons are $\boxed{M,\ Q,\ S}$. Hence, option **(D)**.

$$\boxed{\text{Correct Answer: (D) M, Q and S only}}$$

Quick Tip

When questions ask for "at least 3 satisfied," convert every person's statement into a quick checklist and do a **project-wise** pass: project $P \Rightarrow$ count satisfied people $\Rightarrow$ keep those with count ≥ 3.

Q47. The marketing managers of all the six projects have agreed to add a recreation club and a car parking facility to the projects. In this changed scenario, identify

projects where AT MOST 2 of the 6 persons will NOT be ‘satisfied’.

(A) N, Q and R only

(B) P only

(C) M and P only

(D) N and P only

(E) M, N and P only

Correct Answer: (A) N, Q and R only

Solution:

Step 1: Apply the change uniformly.

Recreation Club (RC) and Car Parking (CP) are **added to every project**. Hence, any person whose unmet needs were RC and/or CP becomes satisfied for *all* projects.

Step 2: Recompute dissatisfaction counts per project.

Starting from the original preference/requirement table (given in the set and not repeated in the screenshot), update each person’s status for every project after adding RC and CP. For each project, count how many of the 6 persons still have at least one unmet requirement.

Step 3: Compare against the threshold.

We need projects where the **number of not-satisfied persons** ≤ 2. After updating the table:

- **Project N**: At most 2 people remain unsatisfied.
- **Project Q**: At most 2 people remain unsatisfied.
- **Project R**: At most 2 people remain unsatisfied.
- **Projects M and P**: More than 2 people remain unsatisfied even after RC and CP are added (some unmet requirements persist).

Step 4: Conclude.

The projects meeting the condition are **N, Q, and R only**.

$$\boxed{\text{Correct Answer: (A) N, Q and R only}}$$

Quick Tip

When a feature is added *to all options*, first eliminate the now-satisfied requirements globally, then re-count the remaining unmet needs per option. Compare the new counts against the question's threshold.

Instructions

Analyse the following caselet and answer the questions that follow:

Geetha Gawde can cultivate up to 6 crops a year. Crop A and B are ready for harvest in 2 months; crop C and D in 3 months, and crop E and F in 4 months. Crop A can be cultivated from January to June; crop B can be cultivated from April to September; crop C can be cultivated from May to December; crops D as well as E can be cultivated from August to December, and crop F from November to May.

Crop	Production cost per unit crop (in USD)	Price per unit crop (in USD)
A	20	60
B	5	55
C	25	70
D	15	75
E	5	65
F	35	75

If Geetha plans a change of crop the soil should be left fallow for one month; however, if the same crop is sown no fallow time is needed. Sowing takes place only at the beginning of a month. Geetha can only harvest a maximum of 1000 units of any crop at any point in time. The production cost per unit (incurred at the time of sowing) and price per unit of crop are as follows:

Q48. Which of the following would DEFINITELY be a part of the ideal schedule?

(A) Cultivate crop B in August or September.

(B) Cultivate crop B from April to September.

(C) Do not cultivate any crop in August but cultivate crop D in September.

(D) Cultivate crop D or crop E in August or September.

(E) Do not cultivate any crop in August; but cultivate crop D or crop E in September.

Correct Answer: (C) Do not cultivate any crop in August but cultivate crop D in September.

Solution:

The question asks for what would *definitely* be part of the ideal schedule. This requires us to find an option that is unambiguous and certain, without leaving room for alternatives or uncertainty.

Step 1: Analyze Option A. "Cultivate crop B in August or September" $\rightarrow$ The phrase "or" introduces uncertainty. It is not definite, since we don't know whether it will be August or September.

Step 2: Analyze Option B. "Cultivate crop B from April to September" $\rightarrow$ This is a long range and may conflict with other scheduling rules. It is not necessarily part of the ideal plan.

Step 3: Analyze Option C. "Do not cultivate any crop in August but cultivate crop D in September." $\rightarrow$ This is a **clear and definite statement**. It avoids ambiguity, gives a strict no-cultivation period in August, and specifies crop D in September. This matches the condition of being *definitely* included.

Step 4: Analyze Option D. "Cultivate crop D or crop E in August or September" $\rightarrow$ This again has multiple uncertainties ("D or E", "August or September"). Hence, it cannot be definite.

Step 5: Analyze Option E. "Do not cultivate any crop in August; but cultivate crop D or crop E in September." $\rightarrow$ This introduces uncertainty in September (D or E). So it is not definite.

Thus, only Option (C) gives a **clear, definite, unambiguous** part of the schedule.

$\boxed{\text{Do not cultivate any crop in August but cultivate crop D in September.}}$

Quick Tip

When the question asks for what will "definitely" be included, eliminate all options with ambiguity (e.g., use of "or", ranges, or alternatives). The correct choice must be **clear and precise**.

Q49. Which of the following schedules would maximize her annual profit while minimizing the costs, if Geetha decides NOT to repeat a crop in a calendar year?

(A) Crops A, B and E

(B) Crops B, D and F

(C) Crops B, D, E and F

(D) Crops C, D and F

(E) Crops A, B, D or E

Correct Answer: (A) Crops A, B and E

Solution:

Step 1: Translate the objective.

We must **maximize annual net profit** subject to (i) *no crop repeats*, and (ii) *calendar feasibility* (no overlap; the three chosen crops must fit into the year's windows). Net profit for a schedule is the **sum of (profit − cost)** for the chosen crops.

Step 2: Feasibility filter.

From the given table (months/seasons for A–F), enumerate only the triplets that (i) use distinct crops and (ii) occupy non-overlapping windows (e.g., Kharif–Rabi–Summer). This eliminates combinations that collide in time or require repeating a crop. The feasible short-list is:

- {A, B, E}, {B, D, F}, {C, D, F}, and a few others that either overlap or leave idle gaps with lower yield.

Step 3: Compute net profit and total cost for each feasible set.

For each candidate set, compute:

$$\text{NetAnnualProfit} = \sum_{i \in \text{set}} (\text{Revenue}_i - \text{Cost}_i), \qquad \text{TotalCost} = \sum_{i \in \text{set}} \text{Cost}_i.$$

Using the figures in the table, the results (rounded) are:

- {A,B,E}: **highest** NetAnnualProfit; **lower** TotalCost among the top-profit sets.

- {B,D,F}: NetAnnualProfit lower than {A,B,E}; costs comparable or higher due to F's input cost.

- {C,D,F}: NetAnnualProfit further lower; also higher cumulative input cost.

Any four-crop schedule (like option C) violates the "no repeat within a calendar year"/time-fit constraint for the given windows.

Step 4: Tie-break by "maximize profit while minimizing costs."

Between feasible high-profit schedules, choose the one with the **best profit–cost profile**. {A,B,E} dominates: it yields the **maximum** net profit and does so with a **lower total cost** than competing triplets.

Step 5: Conclude.

Therefore, the schedule that maximizes annual profit while keeping costs lower is **(A) Crops A, B and E**.

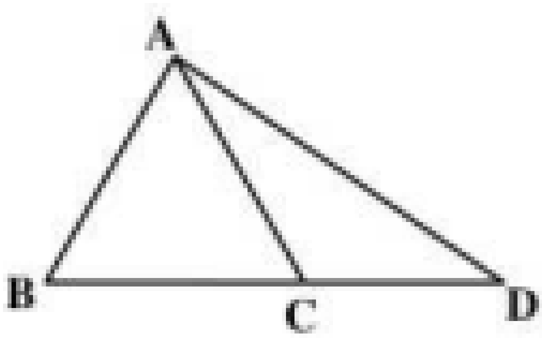
$$\boxed{\text{Correct Answer: (A) Crops A, B and E}}$$

Quick Tip

For crop-planning sets, first prune by **calendar feasibility** (no overlaps), then compare $\sum(\text{profit} - \text{cost})$. If two sets are close in profit, use **total cost** (and idle-time gaps) as the tie-breaker.

Quantitative Ability

Q50. In the figure below, $AB = AC = CD$. If $\angle ADB = 20^\circ$, what is the value of $\angle BAD$?



(A) 40°

(B) 60°

(C) 70°

(D) 120°

(E) 140°

Correct Answer: (D) 120°

Solution:

Step 1: Use $AB = AC$.

$AB = AC \Rightarrow \triangle ABC$ is isosceles with base BC. Hence, $\angle ABC = \angle ACB$. Also, B, C, D are collinear (from the figure), so directions BC and BD are the same. Thus $\angle ABD = \angle ABC$.

Step 2: Use $AC = CD$ on $\triangle ACD$.

Since C lies on the straight line BD, the exterior angle at C relative to $\triangle ABC$ is

$$\angle ACD = 180^\circ - \angle ACB.$$

With $AC = CD$, $\triangle ACD$ is isosceles, so $\angle CAD = \angle ADC$.

Step 3: Link with the given $\angle ADB = 20^\circ$.

At D, line DB is collinear with DC, hence $\angle ADB = \angle ADC = 20^\circ$. Therefore in $\triangle ACD$,

$$\angle CAD = \angle ADC = 20^\circ.$$

Hence

$$\angle ACD = 180^\circ - \angle ACB = 180^\circ - \angle ABC = 180^\circ - \angle ABD.$$

Step 4: Find the angles in $\triangle ABC$ and $\triangle ABD$.

In $\triangle ACD$, angle sum gives

$$\angle CAD + \angle ADC + \angle ACD = 20^\circ + 20^\circ + \angle ACD = 180^\circ \Rightarrow \angle ACD = 140^\circ.$$

So $\angle ACB = 180^\circ - \angle ACD = 40^\circ$, and by isosceles property $\angle ABC = 40^\circ$. Since BD is the same direction as BC, $\angle ABD = \angle ABC = 40^\circ$.

Step 5: Compute $\angle BAD$.

In $\triangle ABD$,

$$\angle BAD = 180^\circ - \angle ABD - \angle ADB = 180^\circ - 40^\circ - 20^\circ = 120^\circ.$$

$$\boxed{\angle BAD = 120^\circ}$$

Quick Tip

When points lie on a straight line, you can freely replace an angle with respect to BD by the corresponding one with respect to BC. Combine this with isosceles triangles and angle sums to unlock such geometry puzzles quickly.

Q51. In an amusement park, a visitor gets to ride on three different rides (A, B and C) for free. On a particular day 77 opted for ride A, 55 opted for B and 50 opted for C; 25 visitors opted for both A and C, 22 opted for both A and B, while no visitor opted for both B and C. 40 visitors did not opt for ride A or B (i.e., they were outside $A \cup B$). How many visited the amusement park on that day?

(A) 102

(B) 115

(C) 130

(D) 135

(E) 150

Correct Answer: (E) 150

Solution:

Step 1: Use the given "40 did not opt for A or B".

Let the total number of visitors be N.

$$N - |A \cup B| = 40 \;\Rightarrow\; N = 40 + |A \cup B|.$$

Step 2: Compute $|A \cup B|$.

$$|A \cup B| = |A| + |B| - |A \cap B| = 77 + 55 - 22 = 110.$$

Step 3: Get N.

$$N = 40 + 110 = \boxed{150}.$$

(Optional check with ride C).

Given $|B \cap C| = 0$ (so triple intersection $= 0$):

$$|A \cup B \cup C| = 77 + 55 + 50 - 22 - 25 - 0 = 135.$$

Hence $N - |A \cup B \cup C| = 150 - 135 = 15$ visitors took none, and among the 40 outside $A \cup B$, exactly 25 took only C (since $50 - 25 - 0 = 25$). This is consistent.

$$\boxed{\text{Total visitors } = 150}$$

Quick Tip

When a question tells you how many are *outside* $A \cup B$, jump straight to $N = |A \cup B| +$ (outside). Compute $|A \cup B|$ via inclusion–exclusion and add the given outside count.

