

XAT 2020 Question Paper with Solutions

Time Allowed :3 Hours	Maximum Marks :100	Total Questions :100
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. Each right question will carry 1 mark and each wrong question will carry -0.25 marks
2. In case of 8 consecutive unanswered questions, 0.10 marks will be deducted
3. Part 1 of the XAT question paper is to be solved in 165 minutes.
4. Verbal and Logical Ability: 26 questions
5. Decision Making: 21 questions
6. Quantitative Ability & Data Interpretation: 28 questions
7. Part 2 of the XAT question paper is to be solved in 15 minutes
8. General Knowledge Section: There was no negative marking for incorrect or unattempted questions in this section.

English

Q1. A map is a useful metaphor for our brain when talking about ____ because at its most basic level our brain ____ to be our atlas of sorts, a system of routes ____ to navigate us toward just one destination: staying alive!

From the options below, choose the set that MOST appropriately fills up the blanks.

- (A) Perception, evolved, designed
- (B) Understanding, progressed, shaped
- (C) Connections, changed, molded
- (D) Design, developed, shaped
- (E) Comprehension, metamorphosed, designed

Correct Answer: (A) Perception, evolved, designed

Solution:

Step 1: Analyze the context.

The passage compares the brain to a map — “an atlas of sorts.” The focus is on the brain’s fundamental ability to interpret the world (linked to **perception**), its biological history (**evolved**),

and the structured way it works (**designed**).

Step 2: Test Option (A).

“Perception” fits because maps metaphorically represent how we perceive the world.

“Evolved” fits as the brain has evolved over time as our survival tool.

“Designed” completes the sentence logically since routes are systematically designed to reach destinations.

This option makes the sentence grammatically and conceptually sound.

Step 3: Eliminate alternatives.

(B) “Understanding, progressed, shaped” — ‘progressed’ is weak; ‘understanding’ is too abstract.

(C) “Connections, changed, molded” — awkward and unscientific phrasing.

(D) “Design, developed, shaped” — repetition (‘design’ and ‘shaped’) feels clumsy.

(E) “Comprehension, metamorphosed, designed” — ‘metamorphosed’ is too poetic and contextually odd.

Therefore: Option (A) clearly conveys the intended metaphor.

Perception, evolved, designed

Quick Tip

In fill-in-the-blank RC questions, always check for **conceptual fit** (meaning), **grammatical flow**, and **tone consistency**. Words like “metamorphosed” may sound fancy but often break logical flow.

Q2. _____, medicine has been operated by trial and error, in other words, _____. We know by now that there can be entirely _____ connections between symptoms and treatment, and some medications succeed in medical trials for mere random reasons.

From the options below, choose the one that MOST appropriately fills up the blanks.

- (A) Formerly, randomly, accidental
- (B) Traditionally, analytically, casual
- (C) Initially, statistically, unexpected
- (D) Periodically, logically, arbitrary
- (E) Historically, arbitrarily, fortuitous

Correct Answer: (E) Historically, arbitrarily, fortuitous

Solution:

Step 1: Understand the context.

The passage states that medicine has long relied on *trial and error*. This implies that the process was not scientific in its beginnings, but rather uncertain and chance-driven. Hence, the words must align with randomness and unpredictability.

Step 2: Evaluate Option (E).

“Historically” = in the past, which fits the time-frame reference.

“Arbitrarily” = without logical reasoning, matching the idea of trial and error.

“Fortuitous” = happening by chance, which matches the final idea that some successes occur due to random reasons.

Thus, option (E) flows naturally.

Step 3: Eliminate distractors.

(A) “Formerly, randomly, accidental” — although close, ‘randomly’ and ‘accidental’ are repetitive and lack sophistication.

(B) “Traditionally, analytically, casual” — ‘analytically’ contradicts trial-and-error.

(C) “Initially, statistically, unexpected” — ‘statistically’ implies data-driven methods, which doesn’t match trial-and-error.

(D) “Periodically, logically, arbitrary” — ‘logically’ directly opposes randomness.

Therefore: Option (E) provides the most precise and contextually consistent set.

Historically, arbitrarily, fortuitous

Quick Tip

In vocabulary-in-context questions, look for words that maintain **semantic consistency**. If the sentence emphasizes randomness or chance, words like *arbitrary* and *fortuitous* will fit better than logical or analytical terms.

Q3. Read the following sentences and answer the question that follows:

1. I have good knowledge of German.
2. Except for Rajiv, everybody was there.
3. Whole Delhi was celebrating Independence Day.
4. Neither the dog, nor is the cat responsible for this mess.
5. He knows to swim.
6. I look forward to seeing you.

Which of the above are grammatically INCORRECT?

- (A) 2,4,6
- (B) 4,5,6
- (C) 1,3,5
- (D) 3,5,6

(E) 1,2,5

Correct Answer: (C) 1,3,5

Solution:

Sentence 1: "I have good knowledge of German."

Incorrect. The natural collocation in English is "a good knowledge of German" (the article *a* is necessary).

Sentence 2: "Except for Rajiv, everybody was there."

Correct. The preposition "except for" is properly used here.

Sentence 3: "Whole Delhi was celebrating Independence Day."

Incorrect. The correct phrase is "The whole of Delhi was celebrating Independence Day." The determiner "the" and preposition "of" are required.

Sentence 4: "Neither the dog, nor is the cat responsible for this mess."

Correct. The sentence is acceptable with inversion, though the more standard form is "Neither the dog nor the cat is responsible." Still, it is not considered grammatically wrong.

Sentence 5: "He knows to swim."

Incorrect. The correct expression is "He knows how to swim."

Sentence 6: "I look forward to seeing you."

Correct. "Look forward to" must be followed by a gerund (-ing form). This is perfect.

Therefore: The grammatically incorrect sentences are 1, 3, and 5.

1, 3, 5

Quick Tip

When checking grammar-based MCQs, always test for **collocations, determiners, and idiomatic expressions**. Errors often lie in missing articles ("a good knowledge"), prepositions ("the whole of"), or verb forms ("knows how to swim").

Q4. Which of the following is a grammatically CORRECT sentence?

- (A) You had better told her everything, or else you will lose a friend.
- (B) You had better told her everything, or else you would lose a friend.
- (C) You had better tell her everything, or else you will lose a friend.
- (D) You better had tell her everything, or else you will lose a friend.
- (E) You better had tell her everything, or else you would lose a friend.