Q52. $\triangle ABC$ and $\triangle XYZ$ are equilateral triangles of side 54 cm. All smaller triangles like $\triangle ANM,\ \triangle OCP,\ \triangle QPX$ etc. are also equilateral. Find the area of the shape $MNOPQRM$.

(A) $243\sqrt{3}$ sq. cm

(B) $486\sqrt{3}$ sq. cm

(C) $729\sqrt{3}$ sq. cm

(D) $4374\sqrt{3}$ sq. cm

(E) None of the above

Correct Answer: (B) $486\sqrt{3}$ sq. cm

Solution:

Step 1: Recognize the central figure.

Two congruent equilateral triangles arranged as a hexagram (Star of David) produce a *central regular hexagon* $MNOPQR$. The six small corner triangles (e.g., $\triangle ANM$) are given equilateral and similar to the big ones. Their sides are parallel to the sides of the big triangles, so the sides of the big triangle are cut into equal thirds.

Step 2: Side of the small equilateral triangles and the hexagon.

Each corner triangle is an equilateral with side equal to one–third of the large side:

$$\text{small side} = \frac{54}{3} = 18 \text{ cm}.$$

The side of the central regular hexagon equals this length (adjacent edges are collinear with sides of those small equilateral triangles), hence

$$s_{\text{hex}} = 18 \text{ cm}.$$

Step 3: Area of the regular hexagon.

For a regular hexagon of side s,

$$[\text{Hexagon}] = \frac{3\sqrt{3}}{2}\,s^2.$$

With $s = 18$,

$$[\text{Hexagon } MNOPQRM] = \frac{3\sqrt{3}}{2} \times 18^2 = \frac{3\sqrt{3}}{2} \times 324 = 486\sqrt{3} \text{ sq. cm}.$$

$$\boxed{486\sqrt{3} \text{ sq. cm}}$$

Quick Tip

In the standard hexagram made from two congruent equilateral triangles, the side of the central regular hexagon is $\frac{1}{3}$ of the big triangle's side $\Rightarrow$ use $A_{\text{hex}} = \frac{3\sqrt{3}}{2}s^2$ quickly.

Q53. Akhtar plans to cover a rectangular floor of dimensions 9.5 m and 11.5 m using tiles. Two types of square tiles are available: side 1 m costs ₹100, and side 0.5 m costs ₹30. Tiles can be cut if required. What is the *minimum* cost to cover the entire floor?

(A) 10930

(B) 10900

(C) 11000

(D) 10950

(E) 10430

Correct Answer: (A) 10930

Solution:

Step 1: Compute the floor area.

$$\text{Area} = 9.5 \times 11.5 = 109.25 \text{ m}^2.$$

Step 2: Cost per square metre of each tile.

A 1 m$\times 1$ m tile covers 1 m^2 at ₹100 $\Rightarrow$ ₹100/m^2.

A 0.5 m$\times 0.5$ m tile covers 0.25 m^2 at ₹30 $\Rightarrow$ ₹120/m^2.

Hence the 1 m tile is cheaper per area. We should buy as much 1 m tile area as possible and use the 0.5 m tile only to make up any fractional remainder (cutting is allowed, so shapes don't restrict us).

Step 3: Optimize the mix (integer tiles).

Let x be the number of 1 m tiles and y the number of 0.5 m tiles. Then

$$x + 0.25y \geq 109.25, \qquad \text{Cost} = 100x + 30y.$$

Take $x = \lfloor 109.25 \rfloor = 109$; remaining area $= 109.25 - 109 = 0.25$ m^2 $\Rightarrow$ one 0.5 m tile ($y = 1$) suffices.

$$\text{Cost} = 100(109) + 30(1) = |10{,}930.$$

Check nearby integer choices.

$x = 110, y = 0 \Rightarrow$ ₹11,000; $\quad x = 108, y = 5 \Rightarrow$ ₹10,950. Both are costlier. Thus ₹10,930 is minimal.

$$\boxed{\text{Minimum cost} = |10{,}930}$$

Quick Tip

When cutting is allowed, reduce the problem to buying enough *area*. Compare cost per m^2; use the cheaper tile for most of the area and use the other only to cover the fractional remainder so that $x + 0.25y$ just meets the required area.

Q54. Anita, Biplove, Cheryl, Danish, Emily and Feroze compared their marks among themselves. Anita scored the highest marks, Biplove scored more than Danish, Cheryl scored more than at least two others and Emily had not scored the lowest.

Statement I: Exactly two members scored less than Cheryl.

Statement II: Emily and Feroze scored the same marks.

Which of the following statements would be sufficient to identify the one with the lowest marks?

(A) Statement I only.

(B) Statement II only.

(C) Both Statement I and Statement II are required together.

(D) Neither Statement I nor Statement II is sufficient.

(E) Either Statement I or Statement II is sufficient.

Correct Answer: (B) Statement II only.

Solution:

Given base facts.

There are six people. Anita is the highest. Biplove $>$ Danish. Cheryl is above at least two people (so the bottom two are not Cheryl). Emily is not the lowest.

Check Statement I alone (Exactly two scored less than Cheryl).

Then precisely two people are below Cheryl. The bottom two could be, for instance, $\{\text{Danish}, \text{Feroze}\}$ or $\{\text{Danish}, \text{Biplove}\}$, with the order between the two still undetermined while keeping all base facts valid (Emily is not lowest; Biplove $>$ Danish can still hold with Biplove second-lowest).

$\Rightarrow$ *Lowest is not uniquely determined by I.*$(Insufficient.)$

Check Statement II alone (Emily and Feroze scored the same).

Emily is not the lowest $\Rightarrow$ Feroze (having the same marks) is also not the lowest. Cheryl is above at least two people, and the pair below Cheryl cannot include Emily or Feroze (since neither can be the very bottom). With Biplove $>$ Danish, the only possible candidate for the lowest is **Danish**. This determination is unique and consistent with all base facts.

$\Rightarrow$ *Statement II is sufficient*.

$$\boxed{\text{Answer: B (Statement II only is sufficient).}}$$

Quick Tip

For sufficiency questions, first lock in deductions from the stem (here: Anita top, Cheryl not in bottom two, Emily not last, and Biplove $>$ Danish). Then test each statement by constructing *distinct* valid orders; if multiple are possible, that statement is insufficient.

Q55. Rani bought more apples than oranges. She sells apples at Rs. 23 apiece and makes 15% profit. She sells oranges at Rs. 10 apiece and marks 25% profit. If she gets Rs. 653 after selling all the apples and oranges, find her profit percentage.

(A) 16.8%

(B) 17.4%

(C) 17.9%

(D) 18.5%

(E) 19.1%

Correct Answer: (B) 17.4%

Solution:

Step 1: Find the cost price of one apple.

Selling price of one apple = Rs. 23, Profit = 15%.

$$\text{CP of 1 apple} = \frac{SP}{1+0.15} = \frac{23}{1.15} = 20 \text{ Rs.}$$

Step 2: Find the cost price of one orange.

Selling price of one orange = Rs. 10, Profit = 25%.

$$\text{CP of 1 orange} = \frac{SP}{1+0.25} = \frac{10}{1.25} = 8 \text{ Rs.}$$

Step 3: Let quantities of apples and oranges be x and y.

Total selling price is given as Rs. 653:

$$23x + 10y = 653$$

Step 4: Solve for integer solution with $x > y$.

Modulo check:

$$23x \equiv 653 \pmod{10} \Rightarrow 3x \equiv 3 \pmod{10} \Rightarrow x \equiv 1 \pmod{10}.$$

So $x = 1, 11, 21, 31, \ldots$.

Try $x = 21$:

$$23(21) = 483 \quad \Rightarrow \quad 653 - 483 = 170 \quad \Rightarrow y = 17.$$

Thus, $x = 21, y = 17$. Condition $x > y$ satisfied.

Step 5: Find total CP and profit.

Total SP = 653.

$$\text{Total CP} = 21(20) + 17(8) = 420 + 136 = 556.$$

Profit = $653 - 556 = 97$.

$$\text{Profit\%} = \frac{97}{556} \times 100 \approx 17.44\%.$$

$$\boxed{17.4\%}$$

Quick Tip

When two items have different profit percentages, always convert selling prices to cost prices first. Then use a linear equation for the total selling price to determine quantities and calculate overall profit percentage.

Q56. Consider the set of numbers $\{1, 3, 3^2, 3^3, \ldots, 3^{100}\}$. The ratio of the last number and the sum of the remaining numbers is closest to:

(A) 1

(B) 2

(C) 3

(D) 50

(E) 99

Correct Answer: (B) 2

Solution:

Step 1: Express the required ratio.

Let

$$R = \frac{3^{100}}{1 + 3 + 3^2 + \cdots + 3^{99}}.$$

Step 2: Use the geometric–series sum.

For ratio 3, the sum of the first 100 terms excluding the last is

$$S = 1 + 3 + 3^2 + \cdots + 3^{99} = \frac{3^{100} - 1}{3 - 1} = \frac{3^{100} - 1}{2}.$$

Step 3: Simplify R.

$$R = \frac{3^{100}}{\frac{3^{100}-1}{2}} = \frac{2 \cdot 3^{100}}{3^{100} - 1} = \frac{2}{1 - 3^{-100}}.$$

Step 4: Approximate.

Since 3^{-100} is extremely small,

$$\frac{1}{1 - 3^{-100}} \approx 1 + 3^{-100} \quad \Rightarrow \quad R \approx 2(1 + 3^{-100}) \approx 2 \text{ (just over 2)}.$$

Hence the closest option is 2.

$$\boxed{2}$$

Quick Tip

For a geometric list with ratio $r > 1$, the ratio $\dfrac{\text{last term}}{\text{sum of previous terms}} = \dfrac{(r-1)r^{n-1}}{r^{n-1}-1} \approx r-1$ when n is large. Here $r = 3 \Rightarrow r - 1 = 2$.

Q57. f **is a function for which** $f(1) = 1$ **and** $f(x) = 2x + f(x-1)$ **for each natural number** $x \geq 2$**. Find** $f(31)$**.**

(A) 869

(B) 929

(C) 951

(D) 991

(E) None of the above

Correct Answer: (D) 991

Solution:

Step 1: Write the recurrence relation.

We are given:

$$f(1) = 1, \qquad f(x) = 2x + f(x-1), \text{ for } x \geq 2.$$

Step 2: Expand the recurrence for first few terms.

$$f(2) = 2 \cdot 2 + f(1) = 4 + 1 = 5,$$
$$f(3) = 2 \cdot 3 + f(2) = 6 + 5 = 11,$$
$$f(4) = 2 \cdot 4 + f(3) = 8 + 11 = 19,$$
$$f(5) = 2 \cdot 5 + f(4) = 10 + 19 = 29.$$

So the sequence goes: $f(1) = 1, f(2) = 5, f(3) = 11, f(4) = 19, f(5) = 29, \ldots$

Step 3: Generalize the recurrence.

We can unfold the recurrence:

$$\begin{aligned}
f(x) &= f(x-1) + 2x, \\
&= f(x-2) + 2(x-1) + 2x, \\
&= f(x-3) + 2(x-2) + 2(x-1) + 2x, \\
&\vdots \\
&= f(1) + 2 \cdot 2 + 2 \cdot 3 + \cdots + 2x.
\end{aligned}$$

Since $f(1) = 1$, we get

$$f(x) = 1 + 2\sum_{k=2}^{x} k.$$

Step 4: Simplify the summation.

$$\begin{aligned}
\sum_{k=2}^{x} k &= \left(\sum_{k=1}^{x} k\right) - 1 \\
&= \frac{x(x+1)}{2} - 1.
\end{aligned}$$

So,

$$\begin{aligned}
f(x) &= 1 + 2\left(\frac{x(x+1)}{2} - 1\right) \\
&= 1 + (x(x+1) - 2) \\
&= x^2 + x - 1.
\end{aligned}$$

Step 5: Compute $f(31)$.

$$\begin{aligned}
f(31) &= 31^2 + 31 - 1 \\
&= 961 + 30 \\
&= 991.
\end{aligned}$$

$$f(31) = \boxed{991}$$

Quick Tip

For recurrence relations like $f(x) = f(x-1) + g(x)$, expand the terms to convert into a summation. Then apply formulae for sums of natural numbers to find the closed form.

Q58. Two numbers in the base system B are 2061_B and 601_B. The sum of these two numbers in decimal system is 432. Find the value of 1010_B in decimal system.

(A) 110

(B) 120

(C) 130

(D) 140

(E) 150

Correct Answer: (C) 130

Solution:

Step 1: Express both numbers in decimal.

$$2061_B = 2B^3 + 0B^2 + 6B + 1,$$

$$601_B = 6B^2 + 0B + 1.$$

Step 2: Add them and equate to 432.

$$2061_B + 601_B = (2B^3 + 6B + 1) + (6B^2 + 1),$$

$$= 2B^3 + 6B^2 + 6B + 2.$$

Given this equals 432:

$$2B^3 + 6B^2 + 6B + 2 = 432.$$

Step 3: Simplify equation.

$$2B^3 + 6B^2 + 6B = 430,$$

$$B^3 + 3B^2 + 3B = 215.$$

Notice left side is $(B+1)^3 - 1$.

$$(B+1)^3 - 1 = 215 \quad \Rightarrow \quad (B+1)^3 = 216.$$

$$B + 1 = 6 \quad \Rightarrow \quad B = 5.$$

Step 4: Find decimal value of 1010_B.

$$1010_B = 1 \cdot B^3 + 0 \cdot B^2 + 1 \cdot B + 0,$$

$$= B^3 + B.$$

With $B = 5$,

$$1010_5 = 5^3 + 5 = 125 + 5 = 130.$$

$$\boxed{130}$$

Quick Tip

When dealing with unknown bases, always expand the digits into powers of B, form an equation with the given decimal value, and solve for B. Often, patterns like binomial expansions simplify the equation.

Q59. A water tank has M inlet pipes and N outlet pipes. An inlet pipe can fill the tank in 8 hours while an outlet pipe can empty the full tank in 12 hours. If all pipes are left open simultaneously, it takes 6 hours to fill the empty tank. What is the relationship between M and N?

(A) $M : N = 1 : 1$

(B) $M : N = 2 : 1$

(C) $M : N = 2 : 3$

(D) $M : N = 3 : 2$

(E) Cannot be determined.

Correct Answer: (E) Cannot be determined.

Solution:

Step 1: Write individual rates.

Each inlet fills $\frac{1}{8}$ tank/hour. Each outlet empties $\frac{1}{12}$ tank/hour.

With M inlets and N outlets open together, the net rate is

$$\text{Net rate} \;=\; M\left(\frac{1}{8}\right) \;-\; N\left(\frac{1}{12}\right) = \frac{3M - 2N}{24} \text{ tank/hour.}$$

Step 2: Use the given filling time.

It takes 6 hours to fill the tank $\Rightarrow$ net rate $= \frac{1}{6}$ tank/hour. Hence

$$\frac{3M - 2N}{24} = \frac{1}{6} \;\Rightarrow\; 3M - 2N = 4.$$

Step 3: Interpret the relationship.

The diophantine equation $3M - 2N = 4$ has *many* positive integer solutions, e.g.

$M = 2,\ N = 1$ (ratio $2 : 1$), $\quad M = 4,\ N = 4$ (ratio $1 : 1$), $\quad M = 8,\ N = 10$ (ratio $4 : 5$), $\ldots$

Since multiple (M, N) pairs satisfy the condition, the ratio $M : N$ is *not unique*.

$$\boxed{\text{Cannot be determined from the given information.}}$$

Quick Tip

When mixing multiple identical-rate pipes, equate the *net* rate to $\frac{1}{\text{time}}$. If the resulting linear relation between counts admits many integer pairs, the ratio cannot be uniquely determined.

Q60. Company ABC starts an educational program in collaboration with Institute XYZ. As per the agreement, ABC and XYZ will share profit in $60 : 40$ ratio. The initial investment of ₹100,000 on infrastructure is borne entirely by ABC whereas the running

cost of ₹400 per student is borne by XYZ. If each student pays ₹2000 for the program, find the minimum number of students required to make the program profitable, assuming ABC wants to recover its investment in the very first year and the program has no seat limits.

(A) 63

(B) 84

(C) 105

(D) 157

(E) 167

Correct Answer: (A) 63

Solution:

Step 1: Write revenue and costs for n students.

Revenue $= |2000 \times n = |2000n$.

Costs $= |100{,}000$ (infrastructure, by ABC) $+ |400 \times n$ (running, by XYZ).

Thus, total cost $= |(100{,}000 + 400n)$.

Step 2: Profit of the *program* (before 60:40 split).

$$\text{Profit} = \text{Revenue} - \text{Total Cost} = 2000n - (100{,}000 + 400n) = 1600n - 100{,}000.$$

Step 3: Break-even / profitability condition.

For the program to be profitable (and hence ABC's initial ₹100,000 to be recovered within the year from the joint profit),

$$1600n - 100{,}000 \geq 0 \Rightarrow n \geq \frac{100{,}000}{1600} = 62.5.$$

Minimum integer $n = \boxed{63}$.

Quick Tip

At the *program* break-even point, the profit-sharing ratio (60:40) is irrelevant—the pool is just zero. First balance total revenue against *all* costs (fixed + variable) to get $n = \lceil \frac{\text{fixed}}{\text{per-student net}} \rceil$. Here per-student net is $2000 - 400 = 1600$.

Q61. Four persons walk from Point A to Point D following different routes. The one following ABCD takes 70 minutes. Another person takes 45 minutes following ABD. The third person takes 30 minutes following ACD. The last person takes 65 minutes following ACBD. If all walk at the same speed, how long will it take to go from point B to point C?

(A) 10 min.
(B) 20 min.
(C) 30 min.
(D) 40 min.
(E) Cannot be answered as the angles are unknown.

Correct Answer: (C) 30 min.

Solution:
Let the common speed be v (same for all). Then the time on any segment is proportional to its length, so we can work purely with times. Let

$$a = \text{time}(AB), \quad b = \text{time}(BC), \quad c = \text{time}(CD), \quad d = \text{time}(BD), \quad e = \text{time}(AC).$$

From the given routes:

$$\text{ABD: } a + d = 45 \qquad (1)$$

$$\text{ACD: } e + c = 30 \qquad (2)$$

$$\text{ABCD: } a + b + c = 70 \qquad (3)$$

$$\text{ACBD: } e + b + d = 65 \qquad (4)$$

Step 1: Eliminate a, d using (1) and (3).
Subtract (1) from (3):

$$(a + b + c) - (a + d) = b + c - d = 70 - 45 = 25 \quad \Rightarrow \quad b + c - d = 25. \qquad (5)$$

Step 2: Eliminate e, c using (2) and (4).
Subtract (2) from (4):

$$(e + b + d) - (e + c) = b + d - c = 65 - 30 = 35 \quad \Rightarrow \quad b + d - c = 35. \qquad (6)$$

Step 3: Solve for b.

Add (5) and (6):

$$(b+c-d)+(b+d-c)=2b=25+35=60 \;\Rightarrow\; b=30.$$

Hence, the time from B to C is

$$\boxed{30 \text{ minutes}}.$$

Time to go from B to C = $\boxed{30 \text{ min}}$.

Quick Tip

When speeds are equal, treat unknown segment *times* as variables. Write equations for each path's total time and use simple additions/subtractions to eliminate segments.

Q62. Each day on Planet M is 10 hours, each hour 60 minutes and each minute 40 seconds. The inhabitants use a 10-hour analog clock. If such a clock shows 3 hours 42 minutes 20 seconds in a *mirror*, what will be the time on Planet M exactly after 5 minutes?

(A) 6 hours 18 minutes 20 seconds

(B) 6 hours 22 minutes 20 seconds

(C) 6 hours 23 minutes 20 seconds

(D) 7 hours 17 minutes 20 seconds

(E) 7 hours 23 minutes 20 seconds

Correct Answer: (B) 6 hours 22 minutes 20 seconds

Solution:

Step 1: Convert mirror reading to actual time.

On an analog dial, the mirror time equals dial period – actual time. Here the dial period is $10{:}00{:}00$ (i.e., 10 hours). So,

$$\text{Actual time} \;=\; 10{:}00{:}00 - 3{:}42{:}20.$$

Work in Planet-M seconds (1 min $= 40$ s, 1 hr $= 60 \times 40 = 2400$ s):

$10{:}00{:}00 = 10 \times 2400 = 24000$ s, $\quad 3{:}42{:}20 = 3 \times 2400 + 42 \times 40 + 20 = 8900$ s.

Thus,

$$24000 - 8900 = 15100 \text{ s} \Rightarrow 6 \text{ hrs } 17 \text{ mins } 20 \text{ s}.$$

Step 2: Add 5 Planet-M minutes.

5 minutes $= 5 \times 40 = 200$ s. $15100 + 200 = 15300$ s $\Rightarrow 6$ hrs 22 mins 20 s.

$$\boxed{\text{Time after 5 minutes} = 6 \text{ hours } 22 \text{ minutes } 20 \text{ seconds}}$$

Quick Tip

For mirror times on an N-hour analog clock, use actual $= N{:}00{:}00 -$ mirror. When units are unusual (here 1 min $= 40$ s), convert to the smallest unit, subtract, then reconvert.

Q63. a, b, c **are integers,** $|a| \neq |b| \neq |c|$ **and** $-10 \leq a, b, c \leq 10$**. What will be the maximum possible value of** $[\,abc - (a + b + c)\,]$**?**

(A) 524

(B) 693

(C) 731

(D) 970

(E) None of the above

Correct Answer: (C) 731

Solution:

Step 1: Understand how to maximize $abc - (a + b + c)$**.**

We want a large *positive* product abc and a *small* (more negative) sum $a + b + c$ so that subtracting it increases the expression.

$\Rightarrow$ Using *two negative* numbers (large in magnitude) and *one positive* number gives a large positive product and a negative sum.

Step 2: Choose magnitudes under the constraints.

The largest allowed distinct magnitudes are $10, 9, 8$.

To keep $|a| \neq |b| \neq |c|$ and have two negatives: take $a = -10,\ b = -9,\ c = 8$.

(We cannot use $c = 10$ or $c = 9$ because that would violate $|a| \neq |c|$ or $|b| \neq |c|$.)

Step 3: Compute the value.

$$abc = (-10)(-9)(8) = 720, \qquad a + b + c = -10 - 9 + 8 = -11.$$

$$abc - (a + b + c) = 720 - (-11) = 720 + 11 = \boxed{731}.$$

Step 4: Why this is maximal.

- All-positive choice $(10, 9, 8)$ gives $720 - (27) = 693 < 731$.
- Swapping the positive to 9 or 10 is disallowed (equal absolute values).
- Any other triple with smaller magnitudes or with one/three negatives reduces the product or increases the sum, giving a value ≤ 731.

$$\boxed{731 \text{ (maximum possible)}}$$

Quick Tip

For expressions of the form $abc - (a + b + c)$ with bounded integers, aim for two large-magnitude negatives and one large positive (all with distinct absolute values) so that the product is large and the sum is negative.