Correct Answer: (C) You had better tell her everything, or else you will lose a friend.

Solution:

Step 1: Understand the construction “had better.”

The phrase “had better” is a fixed modal-like expression used to give strong advice or warnings. Importantly, it is always followed by the **base form of the verb**, not past tense or participle.

Step 2: Test each option.

(A) “had better told” → incorrect, since “told” (past tense/participle) cannot follow “had better.”

(B) Same error: “had better told” is grammatically wrong.

(C) “had better tell” → correct usage: “had better + base verb.” The clause “or else you will lose a friend” also matches the conditional warning.

(D) “You better had tell” → incorrect word order; not a valid English structure.

(E) Same as (D), incorrect inversion.

Step 3: Confirm correctness.

Option (C) follows the standard grammatical rule and conveys the intended meaning properly.

Therefore: The correct sentence is:

You had better tell her everything, or else you will lose a friend.

Quick Tip

Remember: The fixed phrase is **“had better + base verb”**. Do not change “had” to “have” or follow with past tense forms. Example: “You had better study” (not “studied” or “have studied”).

Instructions

Read the passage below and answer the 3 associated questions:

Once, during a concert of cathedral organ music, as I sat getting gooseflesh amid that tsunami of sound, I was struck with a thought: for a medieval peasant, this must have been the loudest human-made sound they ever experienced, awe-inspiring in now-unimaginable ways. No wonder they signed up for the religion being proffered. And now we are constantly pummeled with sounds that dwarf quaint organs. Once, hunter-gatherers might chance upon honey from a beehive and thus briefly satisfy a hardwired food craving. And now we have hundreds of carefully designed commercial foods that supply a burst of sensation unmatched by some lowly natural food. Once, we had lives that, amid considerable privation, also offered numerous subtle, hard-won pleasures. And now we have drugs that

cause spasms of pleasure and dopamine release a thousandfold higher than anything stimulated in our old drug-free world.

An emptiness comes from this combination of over-the-top nonnatural sources of reward and the inevitability of habituation; this is because unnaturally strong explosions of synthetic experience and sensation and pleasure evoke unnaturally strong degrees of habituation. This has two consequences. First, soon we barely notice the fleeting whispers of pleasure caused by leaves in autumn, or by the lingering glance of the right person, or by the promise of reward following a difficult, worthy task. And the other consequence is that we eventually habituate to even those artificial deluges of intensity. If we were designed by engineers, as we consumed more, we'd desire less. But our frequent human tragedy is that the more we consume, the hungrier we get. More and faster and stronger. What was an unexpected pleasure yesterday is what we feel entitled to today, and what won't be enough tomorrow.

Q5. Which of the following options BEST reflects the author's understanding of human perception of pleasure?

- (A) Pleasure comes from whatever we are exposed to for the first time
- (B) Pleasure comes from what we are deprived of
- (C) Pleasure comes from what appears to be a valuable discovery or invention
- (D) Pleasure comes from what is perceived to be extraordinary
- (E) Pleasure comes from what we are accustomed to

Correct Answer: (D) Pleasure comes from what is perceived to be extraordinary

Solution:

Step 1: Identify the author's key claim.

The passage emphasizes habituation — pleasures lose intensity once repeated, because what was once surprising becomes ordinary.

Step 2: Apply this to options.

The statement “What was an unexpected pleasure yesterday is what we feel entitled to today, and what won't be enough tomorrow” directly implies that only the **extraordinary and exceptional** brings pleasure.

Step 3: Eliminate alternatives.

- (A) First exposure → too narrow, doesn't capture “extraordinary.”
- (B) Deprivation → not discussed.
- (C) Discovery/invention → close, but the emphasis is on extraordinariness, not innovation.
- (E) Accustomed to → contradicts; being accustomed kills pleasure.

Therefore: The answer is (D).

Pleasure comes from what is perceived to be extraordinary

Quick Tip

When analyzing author's stance, look for lines that capture the "essence" of the passage. Repetition leads to dullness, so only the extraordinary is pleasurable.

Q6. Going by the author, which of the following options BEST answers the question "how can one sustain the pleasure derived from any experience?"

- (A) Training to appreciate sweet whispers and fleeting moments of joy to sustain pleasure
- (B) Periodic displeasure with synthetic experiences leads to sustaining pleasure
- (C) The harder to replicate, the more sustainable the pleasure from that experience
- (D) The closer the experience is to nature, the more sustainable it is
- (E) Awareness of a habituation moment helps sustain pleasure

Correct Answer: (C) The harder to replicate, the more sustainable the pleasure from that experience

Solution:

Step 1: Recall the author's argument.

The passage states that synthetic, easily available pleasures quickly lose their charm. Sustainable joy requires sources that are rare and difficult to replicate.

Step 2: Match with options.

(C) fits perfectly: if a pleasure is hard to replicate, habituation occurs slower, hence it sustains longer.

Step 3: Eliminate alternatives.

- (A) Not explicitly supported — author does not say "training" helps.
- (B) Wrong — displeasure isn't discussed.
- (D) Nature isn't given as the sole answer.
- (E) Awareness alone doesn't prevent habituation.

Therefore: The answer is (C).

The harder to replicate, the more sustainable the pleasure from that experience

Quick Tip

For "sustainability of pleasure," focus on rarity and effort. Easily accessible joys fade quickly, while difficult-to-replicate ones endure.

Q7. Which of the following options BEST describes “emptiness” as described in the passage?

- (A) A feeling, evoked by the carefully designed commercial foods, alluring us to them
- (B) A feeling of absence of sources of pleasure when extant sources are in abundance
- (C) Yearning for newer sources of pleasure when extant sources are in abundance
- (D) A feeling of weariness around extant sources of pleasure that are in abundance
- (E) The inevitability of habituation that one gets from repeated consumption of man-made foods or drugs

Correct Answer: (B) A feeling of absence of sources of pleasure when extant sources are in abundance

Solution:

Step 1: Re-read the relevant part.

The passage mentions that strong artificial pleasures and repeated exposures create a sense of emptiness. Even though sources are abundant, we feel deprived.

Step 2: Apply to options.

(B) captures it precisely — despite abundance, there is an absence of pleasure.

Step 3: Eliminate alternatives.

- (A) Just describes allure, not emptiness.
- (C) Yearning for “newer” → too specific, not emphasized.
- (D) Weariness → partial truth, but not complete.
- (E) Habituation explains the mechanism, but emptiness refers to the *feeling*, not the process.