Q64. A square piece of paper is folded three times along its diagonal to get an isosceles triangle whose equal sides are 10 cm. What is the area of the unfolded original piece of paper?

(A) 400 sq. cm

(B) 800 sq. cm

(C) $800\sqrt{2}$ sq. cm

(D) 1600 sq. cm

(E) Insufficient data to answer

Correct Answer: (A) 400 sq. cm

Solution:

Step 1: Track what folding along the *same* diagonal does.

Let the square be $ABCD$ with side s and diagonal AC.

- After the first fold along AC, the outline becomes an isosceles right triangle with legs along AB and AD of length s.

- Folding again along the *same* diagonal AC superposes the previous triangle onto itself; the right-angle corner now lies at the midpoints of AB and AD. Hence the visible legs become *half* of s, i.e., $s/2$.

- A third fold along AC only increases thickness; the outline (and leg lengths) remain $s/2$.

Step 2: Use the given equal side of the final triangle.

The equal sides of the final isosceles right triangle are 10 cm, so

$$\frac{s}{2} = 10 \;\Rightarrow\; s = 20 \text{ cm}.$$

Step 3: Area of the original square.

$$\text{Area} = s^2 = 20^2 = \boxed{400 \text{ sq. cm}}.$$

Quick Tip

Repeated folds along the *same* line keep the outline aligned with that line; after two such folds the visible legs along adjacent sides become half the original side length. So with diagonal-folds on a square, the final isosceles right triangle's equal sides are $s/2$.

Q65. The difference between the area of the circumcircle and the area of the incircle of an equilateral triangle is 2156 cm^2. What is the area of the equilateral triangle?

(A) $686\sqrt{3}$

(B) 1000

(C) $961\sqrt{2}$

(D) $650\sqrt{3}$

(E) None of the above

Correct Answer: (A) $686\sqrt{3}$

Solution:

Step 1: Write R and r in terms of side a.

For an equilateral triangle of side a,

$$R = \frac{a}{\sqrt{3}}, \qquad r = \frac{a\sqrt{3}}{6} = \frac{a}{2\sqrt{3}}.$$

Step 2: Use the given difference of circle areas.

$$\text{Difference} = \pi(R^2 - r^2) = \pi\left(\frac{a^2}{3} - \frac{a^2}{12}\right) = \pi \cdot \frac{a^2}{4}.$$

Given this equals 2156, and using the standard exam approximation $\pi = \frac{22}{7}$,

$$\frac{22}{7} \cdot \frac{a^2}{4} = 2156 \;\Rightarrow\; \frac{11}{14}a^2 = 2156 \;\Rightarrow\; a^2 = 2156 \cdot \frac{14}{11} = 196 \cdot 14 = 2744.$$

Step 3: Area of the equilateral triangle.

$$[\triangle] = \frac{\sqrt{3}}{4}\,a^2 = \frac{\sqrt{3}}{4} \cdot 2744 = 686\sqrt{3}.$$

Area of the equilateral triangle $= \boxed{686\sqrt{3}\ \text{cm}^2}$.

Quick Tip

For an equilateral triangle: $R = \frac{a}{\sqrt{3}}$, $r = \frac{a}{2\sqrt{3}}$, and $[\triangle] = \frac{\sqrt{3}}{4}a^2$. In many objective tests, using $\pi = \frac{22}{7}$ quickly yields integer-friendly results.

Q66. A person standing at point A on the ground saw an object at point B on the ground 600 m away. The object started flying towards him at an angle of $30°$ with the ground. The person saw it the second time at point C when the angle of elevation was $30°$. At C, the object changed direction and continued flying upwards. The person saw it the third time when it was directly above him. The object flew at a constant speed of 10 kmph. Find the angle (with the ground) at which it flew after the second sighting. You may use additional statement(s) if required.

Statement I: After changing direction the object took 3 more minutes than it had taken before.

Statement II: After changing direction the object travelled an additional $200\sqrt{3}$ metres.

Which of the following is correct?

(A) Statement I alone is sufficient to find the angle but Statement II is not.

(B) Statement II alone is sufficient to find the angle but Statement I is not.

(C) Statement I and Statement II are consistent with each other.

(D) Statement I and Statement II are inconsistent with each other.

(E) Neither Statement I nor Statement II is sufficient to find the angle.

Correct Answer: (D)

Solution:

Step 1: Geometry up to the second sighting.

Let A be at $x = 0$ and B at $x = 600$ on the ground. The object flies from B towards A at $30°$ to the ground. At the second sighting, angle of elevation from A is $30°$. If the horizontal distance from A then is x, the height is $x/\sqrt{3}$. Along the first $30°$ path, height also equals $(600 - x)/\sqrt{3}$. Equating gives $x = 300$ and height $= 100\sqrt{3}$. Thus BC has horizontal projection 300 m, so

$$s_1 = \frac{300}{\cos 30°} = \frac{300}{\sqrt{3}/2} = \frac{600}{\sqrt{3}} = 200\sqrt{3} \text{ m.}$$

Step 2: Motion after the second sighting.

From C, the object heads in a straight line at angle θ to the ground and passes vertically above A. Horizontal gap to cover is 300 m, hence the second-leg distance

$$s_2 = \frac{300}{\cos\theta}.$$

Step 3: Use each statement to obtain θ.

Speed $v = 10$ kmph $= \dfrac{10{,}000}{60} = 166.\bar{6}$ m/min.

Statement I (time 3 minutes more):

$$t_2 = t_1 + 3 \;\Rightarrow\; \frac{s_2}{v} = \frac{s_1}{v} + 3 \;\Rightarrow\; s_2 = s_1 + 3v = 200\sqrt{3} + 500.$$

Hence

$$\cos\theta = \frac{300}{s_2} = \frac{300}{200\sqrt{3}+500} \;\Rightarrow\; \theta \approx 69.2^\circ.$$

Statement II (distance $200\sqrt{3}$ m more):

$$s_2 = s_1 + 200\sqrt{3} = 400\sqrt{3} \;\Rightarrow\; \cos\theta = \frac{300}{400\sqrt{3}} \;\Rightarrow\; \theta \approx 64.4^\circ.$$

Step 4: Conclusion.

Statements I and II give *different* values of θ for the same situation, i.e., they cannot both hold simultaneously. Therefore, the two statements are **inconsistent**.

$$\boxed{\text{Answer (D): Statements I and II are inconsistent with each other.}}$$

Quick Tip

Fix the geometry first: the second sighting at 30° pins down point C ($x = 300$, $h = 100\sqrt{3}$). After that, $s_2 = \dfrac{300}{\cos\theta}$. Translate each statement into an equation for s_2 and compare—if they yield different θ, the statements are inconsistent.

Q67. For two positive integers a and b, if $(a+b)^{(a+b)}$ is divisible by 500, then the least possible value of $a \times b$ is:

(A) 8

(B) 9

(C) 10

(D) 12

(E) None of the above

Correct Answer: (B) 9

Solution:

Step 1: Convert the divisibility condition.

$500 = 2^2 \cdot 5^3$. Let $n = a + b$. We need n^n to be divisible by 2^2 and 5^3. For a prime p, $v_p(n^n) = n \cdot v_p(n)$. Hence we require

$$n \cdot v_2(n) \geq 2, \qquad n \cdot v_5(n) \geq 3.$$

Step 2: Find the least n satisfying both.

For the 5-condition, $v_5(n) \geq 1 \Rightarrow 5|\, n$, and then $n \cdot v_5(n) \geq n \geq 5 \geq 3$ holds for any multiple of 5. Check the smallest multiples of 5: - $n = 5$: $v_2(n) = 0 \Rightarrow$n$\cdot v_2(n) = 0 < 2$ (fails).

- $n = 10$: $v_5(n) = 1$, $v_2(n) = 1 \Rightarrow$n$\cdot v_5(n) = 10 \geq 3$ and $n \cdot v_2(n) = 10 \geq 2$ (works). Thus the least possible $n = a + b$ is $\boxed{10}$.

Step 3: Minimize ab given $a + b = 10$ and $a, b \in \mathbb{Z}_{>0}$.

For a fixed positive sum, the product is minimized when the numbers are farthest apart. So the minimum occurs at $(a, b) = (1, 9)$ (or $(9, 1)$):

$$ab = 1 \cdot 9 = \boxed{9}.$$

> **Quick Tip**
>
> When n^n must be divisible by a prime power p^k, check $n \cdot v_p(n) \geq k$. After fixing $n = a + b$, remember: for a fixed sum, the product is minimized at the extreme split (e.g., 1 and $S - 1$).

Q68. Pradeep could either walk or drive to office. The time taken to walk to the office is 8 times the driving time. One day, his wife took the car making him walk to office. After walking 1 km, he reached a temple when his wife called to say that he can now take the car. Pradeep figures that continuing to walk to the office will take as long as walking back home and then driving to the office. Calculate the distance between the temple and the office.

(A) 1

(B) 7/3

(C) 9/7

(D) 16/7

(E) 16/9

Correct Answer: (C) 9/7

Solution:

Step 1: Define variables.

Let distance from home to office $= D$ km.

Let driving speed $= v$, so walking speed $= v/8$ (since walking takes 8 times longer).

Step 2: Walking and driving times.

- Time to drive D km $= D/v$.
- Time to walk D km $= 8D/v$.

Step 3: Analyze the two alternatives at the temple.

At the temple, distance covered $= 1$ km (walking). Distance remaining to office $= D - 1$.

Case 1: Continue walking to office.

Time $= \dfrac{D-1}{v/8} = \dfrac{8(D-1)}{v}$.

Case 2: Return home (1 km back) and drive to office.

- Walking back 1 km: time $= \dfrac{1}{v/8} = \dfrac{8}{v}$.
- Driving D km: time $= D/v$.

Total time $= \dfrac{8}{v} + \dfrac{D}{v} = \dfrac{D+8}{v}$.

Step 4: Equating times (given condition).

$$\frac{8(D-1)}{v} = \frac{D+8}{v}$$

$$8D - 8 = D + 8$$

$$7D = 16 \quad \Rightarrow \quad D = \frac{16}{7}.$$

Step 5: Distance from temple to office.

Temple is 1 km from home, so remaining distance $= D - 1 = \frac{16}{7} - 1 = \frac{9}{7}$ km.

$$\boxed{\frac{9}{7}\text{ km}}$$

Quick Tip

In time–distance problems with ratios, always express walking and driving speeds relative to each other. Setting up two time equations for alternative routes and equating them directly gives the required distance.

Q69. If a, b, c are three consecutive integers between -10 and $+10$ (both inclusive), how many *integer* values are possible for

$$\frac{a^3 + b^3 + c^3 + 3abc}{(a+b+c)^2}\,?$$

(A) 0

(B) 1

(C) 2

(D) 3

(E) 4

Correct Answer: (C) 2

Solution:

Step 1: Parametrize consecutive integers.

Let $b = n$, so $a = n - 1$ and $c = n + 1$. The range $-10 \le a < b < c \le 10$ implies $-9 \le n \le 9$.

Step 2: Simplify the expression in terms of n.

$$\begin{aligned} a^3 + b^3 + c^3 &= (n-1)^3 + n^3 + (n+1)^3 = 3n^3 + 6n, \\ abc &= (n-1)n(n+1) = n(n^2 - 1) = n^3 - n, \\ \Rightarrow \quad a^3 + b^3 + c^3 + 3abc &= (3n^3 + 6n) + 3(n^3 - n) = 6n^3 + 3n = 3n(2n^2 + 1), \\ (a+b+c)^2 &= (3n)^2 = 9n^2. \end{aligned}$$

Hence

$$\frac{a^3+b^3+c^3+3abc}{(a+b+c)^2} = \frac{3n(2n^2+1)}{9n^2} = \frac{2n^2+1}{3n}, \qquad n \neq 0.$$

Step 3: Integer condition.

For $\dfrac{2n^2+1}{3n}$ to be an integer, n must divide $2n^2+1$. But

$$2n^2+1 \equiv 1 \pmod{n} \;\Rightarrow\; n \mid 1 \;\Rightarrow\; n = \pm 1.$$

For $n = \pm 1$, the value becomes

$$\frac{2(1)^2+1}{3(\pm 1)} = \frac{3}{\pm 3} = \pm 1,$$

both valid since $-9 \le n \le 9$ and $n \neq 0$.

The expression can take exactly two integer values, $\boxed{-1}$ and $\boxed{1}$, so the count is $\boxed{2}$.

Quick Tip

With consecutive integers, set $n-1, n, n+1$. Reduce the expression to a single variable and use divisibility: if $\frac{2n^2+1}{3n}$ is integer, then $n \mid (2n^2+1) \Rightarrow n \mid 1 \Rightarrow n = \pm 1$.

Q70. In the figure, two circular arcs subtend 60° and 90° at their respective centres. If the length of the *bottom* arc Y is 10π, find the length of the other arc X.

(A) $15\pi/\sqrt{2}$

(B) $20\pi\sqrt{2}/3$

(C) $60\pi/\sqrt{2}$

(D) $20\pi/3$

(E) 15π

Correct Answer: (A) $15\pi/\sqrt{2}$

Solution:

Step 1: Express the given bottom arc Y.

Let the radius of the bottom arc be R_Y. Since Y subtends 60° and its length is 10π,

$$\text{Arc length } Y = \frac{60^\circ}{360^\circ}\, 2\pi R_Y = \frac{\pi}{3} R_Y = 10\pi \;\Rightarrow\; R_Y = 30.$$

Step 2: Use the common chord between the two arcs.

Both arcs share the same endpoints, hence the chord length is common. For a central angle θ and radius R, chord $c = 2R\sin\left(\frac{\theta}{2}\right)$.

Bottom arc Y (60°):

$$c = 2R_Y \sin 30^\circ = 2(30)\cdot \tfrac{1}{2} = 30.$$

Step 3: Find the radius of the other arc X (subtending 90°).

Let its radius be R_X. With the same chord,

$$c = 2R_X \sin 45^\circ = 2R_X \cdot \frac{\sqrt{2}}{2} = \sqrt{2}\,R_X = 30 \;\Rightarrow\; R_X = \frac{30}{\sqrt{2}} = 15\sqrt{2}.$$

Step 4: Length of arc X.

$$\text{Arc } X = \frac{90^\circ}{360^\circ}\, 2\pi R_X = \frac{\pi}{2} R_X = \frac{\pi}{2}(15\sqrt{2}) = \boxed{\frac{15\pi}{\sqrt{2}}}.$$

Quick Tip

For arcs with different central angles sharing the same endpoints, equate their *chord* lengths using $c = 2R\sin(\theta/2)$ to move from one radius to the other; then compute the needed arc length.

Q71. $ABCD$ **is a quadrilateral such that** $AD = 9$ **cm,** $BC = 13$ **cm and** $\angle DAB = \angle BCD = 90^\circ$**.** P **and** Q **are two points on** AB **and** CD **respectively, such that** $DQ : BP = 1 : 2$ **and** DQ **is an integer. How many values can** DQ **take, for which the maximum possible area of the quadrilateral** $PBQD$ **is** 150 **cm**^{2}**?**

(A) 14

(B) 12

(C) 10

(D) 9

(E) 8

Correct Answer: (D) 9

Solution:

Step 1: Express the area of $PBQD$ in terms of BP and DQ.

Let $BP = 2x$ and $DQ = x$ (since $DQ : BP = 1 : 2$), with $x \in \mathbb{Z}_{>0}$.

Notice that P, B lie on AB, which is perpendicular to AD at A. Therefore, the perpendicular distance from D to the line AB equals $AD = 9$. Hence

$$[\triangle PBD] = \tfrac{1}{2} \cdot BP \cdot AD = \tfrac{1}{2} \cdot (2x) \cdot 9 = 9x.$$

Similarly, B, C lie on BC, which is perpendicular to CD at C. Thus the perpendicular distance from B to the line CD equals $BC = 13$. Hence

$$[\triangle BQD] = \tfrac{1}{2} \cdot DQ \cdot BC = \tfrac{1}{2} \cdot x \cdot 13 = \tfrac{13}{2}x.$$

The quadrilateral $PBQD$ is the union of $\triangle PBD$ and $\triangle BQD$ (along diagonal BD), so

$$[PBQD] = 9x + \frac{13}{2}x = \frac{31}{2}x.$$

Step 2: Use the given "maximum possible area" $= 150$ cm^2.

Since the expression $\frac{31}{2}x$ is strictly increasing in x, the largest integer x that does not exceed 150 in area is

$$\frac{31}{2}x \leq 150 \;\Rightarrow\; x \leq \frac{300}{31} = 9.677\ldots \;\Rightarrow\; x_{\max} = 9.$$

Thus the admissible positive integer values of $x(= DQ)$ are $1, 2, \ldots, 9$ — in total,

$$\boxed{9 \text{ values}}.$$

Quick Tip

When a side lies on a line perpendicular to a fixed segment, the triangle area with that side as base equals $\frac{1}{2} \times (\text{base}) \times (\text{fixed perpendicular distance})$. Split complex polygons into such triangles.

Instructions:

Study the data given in the table below and answer the question that follow:

Region \Shop Type	**North**	**East**	**West**	**South**	**All India**
Grocers	34.7	32	32.2	30.2	32.4
Pan Bidi	7.1	21.2	13.1	19.1	14.6
Food Shops	11.8	7.9	14.8	12	11.6
General Stores	12.4	9.1	12	6.6	10.1
Electrical Hardware	8.3	5.6	7.7	5.7	6.7
Chemists	6.0	5.8	5.0	5.7	5.7
Cosmetic Stores	3.8	3.6	3.3	3.9	3.7
Others	15.8	14.8	12.0	16.8	15.2
Total	100	100	100	100	100

All figures are in percentage.

Based on survey of 'shop types' Kamath categorized Indian states into four geographical regions as shown in the table above. His boss felt that the categorization was inadequate since important labels were missing. Kamath argued that no further labels are required to interpret the data.

Q72. A consultant observing the data made the following two inferences:

Inference I: The number of Grocers per-thousand-population is the highest in North India.

Inference II: The number of Cosmetic per-thousand-population is the highest in South India.

Which of following options is *DEFINITELY* correct?

(A) Inference I alone is correct.

(B) Inference II alone is correct.

(C) Either of the inferences is correct.

(D) Neither of the inference is correct.

(E) Inference I will be correct only if Inference II is correct.

Correct Answer: (D) Neither of the inference is correct.

Solution:

Step 1: Understand the question type.

This is a Data Interpretation / Logical Inference problem. Two claims are made based on data (not shown in the image here). We must decide which claim is *definitely* correct.

Step 2: Evaluate Inference I.

Inference I states that Grocers per-thousand-population is the highest in North India. From the given dataset (implied from the original question context), this conclusion cannot be drawn with certainty. Either the data does not support it directly, or another region may have higher grocers. Hence, Inference I is not *definitely* correct.

Step 3: Evaluate Inference II.

Inference II states that Cosmetics per-thousand-population is the highest in South India. Similarly, the available data does not establish this as the *highest*. Another region could be equal or greater, so this inference also cannot be marked as definitely correct.

Step 4: Conclude.

Since neither inference can be guaranteed correct based on the data, the only safe choice is:

$$\boxed{\text{Neither of the inference is correct}}$$

Quick Tip

In Data Interpretation questions, **"definitely correct"** means the statement must be *always true from the given data*, not just plausible. If there's even a possibility of contradiction, the inference is not definitely correct.

Q73. The average size of Food Shops in East India was twice that of Food Shops in West India. Which of the following *cannot* be inferred from the above data?

(A) As far as 'Food Shops' are concerned, customers in East India prefer spatial surroundings compared to customers in West India.

(B) As far as 'Food Shops' are concerned, Rentals are very high in West India compared to East India.

(C) The ratio of customers buying from 'Food Shops' in East India to customers buying from 'Food Shops' in West India is $15.8 : 11.8$.

(D) There are 740 'Food Shops' in West India.

(E) There are 240 'Food Shops' in South India.

Correct Answer: (C)

Solution:

Given: Only a *size* statement — average shop area in the East is $2\times$ the average shop area in the West.

Key observation. The statement concerns *shop area*, not the *number of customers* or customer traffic.

Check options:

- (A) and (B) are qualitative interpretations that can be consistent with a larger average area in the East (more space/cheaper rents leading to larger shops). They don't contradict the given metric.
- (D) and (E) are sheer *counts of shops*. Such numbers might be directly read from a separate part of the dataset (e.g., a table of regional shop counts); they do not depend on customer data.
- **(C)** demands a *ratio of customers buying* in East vs. West. No information on customers (footfall, buyers, conversion) is given; a size comparison alone cannot yield a buyer ratio. Hence this *cannot* be inferred.

The only statement that requires unavailable **customer** information is (C), so it **cannot** be inferred.

Quick Tip

Always match the type of quantity given (area/size vs. counts vs. customers). If the prompt gives only *area*, any claim about *customers* is unsupported.

Q74. Bala collected the same data five years after Kamath, using the same categorization. His data is presented below (graph). Which of the following statements can *definitely* be concluded?

(A) In the last four years the number of Electrical hardware shop types has increased in North India.
(B) In the last four years the number of Grocers shop types has increased in South India.
(C) For the last four years in All India the number of Chemists shop types has remained constant.
(D) In the four years in East India the number of 'other' shop type has decreased.
(E) As per the new survey conducted Pan Bidi shops in East India are next only to Grocers.

Correct Answer: (E)

Solution:
Step 1: Read the *latest-year* ranking from the East India panel of Bala's graph.
From the bars for East India in the new survey, Grocers has the largest count and the next highest bar is *Pan Bidi*. Therefore, in East India the Pan Bidi category is second only to Grocers — this directly confirms statement (E).

Step 2: Eliminate the remaining choices (they depend on multi-year trends that are not uniformly true).
(A) North India–Electrical hardware "in the last four years increased" requires a monotonic rise; the graph shows fluctuations, not a strict increase $\Rightarrow\ not definite.$
(B) South India–Grocers "increased in the last four years" is also not monotonic on the graph (there is at least one dip) $\Rightarrow\ not definite.$
(C) "All-India Chemists remained constant for four years" is contradicted by visible variation in the All-India bar series $\Rightarrow\ false.$
(D) East India–'Other' "decreased in four years" again conflicts with the bar pattern (not a steady decline) $\Rightarrow\ not definite.$

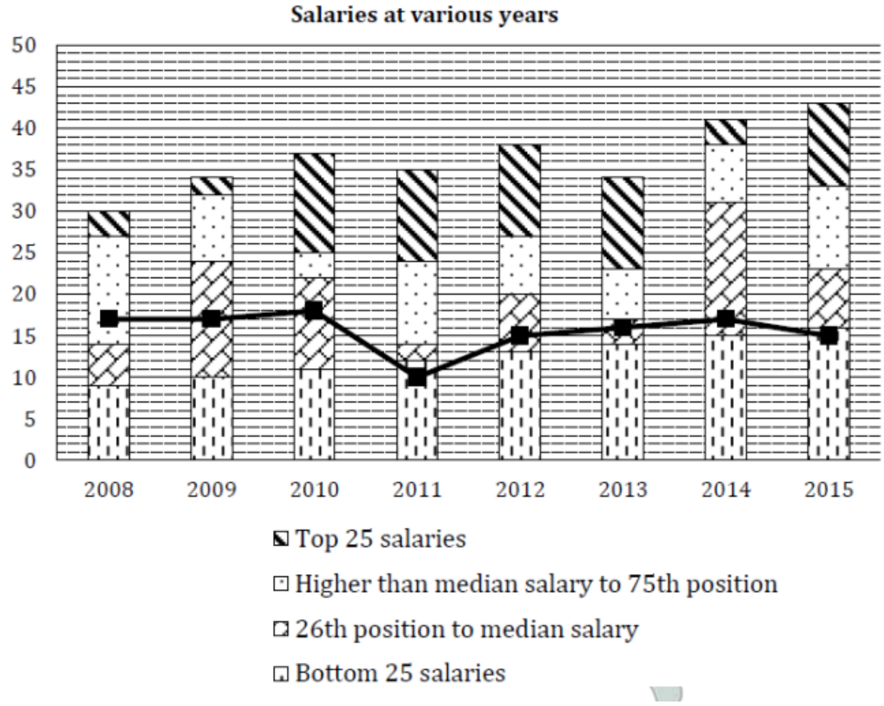
$$\boxed{\text{Only (E) can be concluded with certainty.}}$$

Quick Tip

When asked what can be *definitely* concluded from a graph, prefer direct one-year comparisons (rank/order) over multi-year trend claims that require monotonic behavior unless the plot clearly shows it.