Therefore: The answer is (B).

A feeling of absence of sources of pleasure when extant sources are in abundance
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Quick Tip

For abstract terms like “emptiness,” focus on the emotional effect described (feeling of deprivation) rather than the underlying cause (habituation).

Q8. “People who work in law, hotel and food services, and technology were found the most likely to skip breakfast daily, according to a recent study. As for people who do eat breakfast and prefer a savoury type (like an egg), the study found they tend to make more money, be night owls and prefer cats over dogs. If you prefer a sweet breakfast like a donut you tend to be a morning person, like romcoms and are a dog person.”

Which of the following can be **BEST** inferred based on the above paragraph?

- (A) IT professionals, who eat eggs for breakfast, are more likely to make more money than their counterparts who eat donuts for breakfast.
- (B) Lawyers, who eat savory breakfast daily, make more money than those lawyers who have early breakfast daily.
- (C) Hoteliers who eat regular breakfast are more likely to make more money than those who watch romcoms regularly.
- (D) Among regular breakfast eaters, early risers have more sugar in their breakfast than late risers.
- (E) A preference for cats as pets over dogs, usually, is a result of eating eggs for breakfast daily.

Correct Answer: (A) IT professionals, who eat eggs for breakfast, are more likely to make more money than their counterparts who eat donuts for breakfast.

Solution:

Step 1: Recall the passage.

The passage notes that professionals in law, hotel, and technology often skip breakfast. However, among those who do eat breakfast, people preferring a savoury type (like eggs) tend to earn more money compared to those preferring a sweet breakfast (like donuts).

Step 2: Apply to options.

- (A) Correct — directly supported by the text: egg-eaters earn more than donut-eaters.
- (B) Incorrect — there is no direct comparison among lawyers based on “early” breakfast.
- (C) Incorrect — money and romcoms are unrelated.
- (D) Incorrect — no evidence about sugar and early risers.
- (E) Incorrect — cat/dog preference is an association, not a causal result of eating eggs.

Therefore: The inference is option (A).

IT professionals who eat eggs for breakfast earn more than donut-eaters

Quick Tip

In inference-based RC questions, check whether the option is a **direct consequence** or **clear link** from the passage. Avoid options that bring in extra assumptions.

Q9. Read the poem below and answer the 2 associated questions: Some say the world will end in fire, Some say in ice. From what I’ve tasted of desire I hold with those who favor fire. But, if it had to perish twice, I think I know enough of hate To know that for destruction ice Is also great And would suffice.

Which of the following statements will the poet agree with the **MOST**?

- (A) Greed can destroy one's world.
- (B) Both desire and hate can create self-doubt.
- (C) Hatred destroys what desire cannot.
- (D) Desire overpowers hatred to control humans.
- (E) Ambition is more powerful than envy.

Correct Answer: (A) Greed can destroy one's world.

Solution:

Step 1: Recall the poem's theme.

The poet (Robert Frost's "Fire and Ice") suggests that both desire (fire, i.e., greed) and hatred (ice) can destroy the world. Desire, particularly greed and craving, is highlighted as powerful enough to end human harmony.

Step 2: Apply to options.

- (A) Correct — Greed (desire/fire) can indeed destroy one's world.
- (B) Incorrect — "self-doubt" is not the central theme.
- (C) While hatred is destructive, the poet emphasizes greed/desire as equally world-ending.
- (D) Wrong — no suggestion that desire "overpowers" hatred.
- (E) Ambition vs envy — irrelevant to the poem.

Therefore: The poet would agree most with (A).

Greed can destroy one's world

Quick Tip

When interpreting poetry-based MCQs, identify the **central metaphor** (here, "fire = desire/greed, ice = hatred"). Link the option back to this metaphor instead of overthinking peripheral ideas.

Q10. Which is the MOST UNSUITABLE title of the poem?

- (A) The Annihilation Hypothesis
- (B) Love and Detest – A Tale of Destruction
- (C) How the World Ends
- (D) Destruction by Fire and Ice
- (E) Emotional Destruction of the World

Correct Answer: (E) Emotional Destruction of the World

Solution:

Step 1: Recall the poem’s theme.

The poem “Fire and Ice” by Robert Frost addresses the literal and metaphorical destruction of the world, where “fire” represents desire/greed and “ice” represents hatred. It is about physical annihilation or cosmic end, not merely emotional suffering.

Step 2: Evaluate titles.

- (A) “The Annihilation Hypothesis” → fits, as the poem speculates on how the world may end.
- (B) “Love and Detest – A Tale of Destruction” → suitable, since desire (love/greed) and hate (detest) both cause destruction.
- (C) “How the World Ends” → appropriate, directly reflects the poem’s central question.
- (D) “Destruction by Fire and Ice” → exact and accurate title.
- (E) “Emotional Destruction of the World” → unsuitable, because the poem does not talk about emotional breakdown of individuals but rather the literal end of the world.

Therefore: The most unsuitable title is (E).

Emotional Destruction of the World

Quick Tip

When asked for an “unsuitable” title, eliminate all options that correctly summarize the poem’s theme. The odd one out (too narrow, too broad, or misleading) is the right answer.

Q11. Read the following paragraph and answer the question that follows: In a 2017 survey of 3,915 American workers, my colleagues and I found that workers report experiencing a sizable “voice gap” at work — that is, a gap between how much say or influence they feel they ought to have and how much they actually have — on topics such as wages, working conditions, fair treatment, and input into how they do their work. And now a second study, I have just completed with a new team, finds that today’s workers want forms of voice and representation that go well beyond traditional unions.

Based on the above paragraph, which of the following options would you agree with the MOST?

- (A) The first study defines the concept and the second study uses the concept in a specific context.
- (B) The first study shows the intensity of the problem and the second study shows limitations of the existing solutions.
- (C) The first study shows the frustration of the American workers and the second study shows the inability of unions in addressing them.
- (D) The first study focuses on the need for fair representation and the second study discusses forms of representation.
- (E) The first study highlights the existence of the problem and the second study highlights the

need for new ways of solving it.

Correct Answer: (E) The first study highlights the existence of the problem and the second study highlights the need for new ways of solving it.

Solution:

Step 1: Analyze the paragraph.