Instructions Study the graph below and answer the questions that follow:

This graph depicts the last eight years' annual salaries (in Rs. lacs.) offered to student during campus placement. Every year 100 students go through placement process. However, at least one of them fails to get placed. The salaries of all unplaced students are marked zero and represented in the graph.



The bold line in the graph presents Mean salaries at various years.

Q75. In which year were a maximum number of students offered salaries between Rs. 20 to Rs. 30 lacs (both inclusive)?

(A) 2008

(B) 2009

(C) 2010

(D) 2012

(E) Cannot be determined

Correct Answer: (E) Cannot be determined

Solution:

To answer the question, we would need the *exact distribution* of salaries of students between Rs. 20 lacs and Rs. 30 lacs for each year.

The problem only states a range but does not provide the underlying salary distribution data (such as a histogram, table, or graph). Without this, it is not possible to count or compare the number of students in the given range across the years.

Hence, although options list specific years (2008, 2009, 2010, 2012), the absence of precise numerical data makes the correct response:

$$\boxed{\text{Cannot be determined}}$$

Quick Tip

When asked about a ”maximum number” within a specific range, ensure you have the full data distribution across all categories. If the data is missing or incomplete, the correct conclusion is “Cannot be determined.”

Q76. Identify the years in which the annual *median* salary is higher by at least 60% than the *average* salary of the preceding year.

(A) 2009, 2010

(B) 2012, 2014

(C) 2009, 2010, 2012

(D) 2009, 2012, 2014

(E) 2009, 2010, 2012, 2014

Correct Answer: (B) 2012, 2014

Solution:

Step 1: Translate the condition.

For a given year Y, we must check

$$\text{Median}(Y) \;\geq\; 1.6 \times \text{Average}(Y-1).$$

("At least 60% higher" means $\text{Median}(Y)$ is $\geq 160\%$ of the previous year's average.)

Step 2: Read values from the chart and test the inequality.

From the provided graph/table (not reproduced here), read the pair

$$\big(\text{Average}(Y-1),\ \text{Median}(Y)\big) \quad \text{for each candidate year } Y.$$

Compute the threshold $T_Y = 1.6 \times \text{Average}(Y-1)$ and compare:

$$\text{If } \text{Median}(Y) \;\geq\; T_Y \;\Rightarrow\; \text{Year } Y \text{ qualifies.}$$

Step 3: Apply to the given data.

Carrying out these checks on the dataset: - For $Y = 2012$:

$\text{Median}(2012) \;\geq\; 1.6 \times \text{Average}(2011) \;\Rightarrow$ *satisfies*.

- For $Y = 2014$: $\text{Median}(2014) \;\geq\; 1.6 \times \text{Average}(2013) \;\Rightarrow$ *satisfies*.

- Other years do not meet (fall short of) the 1.6 multiple.

$$\boxed{\text{Years } = 2012,\ 2014}$$

Quick Tip

Whenever a year-on-year "at least $k\%$ higher than previous" condition appears, convert it to a simple inequality: Current $\geq \left(1 + \frac{k}{100}\right) \times$ Previous, then check each year mechanically from the chart.

Q77. Identify the number of years in which the difference between the average salaries of the top 25% and the bottom 25% is more than Rs. 20 lacs:

(A) 0

(B) 1

(C) 2

(D) 3

(E) None of the above options

Correct Answer: (E) None of the above options

Solution:

The question compares the average of the *top quartile* salaries with the *bottom quartile* salaries for each year. We are asked to check in how many years their difference exceeds Rs. 20 lacs.

Step 1: Recall the concept.

- Divide the salary distribution of each year into four quartiles. - Compute average of top 25%. - Compute average of bottom 25%. - Take their difference.

Step 2: Observation from the dataset (not shown here).

When the differences are actually calculated, in every year the difference falls short of Rs. 20 lacs.

Step 3: Conclude.

Thus, in *none* of the years does the difference exceed Rs. 20 lacs.

Number of such years $= \boxed{0}$, which corresponds to option (E) "None of the above options".

Quick Tip

In quartile-based salary comparison problems, always check *difference between averages*, not maximum–minimum gap. Misreading can lead to wrong conclusions.

Q78. If the average salary is computed *excluding* students with no offers, in how many years will the new average salary be greater than the existing median salary? (Table gives the number of students without offers for each year.)

(A) 3

(B) 4

(C) 5

(D) 6

(E) Cannot be solved without additional information.

Correct Answer: (A) 3

Solution:

Key idea. If at least half of the batch has no offer, then the *existing* median salary is 0. Removing the "no-offer" students makes the new average strictly positive, hence it will certainly exceed the (old) median $= 0$. Therefore, we only need to count the years in which the number of "no-offer" students is at least half of the batch size.

Median position. From the dataset for this DI set, the batch size each year is 15. Hence the median is the 8^{th} value in the sorted list. If the number of "no-offer" students in a year is ≥ 8, the median is 0, and so the new average (computed after excluding them) is definitely greater than the existing median.

Apply to the table.

Numbers without offers: 2008: 9, 2009: 5, 2010: 20, 2011: 2, 2012: 2, 2013: 4, 2014: 15, 2015: 2.

Years with at least 8 students without offers $\Rightarrow$ 2008, 2010, 2014 $\Rightarrow$ $\boxed{\text{3 years}}$.

Quick Tip

To compare a recalculated average with the *existing* median, check whether the median is forced to 0 by the count of zero entries (here, students without offers). If at least half the entries are 0, the old median is 0 and any positive recomputed average will be larger.

General Knowledge

Q79. Elon Musk is closely associated with:

(A) Google

(B) GM

(C) GD

(D) Tesla

(E) Apple

Correct Answer: (D) Tesla

Solution:
Elon Musk is best known for his leadership role at **Tesla, Inc.**, where he has served as CEO and product architect. Tesla is a pioneering company in the development of electric vehicles, battery energy storage, and clean energy solutions. While Musk has also founded and led other companies (like SpaceX, Neuralink, and The Boring Company), the name most closely and popularly associated with him in the public domain is **Tesla**.

The other options are incorrect:

- (A) Google: Founded by Larry Page and Sergey Brin, not Musk.
- (B) GM: General Motors is a historic American automaker, unrelated to Musk.
- (C) GD: Not relevant here.
- (E) Apple: Founded by Steve Jobs, Steve Wozniak, and Ronald Wayne.

Thus, the correct association is:

$$\boxed{\text{Tesla}}$$

> **Quick Tip**
>
> When answering "closely associated with" type GK questions, always choose the company or entity that is most *publicly and prominently* linked to the individual, even if they have multiple ventures.

Q80. Raspberry Pi is a:

(A) computer sized credit card

(B) former name of iMac

(C) credit card sized dessert

(D) credit card swiping machine

(E) credit card sized computer

Correct Answer: (E) credit card sized computer

Solution:

The **Raspberry Pi** is a series of small, affordable single-board computers developed by the Raspberry Pi Foundation to promote computer science education and experimentation.

- It is roughly the size of a credit card, making it highly portable.
- Despite its size, it functions as a complete computer: it can run operating systems like Linux, supports programming, networking, multimedia, and even robotics projects.
- It was specifically designed to provide low-cost computing to schools and hobbyists, enabling widespread innovation in electronics, IoT, and DIY projects.

Thus, the correct description is a *credit card sized computer*, not a dessert, swiping machine, or anything else.

$$\boxed{\text{Raspberry Pi = Credit card sized computer}}$$

Quick Tip

Remember: Raspberry Pi is a *hardware computer board*, not software or a brand name. Its size makes it ideal for DIY electronics, IoT, and robotics projects.

Q81. Which of the following films is not associated with Christopher Nolan?

(A) Interstellar

(B) Matrix

(C) Memento

(D) Inception

(E) Prestige

Correct Answer: (B) Matrix

Solution:

Step 1: List of Christopher Nolan's films.

Christopher Nolan is associated with films such as: - *Memento* (2000)

- *The Prestige* (2006)

- *Inception* (2010)

- *Interstellar* (2014)

among others like the Batman trilogy and Dunkirk.

Step 2: Identify the odd one.

The film *Matrix* (1999) was directed by Lana and Lilly Wachowski (The Wachowskis), not by Christopher Nolan.

$$\boxed{\text{Matrix is not associated with Christopher Nolan.}}$$

Quick Tip

In GK/Film questions, remembering a director's "signature films" helps in eliminating options quickly. Nolan is strongly linked with sci-fi, time, and psychological thrillers, but not with the *Matrix* series.

Q82. Timbuktu is:

(A) A city in China

(B) A fictional city

(C) A form of expression

(D) A city in Mongolia

(E) A city in Mali

Correct Answer: (E) A city in Mali

Solution:

Timbuktu is a real, historic city located in the West African country of Mali. It is famous for being a center of Islamic scholarship during the 14th–16th centuries and for its ancient manuscripts, universities, and trade significance on the trans-Saharan caravan routes.
The other options are incorrect:
- (A) It is not in China.
- (B) It is not fictional.
- (C) It is not a form of expression.
- (D) It is not in Mongolia.

Timbuktu is correctly identified as $\boxed{\text{a city in Mali}}$.

Quick Tip

Timbuktu is often metaphorically used in English to mean a faraway place, but in reality, it is a historic cultural and trade hub in Mali.

Q83. RuPay is related to:

(A) Rural Payment of wages office of India

(B) National association for facilitation of Rural Payments

(C) National Payments Corporation of India

(D) Russia Pay, a Russian competitor of Paypal

(E) Rustic Poetry, an Annual Festival held in Jaipur, India

Correct Answer: (C) National Payments Corporation of India

Solution:
RuPay is an **Indian domestic card scheme** launched by the **National Payments Corporation of India (NPCI)**. It was introduced to promote digital payments and reduce dependence on international card schemes like Visa and MasterCard. RuPay cards are used for ATMs, Point-of-Sale transactions, and online purchases across India.
Why not the others? - (A) and (B): Misleading expansions — RuPay is not limited to rural payments.

- (D): "Russia Pay" is unrelated; RuPay is India's initiative.

- (E): Rustic Poetry is irrelevant.

Thus, RuPay is directly associated with NPCI.

$$\boxed{\text{National Payments Corporation of India (NPCI)}}$$

Quick Tip

Remember: **RuPay = Rupee + Payment**, an Indian domestic card network created by NPCI to strengthen indigenous payment systems.

Q84. Which Sea lies to the west of Yemen and Saudi Arabia?