The first study (2017 survey of 3,915 workers) identifies the “voice gap” — a mismatch between how much influence workers think they should have vs. how much they actually do have. This clearly **establishes the problem**.

The second study finds that workers want newer forms of representation that go beyond traditional unions. This is a **search for new solutions** to address the problem.

Step 2: Evaluate options.

- (A) Incorrect — the first study doesn’t just define a concept; it establishes a real problem.
- (B) Incorrect — the second study is not about “limitations” of existing solutions but about the need for new ones.
- (C) Incorrect — frustration is implied, but the passage does not specifically say unions are failing.
- (D) Partly true, but too narrow; the second study is not only about representation but about broader new solutions.
- (E) Correct — matches perfectly: first study = existence of problem; second study = need for new solutions.

Therefore: The answer is (E).

The first study shows the problem; the second shows the need for new solutions.

Quick Tip

In RC “study comparison” questions, break each study’s contribution into two parts: **problem identified** vs. **solution suggested**. This prevents confusion among overlapping options.

Instructions

Read the passage below and answer the 3 associated questions:

There is nothing spectacularly new in the situation. Most old-societies-turned-young-nation-states learn to live in a world dominated by the psychology and culture of exile. For some, the twentieth century has been a century of refugees. Others like Hannah Arendt have identified refugees as virtually a new species of

human being who have come to symbolize the distinctive violence of our time. Refugees as contemporary symbols, however, proclaim something more than a pathology of a global nation-state system. They also represent a state of mind, a form of psychological displacement that has become endemic to modernizing societies. One does not even have to cross national frontiers to become a refugee; one can choose to be seduced by the ‘pull’ of self-induced displacement rather than be ‘pushed’ by an oppressive or violent system at home. It is this changed status of territoriality in human life that explains why, in immigrant societies like the United States, the metaphor of exile is now jaded. Some have already begun to argue that human beings need not have a ‘home’ as it has been traditionally understood in large parts of the world, that the idea itself is a red herring. While the idea of exile begins to appear trite in intellectual circles, an increasingly large proportion of the world is getting reconciled to living with the labile sense of self. Exile no longer seems a pathology or an affliction. Displacement and the psychology of exile are in; cultural continuities and settled communities are out; there is a touch of ennui about them.

Q12. Which of the following options is CLOSEST to the meaning of the phrase “labile sense of self”?

- (A) History does not confine the self.
- (B) Humans are not meant to be shunted around.
- (C) The self adapts to a new geography.
- (D) Geography does not imprison the self.
- (E) The self does not belong to a particular geography.

Correct Answer: (C) The self adapts to a new geography.

Solution:

The word “labile” means flexible, adaptable, or easily altered. In the passage, “labile sense of self” refers to refugees and displaced people who learn to adapt quickly to new geographies and social contexts.

- (A) and (D) are too abstract — they don’t capture adaptability.
- (B) contradicts the passage, since displacement is already accepted.
- (E) partially true, but it emphasizes detachment rather than adaptability.

Thus, the best match is (C).

The self adapts to a new geography

Quick Tip

Look for the literal meaning of tricky adjectives like “labile” — here it points to adaptability and changeability.

Q13. Based on the passage, which of the following will the author DISAGREE the MOST with?

- (A) One does not have to cross frontiers to become a refugee.
- (B) Intellectuals find the notion of exile irrelevant.
- (C) Refugees symbolize exploitation and abuse of our times.
- (D) Being a refugee is a state of mind.
- (E) A feeling of alienation in modernizing societies is a common phenomenon.

Correct Answer: (C) Refugees symbolize exploitation and abuse of our times.

Solution:

The passage explains that exile and displacement are no longer always forced — they can be self-induced, pulled by opportunities. Hence, refugees do not necessarily “symbolize exploitation and abuse.”

- (A) Agrees with the author — no need to cross borders physically to feel displaced.
- (B) Correct — the passage shows intellectual debates around exile.
- (D) Matches the author’s claim — being a refugee is partly a psychological state.
- (E) True — alienation is common in modern societies.

Thus, the option most contrary to the author’s view is (C).

Refugees symbolize exploitation and abuse of our times
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Quick Tip

When asked for “DISAGREE,” identify which statement directly contradicts or oversimplifies the nuanced view presented in the passage.

Q14. Project Affected Families (PAF) are those that are physically displaced due to construction of a large project (dam, factory etc.) in an area where the PAF traditionally resided. With insights from the passage, what would a project proponent, dealing with Project Affected Families (PAF), agree the MOST with?

- (A) PAF as a concept is irrelevant since human displacement is a historical phenomenon.
- (B) Industry and government should care equally about profits and people.
- (C) Don’t worry about PAF, they will eventually resettle and rehabilitate.
- (D) Emotional estrangement of PAF is not an area of concern.
- (E) PAF do not have a labile sense of self.

Correct Answer: (D) Emotional estrangement of PAF is not an area of concern.

Solution:

The passage highlights the adaptability (labile self) of displaced people. It emphasizes that exile or displacement is increasingly normalized, and people reconcile with moving to new geographies. Therefore, a project proponent would downplay or dismiss emotional estrangement as a significant issue.

- (A) Too dismissive of displacement as irrelevant.
- (B) Ethically right but not the author's main point.
- (C) Simplistic — ignores the emotional psychology described.
- (E) Contradicts the passage, which says displaced people *do* have a labile sense of self.

Hence, the most consistent option is (D).

Emotional estrangement of PAF is not an area of concern

Quick Tip

When applying passage insights to a new context (like PAF), link the author's core claim (adaptability of displaced people) to the given options.

Q15. Read the following paragraph and answer the question that follows:

In Australia, jellyfish are most common between November and May. In Hawaii, jellyfish often show up on south-facing beaches eight days after a full moon. In the Mediterranean, blooms usually appear in the summer. Unfortunately for travellers, there is no worldwide database for recent jellyfish sightings, and tourism officials are sometimes reluctant to publicize jellyfish swarms out of fear that such news will scare off visitors.

Which of the following can be BEST concluded from the above paragraph?

- (A) Celestial bodies have an influence on jellyfish sightings.
- (B) Economic interests influence security advisories.
- (C) Tourism officials hide the truth about jellyfish sightings.
- (D) Seasonal variations in the marine temperature impact jellyfish sightings.
- (E) Tourists visiting north-facing beaches in Hawaii do not spot jellyfish.

Correct Answer: (A) Celestial bodies have an influence on jellyfish sightings.