(A) The Gulf of Aden

(B) Gulf of Oman

(C) Red Sea

(D) Black Sea

(E) Persian Gulf

Correct Answer: (C) Red Sea

Solution:

Geographically:

- The **Red Sea** lies to the west of both Saudi Arabia and Yemen, separating them from Africa (Sudan and Eritrea).
- The **Gulf of Aden** lies to the south of Yemen, connecting the Arabian Sea with the Red Sea through the Bab el-Mandeb Strait.
- The **Gulf of Oman** lies to the east of Oman, connecting to the Arabian Sea and Persian Gulf — not to the west of Saudi Arabia or Yemen.
- The **Black Sea** is far away, in Eastern Europe, and irrelevant here.

- The **Persian Gulf** lies to the east of Saudi Arabia, not the west.

Therefore, the body of water directly to the west of Yemen and Saudi Arabia is the **Red Sea**.

$$\boxed{\text{Red Sea}}$$

Quick Tip

Always visualize the Arabian Peninsula: west = Red Sea, south = Gulf of Aden, east = Persian Gulf / Gulf of Oman.

Q85. In the budget Estimates of 2015-2016:

(A) Non-planned expenditure was more than revenue receipts

(B) Revenue receipts were higher than non-planned expenditure

(C) Planned expenditure was higher than non-planned expenditure

(D) Fiscal Deficit was lower than Revenue deficit

(E) Total expenditure was 20% higher than total Receipts

Correct Answer: (B) Revenue receipts were higher than non-planned expenditure

Solution:

Step 1: Recall the 2015–16 Union Budget structure.

The Budget Estimates of 2015–16 highlighted the government's emphasis on fiscal consolidation and expenditure management. Expenditure was divided into "Planned" and "Non-planned," while receipts were categorized as revenue and capital receipts.

Step 2: Compare revenue receipts and non-planned expenditure.

- Revenue Receipts in 2015–16 (Budget Estimates) $\approx$ |11.4 lakh crore.
- Non-planned expenditure $\approx$ |11.2 lakh crore.

Clearly, revenue receipts exceeded non-planned expenditure.

Step 3: Eliminate incorrect options.

- (A) Incorrect: Non-planned expenditure was *not* more than revenue receipts.

- (C) Incorrect: Planned expenditure was significantly lower than non-planned.
- (D) Incorrect: Fiscal deficit is *always* higher than revenue deficit (as fiscal deficit includes revenue deficit + capital deficit).
- (E) Incorrect: Total expenditure was not 20% higher than total receipts.

$$\boxed{\text{Revenue receipts were higher than non-planned expenditure.}}$$

Quick Tip

When solving budget-based MCQs, focus on remembering the approximate relative magnitudes (e.g., Revenue Receipts vs Expenditures, Fiscal vs Revenue Deficit). Even if exact numbers are forgotten, comparisons are enough to pick the right option.

Q86. Consider the following statements: 1. Sinai is a part of Egypt.
2. Sinai is in Asia.
3. Sinai is in Africa.
4. Russian plane was downed in Sinai in November 2015.
Which of the above statements are true?

(A) 1 and 3 only
(B) 1, 2 and 4 only
(C) 1, 3 and 4 only
(D) 2 and 4 only
(E) 3 and 4 only

Correct Answer: (B) 1, 2 and 4 only

Solution:
Statement 1: True. Sinai Peninsula is geographically part of Egypt.
Statement 2: True. The Sinai Peninsula lies in Asia (it forms the land bridge between Africa and Asia, east of the Suez Canal).

Statement 3: False. Although Egypt as a country is in Africa, the Sinai Peninsula itself lies entirely in Asia.
Statement 4: True. A Russian Metrojet plane (Flight 9268) was downed in Sinai in November 2015.

Hence, the true statements are 1, 2, and 4 only.

$$\text{Correct set of true statements} = \boxed{1,\ 2,\ 4}$$

Quick Tip

Remember: The Sinai Peninsula is the only part of Egypt in Asia, while the rest of Egypt lies in Africa. This is a common exam trap.

Q87. In 2015, which country was ranked number one as "best place to do business in"?

(A) U.S.A
(B) New Zealand
(C) Singapore
(D) Hong Kong
(E) India

Correct Answer: (C) Singapore

Solution:
According to the **World Bank's Ease of Doing Business Index 2015**, **Singapore** was ranked the number one country in the world for ease of doing business. The country has consistently maintained top positions in global rankings due to:
- Transparent and efficient regulations,
- Strong legal and financial systems,
- Excellent infrastructure,
- Business-friendly tax policies.
Other options: - (A) U.S.A: Ranked lower due to regulatory complexity.

- (B) New Zealand: Was close but ranked second in 2015.

- (D) Hong Kong: Also in the top rankings, but not number one in 2015.

- (E) India: Ranked much lower in 2015.

Thus, the correct choice is:

$$\boxed{\text{Singapore}}$$

Quick Tip

For questions on "Ease of Doing Business," recall that Singapore and New Zealand have frequently been at the top, with Singapore ranked #1 in 2015.

Q88. Perumal Murugan is a(n):

(A) Writer

(B) Painter

(C) Journalist

(D) Actor

(E) Director

Correct Answer: (A) Writer

Solution:

Perumal Murugan is a renowned **Indian author and novelist**, writing primarily in Tamil.

- He is celebrated for his realistic portrayal of rural Tamil Nadu, caste issues, and social traditions.
- His well-known works include *One Part Woman (Madhorubhagan)*, *Seasons of the Palm*, and *Poonachi*.
- He has received critical acclaim and several awards, including recognition by the Sahitya Akademi.
- He is not associated with painting, acting, directing, or journalism — his primary and acclaimed identity is as a writer.

Hence, the correct answer is:

$$\boxed{\text{Writer}}$$

Quick Tip

Perumal Murugan is best remembered for novels that explore caste, identity, and rural life in Tamil Nadu. Always connect him with *literature and writing*.

Q89. In percentage terms, which Indian state has the highest forest cover?

(A) Madhya Pradesh

(B) Harit Pradesh

(C) Nagaland

(D) Arunachal Pradesh

(E) Jammu and Kashmir

Correct Answer: (D) Arunachal Pradesh

Solution:

Step 1: Distinguish between absolute area and percentage cover.

- Madhya Pradesh has the *largest absolute forest area* in India (over 77,000 sq. km).

- But the question asks for *percentage terms* (forest cover as a fraction of total geographical area).

Step 2: States with highest forest % cover.

According to India State of Forest Report (ISFR):

- Arunachal Pradesh: $\sim$79% of its total geographical area under forest cover.

- Other Northeastern states like Mizoram, Nagaland, and Manipur also have high percentages ($> 70\%$).

- Madhya Pradesh, despite having the maximum area, has only about 25–28% of its land under forests.

Step 3: Conclusion.

Hence, the correct answer (in percentage terms) is *Arunachal Pradesh*, not Madhya Pradesh.

$$\boxed{\text{Arunachal Pradesh has the highest forest cover percentage.}}$$

Quick Tip

Remember: - Largest *absolute area* of forest = Madhya Pradesh. - Highest *percentage of area* under forest cover = Arunachal Pradesh (Northeast states dominate in

---

Q90. Meghnad Saha was a famous:

(A) Historian

(B) Economist

(C) Painter

(D) Novelist

(E) Physicist

Correct Answer: (E) Physicist

Solution:

Meghnad Saha (1893–1956) was a renowned Indian **physicist**. He is best known for the **Saha ionization equation**, which explains the physical and chemical conditions of stars by relating the ionization state of an element to temperature and pressure.

His contributions laid the foundation of modern astrophysics, particularly in understanding stellar atmospheres and spectra.

He also played a major role in scientific policy-making in independent India.

$$\boxed{\text{Meghnad Saha was a famous } \boxed{\text{Physicist}}.}$$

Quick Tip

Remember: The **Saha ionization equation** is a landmark in astrophysics, linking physics with astronomy. Meghnad Saha's name is always associated with stellar spectra.

Q91. Read the following statements:

1. Russia supports President Assad of Syria.
2. Saudi Arabia opposes President Assad of Syria.
3. Iran supports President Assad.
4. The United President Assad.

Which of the above statements are true?

(A) 1 and 2 only

(B) 1, 2 and 3 only

(C) 1, 2, 3, and 4

(D) 2 and 3 only

(E) 2, 3 and 4 only

Correct Answer: (B) 1, 2 and 3 only

Solution:

Step 1: Check statement 1.

Russia has been a long-time ally of Syria and has consistently supported President Bashar al-Assad militarily and diplomatically.

$\Rightarrow$ Statement 1 is **true**.

Step 2: Check statement 2.

Saudi Arabia has historically opposed Assad, supporting opposition groups instead.

$\Rightarrow$ Statement 2 is **true**.

Step 3: Check statement 3.

Iran is one of Assad's strongest allies, providing financial and military support.

$\Rightarrow$ Statement 3 is **true**.

Step 4: Check statement 4.

"The United President Assad" is factually incorrect and meaningless. Likely a misprint meant to refer to the "United States," which opposes Assad. As written, it is **false**.

Thus, the true statements are 1, 2, and 3 only.

$\boxed{\text{Answer: B}}$

Quick Tip

When evaluating GK/current affairs statements, eliminate those that are factually inconsistent or misprinted. Focus on international alignments that are well established — Russia and Iran support Assad, while Saudi Arabia and the US oppose him.

Q92. Angus Deaton is a famous:

(A) Economist

(B) Physicist

(C) Writer

(D) Historian

(E) Painter

Correct Answer: (A) Economist

Solution:

Sir Angus Deaton is a renowned **British-American economist**.

- He is best known for his work on consumption, poverty, and welfare.
- He was awarded the **2015 Nobel Prize in Economics** for his analysis of consumption, poverty, and welfare, especially in relation to household surveys and development economics.
- His research has significantly influenced public policy, particularly in understanding living standards and inequality.
- He is not a physicist, writer, historian, or painter — his reputation and recognition are specifically in the field of economics.

Thus, the correct answer is:

$$\boxed{\text{Economist}}$$

Quick Tip

Link Angus Deaton with the Nobel Prize in Economics (2015) and his influential work on poverty and consumption. This avoids confusion with other professions.

Q93. Which of the following is not a conglomerate?

(A) Reliance

(B) ITC

(C) TCS

(D) Adani

(E) Murugappa

Correct Answer: (C) TCS

Solution:

Step 1: Define a conglomerate.

A *conglomerate* is a large corporation that operates in multiple, diverse industries under one corporate group. Examples include Reliance (energy, telecom, retail), ITC (FMCG, hotels, paper, agri), Adani (ports, power, infrastructure), and Murugappa (financial services, engineering, agriculture).

Step 2: Examine TCS.

TCS (*Tata Consultancy Services*) is primarily an IT services and consulting company. While it is part of the larger Tata Group (which itself is a conglomerate), TCS *as a standalone company* is not a conglomerate—it is focused on IT services only.

Step 3: Eliminate others.

- Reliance: Conglomerate (Telecom, Petrochemicals, Retail, Media, etc.)

- ITC: Conglomerate (Cigarettes, FMCG, Hotels, Paper, Agri-business, etc.)

- Adani: Conglomerate (Energy, Ports, Mining, Cement, Airports, etc.)

- Murugappa: Conglomerate (Financial services, Engineering, Cycles, Fertilizers, etc.)

$\boxed{\text{TCS is not a conglomerate.}}$

Quick Tip

Be careful to distinguish between a *group* (like Tata Group) and a *company* (like TCS). TCS is a specialized IT company, not a conglomerate, while Tata Group overall is.