Solution:

The paragraph notes that jellyfish in Hawaii often appear on south-facing beaches exactly eight days after a full moon. This clearly links sightings to lunar cycles, a celestial body phenomenon.

- (B) and (C) are mentioned, but they reflect reluctance to share info, not the “best conclusion.”
(D) is not explicitly mentioned in the passage.
(E) is not supported.

Thus, the strongest conclusion is (A).

Celestial bodies influence jellyfish sightings

Quick Tip

When asked for a “best conclusion,” choose the fact most strongly supported by direct evidence in the text, not side mentions.

Q16. Read the following paragraph and answer the question that follows:

Global surface temperatures in 2019 are on track to be either the second or third warmest since records began in the mid-1800s, behind only 2016 and possibly 2017. On top of the long-term warming trend, temperatures in 2019 have been buoyed by a moderate El Niño event that is likely to persist through the rest of the year.

Which of the following statements can be BEST inferred based on the above paragraph?

- (A) El Niño event causes global surface temperatures to rise in the long-term.
(B) A moderate El Niño event increases temperature more than a weak El Niño event.
(C) El Niño event did not affect temperatures in 2016 and 2017.
(D) The long-term trend of global surface temperatures is unrelated to El Niño.
(E) Global surface temperatures are increasing at a constant rate for three years.

Correct Answer: (D) The long-term trend of global surface temperatures is unrelated to El Niño.

Solution:

The paragraph states that 2019 temperatures were high due to both the long-term warming trend *and* a moderate El Niño. This shows El Niño impacts short-term variation but is not responsible for the long-term warming trend.

- (A) Wrong — El Niño is not long-term.
(B) Not mentioned.
(C) Cannot be concluded — no info given.
(E) Wrong — the rise is not constant but varies yearly.

Thus, the best inference is (D).

Global warming is long-term, El Niño only short-term

Quick Tip

Distinguish between **long-term trends** (climate change) and **short-term variations** (El Niño) in inference questions.

Q17. Read the following paragraph and answer the question that follows:

If we can send a human to the Moon, why can't we build sustainable cities? Defeat cancer? Tackle climate change? So, go the rallying cries inspired by one of humanity's greatest achievements, the US effort that put Neil Armstrong and Buzz Aldrin on the Moon on 20 July 1969.

Which of the following statements, if true, BEST communicates the intent of the paragraph?

- (A) America's moonshot was more about race to the moon and less about solving problems.
- (B) America's moonshot initiative was mainly a response to USSR's competing initiative.
- (C) The reason we celebrate 1969 moonshot is precisely because nothing significant has been done in that domain since then.
- (D) Moonshot has a definitive ownership, whereas creating sustainable cities and curing cancer are public-good problems.
- (E) The complexity of developing sustainable cities and curing cancer is far more than sending a human to the moon.

Correct Answer: (E) The complexity of developing sustainable cities and curing cancer is far more than sending a human to the moon.

Solution:

The paragraph compares the moonshot achievement to modern challenges like climate change and cancer. The intent is to show that though humanity once achieved a great feat, today's challenges are even more complex.

- (A) and (B) are about historical motives, not the passage's point.
- (C) Irrelevant — focus is not on lack of progress but complexity of current problems.
- (D) Somewhat true but less direct.
- (E) Perfectly matches the passage's idea that building sustainable cities and defeating cancer are more complex than landing on the moon.

Thus, the correct answer is (E).

Modern problems are harder than the moonshot

Quick Tip

When a passage contrasts past and present, focus on the comparative degree: here, the moon landing was easier than solving sustainability and health challenges.

Q18. When asked what the politician will do for the nation’s economy, he attacked the opponent by saying, “Look at that face! Would anyone vote for that? I mean, she’s a woman, and I’m not supposed to say bad things, but really, folks, come on. Are we serious? Nevertheless, we’re going to defeat ISIS. ISIS happened a number of years ago in a vacuum that was left because of bad judgment.

Which of the following statements **BEST** describes the politician’s intent?

- (A) To make an emotional appeal to the voters
- (B) To appeal to the macho voters and use fear as a tool to lure voters
- (C) To divert attention towards ISIS as compared to the economy
- (D) To make a sexist remark and share his concern about an important issue
- (E) To digress and argue that security is more important than economy

Correct Answer: (A) To make an emotional appeal to the voters

Solution:

Step 1: Understand the scenario.

The politician was asked about the nation’s economy, but instead of addressing it directly, he criticized the opponent’s appearance and then shifted to issues like ISIS and national security. This reflects a reliance on emotional rhetoric rather than logical policy discussion.

Step 2: Evaluate the answer choices.

- (A) Correct — his approach is based on stirring emotions (fear of ISIS, ridicule of opponent) rather than reasoned economic plans.
- (B) Too narrow — while there is some appeal to fear, it is not limited to “macho voters.”
- (C) Partial truth — he does divert to ISIS, but that alone is not the *intent*; the real intent is emotional persuasion.
- (D) Contains truth — he does make a sexist remark, but that’s not the overall purpose of his speech.
- (E) Also partial — he does suggest security over economy, but again the broader method is emotional appeal.

Step 3: Conclusion.

The dominant intent is emotional manipulation to connect with voters on non-economic grounds.

To make an emotional appeal to the voters

Quick Tip

In political speech RC questions, focus on the **primary rhetorical strategy**. Emotional appeal often overrides logical reasoning, making it the strongest answer when multiple partial truths exist.

Q19. Read the passage below and answer the 3 associated questions:

The nature of knowledge cannot survive unchanged within this context of general transformation. It can fit into the new channels, and become operational, only if learning is translated into quantities of information. We can predict that anything in the constituted body of knowledge that is not translatable in this way will be abandoned and that the direction of new research will be dictated by the possibility of its eventual results being translatable into computer language. The “producers” and users of knowledge must know, and will have to, possess the means of translating into these languages whatever they want to invent or learn. Research on translating machines is already well advanced. Along with the hegemony of computers comes a certain logic, and therefore a certain set of prescriptions determining which statements are accepted as “knowledge” statements.

We may thus expect a thorough exteriorisation of knowledge with respect to the “knower,” at whatever point he or she may occupy in the knowledge process. The old principle that the acquisition of knowledge is indissociable from the training (Bildung) of minds, or even of individuals, is becoming obsolete and will become ever more so. The relationships of the suppliers and users of knowledge to the knowledge they supply and use is now tending, and will increasingly tend, to assume the form already taken by the relationship of commodity producers and consumers to the commodities they produce and consume – that is, the form of value. Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorised in a new production: in both cases, the goal is exchange. Knowledge ceases to be an end in itself, it loses its “use-value.”

Which of the following statements BEST captures the essence of the passage?

- (A) Knowledge shall no longer be evaluated by its truth but its commercial value.
- (B) Translation of knowledge into machine language exteriorises it.
- (C) Suppliers and users of knowledge have become its producers and consumers.
- (D) Knowledge shall be exclusively produced to be sold.
- (E) Market forces have taken over the process of knowledge production.

Correct Answer: (A) Knowledge shall no longer be evaluated by its truth but its commercial value.

Solution:

The passage argues that knowledge today is being shaped by its ability to be commodified and consumed, much like a product. Its “truth” is no longer the central criterion — instead, it is judged by whether it can be translated, packaged, and sold. Statements such as “knowledge is and will be produced in order to be sold” directly support this.

- (B) Only highlights one aspect (translation into machine language).
- (C) True but descriptive, not the essence.
- (D) Narrow — knowledge is not only produced to be sold but also consumed.
- (E) Broad — while partly correct, the emphasis is specifically on commodification over truth.

Thus, the essence is best captured by (A).

Knowledge is evaluated by commercial value, not truth

Quick Tip

For “essence” questions, focus on the **main argument** that unifies all supporting details, not minor sub-points.

Q20. Based on the passage, which of the following statements can be BEST inferred?

- (A) For knowledge to acquire an exchange-value, it should cease to have a use-value.
- (B) Acquisition of knowledge need no longer transform its recipient.
- (C) The locus of creation and accumulation of knowledge has shifted.
- (D) Knowledge as a transactional commodity is indispensable to productive power.
- (E) Mental discipline is not necessary for learning anymore.

Correct Answer: (B) Acquisition of knowledge need no longer transform its recipient.

Solution:

The passage explicitly states: “The old principle that the acquisition of knowledge is indissociable from the training of minds, or even of individuals, is becoming obsolete.” This shows that knowledge no longer has to transform the learner.

- (A) Incorrect — the passage does not say exchange-value requires absence of use-value.
- (C) Too vague — not directly inferable.
- (D) Over-generalization — not explicitly supported.
- (E) Not directly mentioned.

Hence, the best inference is (B).

Knowledge need not transform the recipient

Quick Tip

Inference questions require reading between the lines — identify what is implied but not directly stated.

Q21. Which of the following options will the author agree the MOST with?

- (A) A daughter of a lawyer must become a lawyer.
- (B) A person with no passion for singing, if trained, will sing perfectly.
- (C) To get promoted, an unempathetic manager can learn to display empathy.
- (D) To teach poetry, one must not be a poet.
- (E) MBA program has a high exchange-value but zero use-value.

Correct Answer: (C) To get promoted, an unempathetic manager can learn to display empathy.

Solution:

The passage emphasizes that knowledge is now valued for its *exchange-value* (commercial use, practical output) rather than its deeper transformative impact. Learning or acquiring skills is no longer about inner truth but about external utility.

(C) Fits this perfectly: a manager doesn't have to genuinely transform into an empathetic person; they only need to *display empathy* for career advancement (exchange-value).

- (A) Incorrect — heredity isn't the focus.
- (B) Incorrect — the issue isn't about passion vs. training.
- (D) Too ambiguous.
- (E) Partly true, but too extreme; not the most accurate reflection.

Therefore, the author would most agree with (C).

Unempathetic manager can learn to display empathy for promotion

Quick Tip

When authors emphasize “exchange-value over transformation,” pick the option where learning is for **external gain**, not inner change.

It's as if someone were out there making up pointless jobs just for the sake of keeping us all working. And here, precisely, lies the mystery. In capitalism, this is precisely what is not supposed to happen. Sure, in the old inefficient socialist states like the Soviet Union, where employment was considered both a right and a

sacred duty, the system made up as many jobs as it had to. (This is why in Soviet department stores it took three clerks to sell a piece of meat.) But, of course, this is the very sort of problem market competition is supposed to fix. According to economic theory, at least, the last thing a profit-seeking firm is going to do is shell out money to workers they don't really need to employ. Still, somehow, it happens. While corporations may engage in ruthless downsizing, the layoffs and speed-ups invariably fall on that class of people who are actually making, moving, fixing, and maintaining things. Through some strange alchemy no one can quite explain, the number of salaried paper pushers ultimately seems to expand, and more and more employees find themselves—not unlike Soviet workers, actually—working forty- or even fifty-hour weeks on paper but effectively working fifteen hours just as Keynes predicted, since the rest of their time is spent organizing or attending motivational seminars, updating their Facebook profiles, or downloading TV box sets. The answer clearly isn't economic: it's moral and political. The ruling class has figured out that a happy and productive population with free time on their hands is a mortal danger. (Think of what started to happen when this even began to be approximated in the sixties.) And, on the other hand, the feeling that work is a moral value in itself, and that anyone not willing to submit themselves to some kind of intense work discipline for most of their waking hours deserves nothing, is extraordinarily convenient for them.

Q22. Which of the following options, if true, BEST makes the author's assertion on pointless jobs erroneous?

- (A) Workers who carry out pointless jobs are more loyal to the organization than others.
- (B) Pointless jobs add less value to the organization than the jobs of those who are making or fixing things.
- (C) Pointless jobs decrease the efficiency of the organization since they replace those who are making, fixing and moving things.
- (D) Organizations with a higher number of pointless jobs are more profitable than those with less.
- (E) Even though the rate of increase in pointless jobs is higher, their absolute number on an average is lower than that of meaningful jobs.

Correct Answer: (D) Organizations with a higher number of pointless jobs are more profitable than those with less.

Solution:

The author argues that pointless jobs exist despite being economically unproductive, mainly for political and social reasons. If (D) were true — that organizations with more pointless jobs are **actually more profitable** — it would directly contradict the author's claim that such jobs are wasteful and politically motivated.

- (A), (B), and (C) all reinforce the author's point.
- (E) does not challenge the core argument.

Thus, (D) makes the author's argument erroneous.

Organizations with more pointless jobs are more profitable

Quick Tip

When looking for an option that makes an argument erroneous, choose the one that directly **contradicts the author's main claim**, not one that just modifies it.