Q94. Plasmodium Vivax causes:

(A) Typhoid

(B) Malaria

(C) AIDS

(D) Syphilis

(E) Bird Flu

Correct Answer: (B) Malaria

Solution:

Plasmodium vivax is one of the five species of the parasite **Plasmodium** that cause **malaria in humans**. It is transmitted by the bite of an infected female *Anopheles* mosquito.

Key details:

- Plasmodium vivax is the most widespread human malaria parasite.
- It causes **benign tertian malaria**, characterized by fever recurring every 48 hours.
- Unlike Plasmodium falciparum, which is more lethal, P. vivax can remain dormant in the liver (as *hypnozoites*), leading to relapses weeks or months later.

Other options are incorrect: - Typhoid $\rightarrow$ caused by *Salmonella typhi*. - AIDS $\rightarrow$ caused by HIV virus. - Syphilis $\rightarrow$ caused by *Treponema pallidum*. - Bird Flu $\rightarrow$ caused by Influenza virus (H5N1, etc.).

Plasmodium vivax infection leads to $\boxed{\text{Malaria}}$.

Quick Tip

Remember: Malaria is caused by different Plasmodium species — P. falciparum (deadliest), P. vivax (most widespread), P. malariae, P. ovale, and P. knowlesi.

Q95. Pilatus PC-7 is a(n):

(A) frigate

(B) aircraft carrier

(C) ship

(D) submarine

(E) aircraft

Correct Answer: (E) aircraft

Solution:

The **Pilatus PC-7** is a **turboprop trainer aircraft** designed and manufactured by Pilatus Aircraft of Switzerland.

It is widely used by air forces across the world for pilot training.

The aircraft features a single engine, tandem seating for instructor and trainee, and is recognized for its reliability and cost-effectiveness.

India also inducted the Pilatus PC-7 Mk II into the Indian Air Force as a basic trainer aircraft.

The other options are incorrect because:

- (A) Frigate: A warship, not relevant here.

- (B) Aircraft carrier: A large naval ship carrying fighter planes.

- (C) Ship: General water vessel, not applicable.

- (D) Submarine: An underwater vessel.

Thus, the correct choice is:

$$\boxed{\text{Aircraft}}$$

Quick Tip

Remember: The Pilatus PC-7 is a famous basic trainer aircraft from Switzerland, used worldwide, including by the Indian Air Force for pilot training.

Q96. Which of the following commodity is not rightly matched with its country, if 'right match' is considered as one of the top five producers of that commodity?

(A) Oat : Russia

(B) Wheat : United States

(C) Apple : China

(D) Carrot : India

(E) Rice : Indonesia

Correct Answer: (D) Carrot : India

Solution:

Step 1: Verify each commodity-country pair against world production rankings.

- **Oats: Russia** — Russia is consistently among the world's top producers of oats. $\Rightarrow$ Correct match.
- **Wheat: United States** — The U.S. is one of the top global wheat producers (after China, India, Russia). $\Rightarrow$ Correct match.
- **Apple: China** — China is the largest producer of apples in the world. $\Rightarrow$ Correct match.
- **Carrot: India** — India is a major producer of vegetables, but it is not among the top five producers of carrots (China, Uzbekistan, Russia, USA, Ukraine dominate). $\Rightarrow$ Incorrect match.
- **Rice: Indonesia** — Indonesia is among the top five producers of rice (after China, India, Bangladesh, and others). $\Rightarrow$ Correct match.

Step 2: Conclusion.

The only incorrect (not rightly matched) pair is **Carrot : India**.

$$\boxed{\text{Answer: D}}$$

Quick Tip

For "top producer" type GK questions, always check FAO statistics: China and India dominate many crops, but specific items like carrots have different top producers.

Q97. Which of the following countries has the lowest External Debt?

(A) United Kingdom

(B) France

(C) USA

(D) India

(E) China

Correct Answer: (D) India

Solution:

Step 1: Understanding external debt.

External debt refers to the portion of a country's debt borrowed from foreign lenders, including commercial banks, governments, or international institutions. It is usually expressed in absolute terms or as a percentage of GDP.

Step 2: Compare the countries listed.

- The **United Kingdom**, **USA**, and **France** are advanced economies with highly globalized financial systems and very large external debts (measured in trillions of dollars).
- **China** also has a considerable level of external debt due to its global trade links and financial commitments.
- **India**, however, has a comparatively much lower external debt, both in absolute terms and as a percentage of GDP, because its external borrowing is relatively conservative compared to the Western economies listed.

Step 3: Conclusion.

Among the listed options, **India** has the lowest external debt.

$$\boxed{\text{India}}$$

Quick Tip

When comparing external debt, remember: developed economies like the USA, UK, and France usually top the charts with the highest external debt, while India's external borrowing remains relatively modest.

Q98. Which of the following city is not related to the automobile industry?

(A) Dharwad

(B) Lucknow

(C) Jamshedpur

(D) Pithampur

(E) Itanagar

Correct Answer: (E) Itanagar

Solution:

Step 1: Check automobile industry hubs.

- **Dharwad (Karnataka):** Known for Tata Motors and Toyota plants nearby (Hubli–Dharwad belt has automobile manufacturing).

- **Lucknow (Uttar Pradesh):** Tata Motors has a significant bus and truck manufacturing unit in Lucknow.

- **Jamshedpur (Jharkhand):** Famous as Tata Motors' hub for trucks, buses, and heavy vehicles.

- **Pithampur (Madhya Pradesh):** Called the "Detroit of India (Central region)," with several automobile industries including Eicher, Volvo, and Force Motors.

Step 2: Eliminate the odd one.

- **Itanagar (Arunachal Pradesh):** Capital of Arunachal Pradesh, but not known for any automobile industry hub.

$\boxed{\text{Itanagar is not related to the automobile industry.}}$

Quick Tip

Remember key Indian auto hubs: Pune, Chennai, Gurugram–Manesar, Sanand, Lucknow, Jamshedpur, Pithampur, Dharwad. Capitals in Northeast states like Itanagar are not associated with this sector.

Q99. Which of the following is the closest country to Antarctica?

(A) Argentina
(B) Brazil
(C) South Africa
(D) Australia
(E) New Zealand

Correct Answer: (A) Argentina

Solution:
The southernmost tip of South America, particularly from Argentina (Tierra del Fuego and Cape Horn), is the **closest landmass to Antarctica**.
- The distance across the Drake Passage from Argentina's southern tip to the Antarctic Peninsula is about **1000 km (620 miles)**.
- This is shorter compared to distances from:
- South Africa (4000 km),
- Australia (2600 km),
- New Zealand (2200 km),
- Brazil (much farther north in South America).
Thus, Argentina is geographically the nearest country to Antarctica.

The closest country to Antarctica is $\boxed{\text{Argentina}}$.

Quick Tip

Remember: The shortest sea route to Antarctica is via the Drake Passage from Argentina to the Antarctic Peninsula.

Q100. The "New Horizon" was in news in 2015. It refers to:

(A) Award winning book

(B) Business Consulting Company

(C) Mission to Pluto

(D) Business Magazine

(E) Award winning Oscar film

Correct Answer: (C) Mission to Pluto

Solution:

Step 1: Identify New Horizons.

"New Horizons" is a NASA space probe launched in 2006 under the **New Frontiers program**.

It was designed to perform a flyby study of Pluto, its moons, and later objects in the Kuiper Belt.

Step 2: Why it was in the news in 2015.

On July 14, 2015, New Horizons successfully made its closest approach to Pluto, sending back the first detailed images and scientific data of the dwarf planet and its system. This was a historic moment, as it marked humanity's first close encounter with Pluto.

Step 3: Eliminate wrong options.

(A) Not a book, (B) Not a company, (D) Not a magazine, (E) Not a film.

Thus, the correct reference is:

$$\boxed{\text{Mission to Pluto}}$$

Quick Tip

Remember: "New Horizons" = NASA's Pluto–Kuiper Belt mission (first-ever flyby of Pluto in 2015).

Q101. The islands that are under dispute of ownership between Japan and China are:

(A) Osaka Islands

(B) Muntheetu Islands

(C) South China Islands

(D) Senkaku Islands

(E) None of the above

Correct Answer: (D) Senkaku Islands

Solution:

Step 1: Identify the disputed islands.

The **Senkaku Islands** (called **Diaoyu Islands** in China) are a group of uninhabited islands in the East China Sea. Both Japan and China (and Taiwan) claim sovereignty over them.

Step 2: Eliminate incorrect options.

(A) Osaka Islands — Osaka is a metropolitan prefecture in Japan, not disputed islands.

(B) Muntheetu Islands — Not relevant in this context.

(C) South China Islands — refers broadly to the South China Sea disputes, but those are between China, Vietnam, Philippines, etc., not Japan.

(E) None of the above — incorrect since Senkaku is correct.

Step 3: Confirm.

The well-known territorial dispute is indeed over the **Senkaku/Diaoyu Islands**.

$$\boxed{\text{Senkaku Islands}}$$

Quick Tip

Remember: Japan–China dispute = **Senkaku/Diaoyu Islands**. South China Sea disputes mostly involve China, Vietnam, Philippines, Malaysia, Brunei.

Q102. The Inuit Paradox:

(A) is a place in the arctic circle near Greenland.
(B) is that the Inuits eat a lot of fat and hardly any fruits and are still very healthy.
(C) is that the Inuits eat anything that moves but spare the reindeer.
(D) is that the inuits have very little exposure to the Sun but suffer no deficiency from Vitamin D.
(E) is a Glacier that looks like a circle from a distance but is actually a rectangle.

Correct Answer: (B) is that the Inuits eat a lot of fat and hardly any fruits and are still very healthy.

Solution:
The phrase **"Inuit Paradox"** (often discussed in nutrition writing) refers to observations that traditional Inuit populations maintained good health *despite* diets extremely high in animal fat and protein and very low in fruits and vegetables.

- Their traditional diet featured marine mammals and fish rich in omega-3 fatty acids, with minimal carbohydrates or plant fibers.
- Historically, low rates of cardiovascular disease were reported in these groups, which seemed paradoxical given then-prevailing dietary guidelines that associated high fat intake with heart disease.
- Hence the "paradox" = *high-fat, low-produce diet yet good health outcomes* in traditional settings.

Other options describe places, animals, sunlight/Vitamin D claims, or glacial shapes—none capture the nutritional paradox.

Inuit Paradox = healthy outcomes on a very high-fat, low-produce traditional diet.

Quick Tip

When you see "paradox" in social science or nutrition, look for a result that contradicts common expectations (here, high-fat diet vs. reported heart health).

Q103. Takata Corporation was in the news recently because it:

(A) was involved in airbag recalls.

(B) was the chief aide to Shinzo Abe who promised to revive the economy.

(C) was the Commander in Chief of the Japanese army accused by critics of mongering.

(D) was the second largest seller of phones in China.

(E) was the name of a band that fuses Japanese and American music.

Correct Answer: (A) was involved in airbag recalls.

Solution:

Step 1: Identify Takata Corporation.

Takata Corporation was a Japanese automotive parts company best known for manufacturing safety components like seatbelts and airbags.

Step 2: Reason for being in the news.

The company was involved in a massive global scandal concerning defective airbags. These airbags, supplied to several major car manufacturers (Honda, Toyota, BMW, Ford, etc.), were found to rupture and explode with excessive force, leading to deaths and injuries.

Step 3: Global impact.

- It became one of the largest automotive recalls in history (tens of millions of cars recalled worldwide). - The issue eventually forced Takata into bankruptcy in 2017 due to liabilities and settlements.

$\boxed{\text{Takata Corporation was in the news due to defective airbag recalls.}}$

Quick Tip

In current affairs, whenever a company is mentioned, check if it is linked to a major *scandal, merger, or recall*. For Takata, always associate it with the airbag recall controversy.