Q23. Which of the following can be BEST inferred from the passage?

- (A) The ruling class abhors leisure so much that they encourage organizations to create unwanted jobs.
- (B) Keeping people employed for longer hours serves the plans of the ruling class.
- (C) Work as a moral right is the design of the ruling class to cut down on leisure.
- (D) For political reasons, profit-making firms sometimes indulge in non-profitable decisions.
- (E) Pointless jobs are here to stay, regardless of whether they are necessary or not.

Correct Answer: (B) Keeping people employed for longer hours serves the plans of the ruling class.

Solution:

The passage explicitly says: "The ruling class has figured out that a happy and productive population with free time on their hands is a mortal danger." This implies that keeping people employed for extended hours — even in pointless jobs — serves the ruling class by preventing unrest or challenges to authority.

- (A) is too extreme; the passage doesn't show hatred of leisure, just fear of its consequences.
- (C) is partly true but not as clear as (B).
- (D) is plausible but secondary.
- (E) is speculation, not inference.

Thus, (B) is best inferred.

Ruling class benefits from keeping people occupied longer

Quick Tip

Inference requires finding the statement that is **directly implied**, not an exaggeration or speculation.

Q24. Which of the following statements will BEST explain the principle underlying the theme of the passage?

- (A) Organizations that create more jobs are rewarded by the government for protecting political values.
- (B) Work is a moral value in itself.
- (C) People unwilling to submit to an intense work discipline deserve nothing.
- (D) Keynes predicted that a happy and productive workforce is a force for the good.
- (E) Peace and order in society require humans to be engaged in some activity most of the time, regardless of its meaninglessness.

Correct Answer: (E) Peace and order in society require humans to be engaged in some activity most of the time, regardless of its meaninglessness.

Solution:

The passage emphasizes that pointless jobs persist because the ruling class fears the dangers of leisure. In order to maintain political and social order, people must remain busy, even if their work has no true value.

- (A) Not mentioned.
- (B) Is a consequence, not the main principle.
- (C) Too harsh and not central to the passage.
- (D) Opposite of the passage — Keynes believed leisure was good, but here it is seen as dangerous.
- (E) Exactly matches the theme: meaningless activity helps maintain stability and prevent unrest.

Thus, (E) is correct.

Engagement, even in meaningless work, maintains social peace and order

Quick Tip

When asked for the “principle underlying the theme,” identify the **broad philosophical justification** that explains all details of the passage.

Q25. Go through the statements below and answer the question that follows:

P. Fast food intake for more than three times a week is associated with greater odds of atopic disorders such as asthma, eczema or rhinitis. Thus, it should be definitely and strictly controlled in children as it does no good.

Q. Regular junk food intake can lead to physical and psychological issues among children.

R. Lack of Vitamins such as A and C, and minerals such as magnesium and calcium, encourage

the development of deficiency diseases and osteoporosis, as well as dental caries due to higher intake.

S. Junk food, which are rich in energy with lots of fat and sugar, are relatively low in other important nutrients such as protein, fiber, vitamins and minerals.

T. Emotional and self-esteem problems, along with chronic illnesses in later life due to obesity, are the issues associated with the junk food.

Which of the following combinations is the MOST logically ordered?

- (A) QS RTP
- (B) QRSPT
- (C) TQSRP
- (D) TSQRP
- (E) RSQPT

Correct Answer: (A) QS RTP

Solution:

Step 1: Find the general opening.

Statement **Q** gives the broad thesis: junk food causes physical and psychological issues in children. This is the natural introduction.

Step 2: Define/explain the cause.

After stating the problem, we explain what junk food is. **S** clarifies that junk food is high in fat/sugar and low in key nutrients.

Step 3: Present immediate health mechanisms.

Given S (nutrient-poor), **R** logically follows by detailing deficiency outcomes (lack of vitamins/minerals \Rightarrow diseases, caries).

Step 4: Add further consequences.

T extends effects to emotional/self-esteem problems and later-life chronic illnesses due to obesity—broader impacts beyond deficiencies.

Step 5: Conclude with a recommendation/specific evidence.

P cites a concrete association (3 times/week \Rightarrow atopic disorders) and issues a policy recommendation to control intake—ideal conclusion.

Order: Q \Rightarrow S \Rightarrow R \Rightarrow T \Rightarrow P
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Quick Tip

When ordering statements, look for: (i) **Thesis** \Rightarrow (ii) **Definition/Explanation** \Rightarrow (iii) **Mechanisms/Examples** \Rightarrow (iv) **Wider effects** \Rightarrow (v) **Conclusion/Recommendation**.

Q26. Go through the statements below and answer the question that follows:

P. Surabhi's Instagram profile has 1.4 million followers. It is filled with pictures of her posing in different settings.

Q. In India, reports suggest that WhatsApp (Much more than Facebook or Twitter) is the primary tool for the dissemination of political communication.

R. Political campaigns pay social media companies to promote their content.

S. Political advertising on social media comes in many forms and remains underexamined in India.

T. Social media influencers are used for the dissemination of content.

Which of the following combinations is the MOST logically ordered?

- (A) SQ RTP
- (B) QR TPS
- (C) QR STP
- (D) SR QTP
- (E) PR STQ

Correct Answer: (D) SRQTP

Solution:

Step 1: Find the general introduction.

S introduces the main theme of political advertising in social media, stating that it remains underexplored in India. This is the broad context that sets up the discussion.

Step 2: Provide specific examples of political advertising.

R follows logically, describing how political campaigns use social media companies to promote content.

Step 3: Expand on the medium used.

Q elaborates that WhatsApp is a dominant tool for political communication in India, further explaining the nature of social media as a communication tool.

Step 4: Introduce an example of a social media influencer.

T connects the earlier points by introducing the role of influencers in disseminating content.

Step 5: Conclude with specific information.

P provides a concrete example by describing Surabhi's Instagram profile as a real-world instance

of a social media influencer.
Thus, the correct order is

S, R, Q, T, P

Quick Tip

When ordering statements, identify **the broad context first**, followed by details that build on it, and conclude with specific examples that highlight the main theme.

Decision Making

Q27. In the second week of her eight-week internship, Amala realizes that the project requires inputs from subjects she studied in her third trimester. However, during the third trimester, Amala was significantly distracted by an inter-college sports meet, affecting her grasp of the subjects. Which of the following is the **MOST** appropriate way forward for Amala?

- (A) Amala should request her mentor to allocate a different project because of her limited familiarity with the inputs required.
- (B) Amala should disclose to the mentor her limited understanding of the required inputs and seek his suggestions.
- (C) Amala should seek Shabnam's help who performed well in the third trimester.
- (D) Amala should realize that she may not get a PPO and so focus on networking with the experienced talent in the organization.
- (E) Amala, after studying the organization for a week, should design her own project and pitch it to her mentor.

Correct Answer: (B) Amala should disclose to the mentor her limited understanding of the required inputs and seek his suggestions.

Solution:

Step 1: Identify the problem.

Amala lacks a strong grasp of the subjects due to distraction during her third trimester, which affects her ability to handle the project effectively.

Step 2: Evaluate the options.

- (A) Requesting a different project might avoid the issue but does not address her learning gap or show initiative.
- (C) Seeking Shabnam's help could provide support but bypasses direct engagement with her mentor, which is less proactive.
- (D) Focusing on networking instead of the project suggests giving up, which is not a constructive solution.

- (E) Designing her own project after a week requires significant time and may not align with organizational goals.
- (B) Disclosing her limitation to her mentor and seeking suggestions demonstrates honesty, responsibility, and a willingness to learn, making it the most appropriate step.

Step 3: Choose the best approach.

The most appropriate way forward is to collaborate with her mentor to overcome the challenge.

Therefore: The correct choice is **(B)**.

B

Quick Tip

When facing challenges in a task, communicate with your mentor or supervisor early to seek guidance rather than avoiding the issue or seeking external help without oversight.

Q28. Vindhya's project is about understanding employee perception regarding the organization's HR policies. Against her own instinct, she is suggested by her mentor to interview only the good performers identified by his office because poor performers, he believes, usually crib against the policies. Which of the following courses of action will BEST enable Vindhya to provide the organization with a complete picture?

- (A) Vindhya should completely comply with her mentor's suggestion.
- (B) Vindhya should ignore her mentor's directive, collect data from all, but compile reports separately for the good performers and the poor performers.
- (C) Vindhya should report this restraint to the HR head requesting her immediate intervention in the project.
- (D) Vindhya should request the HR Head to allot her another mentor without divulging the reason.
- (E) Vindhya should meet only those identified by her mentor, but also collect information from them as why their other colleagues are disgruntled.

Correct Answer: (E) Vindhya should meet only those identified by her mentor, but also collect information from them as why their other colleagues are disgruntled.

Solution:

Step 1: Identify the objective.

Vindhya needs a complete picture of employee perceptions, which requires input from both good and poor performers.

Step 2: Evaluate the options.

- (A) Complying fully limits data to good performers, skewing results.

- (B) Ignoring the mentor and collecting separate data risks conflict and may not align with project goals.
- (C) Reporting to the HR head delays the project and may not guarantee a solution.
- (D) Requesting a new mentor avoids the issue but doesn't ensure better data collection.
- (E) Meeting good performers as suggested, while gathering insights on poor performers' views, balances mentor's directive with comprehensive data.

Step 3: Choose the best approach.

Option (E) allows Vindhya to follow the mentor's guidance while still addressing the full scope of perceptions.

Therefore: The correct choice is **(E)**.

E

Quick Tip

When tasked with comprehensive analysis, seek ways to indirectly include all perspectives while respecting given constraints.

Q29. Shabnam, who is working on sales executives' work-life balance, has collected the following details about their frequent travels:

1. Frequent meetings help strengthen relationships with key customers.
2. Travelling has no effect on the personal lives of the sales executives as most of them are single.
3. Travel enhances the financial health of the sales executives since their fixed salaries are low.
4. Frequent travel has no significant impact on market budget, given the current high margins from sales.
5. The sales executives have the autonomy to decide the frequency of their travel.

Shabnam thinks that the frequency of travel is higher than required. Which of the following combinations of the above reasons can enable Shabnam BEST substantiate her thinking?

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

Correct Answer: (C) 3, 4 and 5

Solution:

Step 1: Identify the argument.

Shabnam believes travel frequency exceeds what's necessary, so she needs reasons supporting

excessive travel without strong justification.

Step 2: Evaluate the combinations.

- (A) 1, 2, 4: Frequent meetings (1) and no budget impact (4) justify travel, while (2) suggests no personal life effect, weakening the argument.
- (B) 2, 3, 4: (2) and (3) don't strongly support excess; (4) alone isn't enough.
- (C) 3, 4, 5: (3) suggests financial incentive, (4) shows no budget constraint, and (5) indicates self-decided frequency, supporting potential overuse.
- (D) 2, 5: (2) weakens the case; (5) alone isn't sufficient.
- (E) 1, 3, 5: (1) justifies travel, countering the excess claim.

Step 3: Choose the best combination.

(C) best supports the idea that travel might be higher than needed due to autonomy and lack of financial checks.

Therefore: The correct choice is (C).

C

Quick Tip

When substantiating an opinion, select reasons that align with the core argument and avoid those that contradict it.

Q30. A Multinational Company (MNC) sources pristine natural spring water from Bori, a village in the Satpura mountains. The water is bottled directly without processing and sold under the brand name "Natural Spring Water" at a 50% premium compared to processed water brands. The MNC has signed a 30-year exclusive contract with the local panchayat (under the Panchayati Raj Act, 1992) for commercial use of the spring water. This agreement provides 50% of the panchayat's revenues and creates 250 jobs. Additionally, the spring continues to meet domestic and agricultural needs of the villagers.

Chanchala owns a small parcel of farming land in Bori. She grows cannabis in some part of her land and earns a significant amount of money from it. Soon after the bottling plant is commissioned, Chanchala, instigated by a neighbor with a vested interest, starts accusing the MNC of robbing her of water and impacting her livelihood. She threatens to take the MNC to court. Which of the following options will BEST solve the MNC's problem?

- (A) Promise to employ Chanchala's 17-year-old son as he turns 18
- (B) Request the panchayat to excommunicate Chanchala for cultivating cannabis
- (C) Buy Chanchala's produce at a premium of 30%
- (D) Get the villagers employed by the MNC to persuade Chanchala not to sue
- (E) Compensate the monetary loss as perceived by Chanchala

Correct Answer: (D) Get the villagers employed by the MNC to persuade Chanchala not to sue

Solution:

Step 1: Identify the problem.

The MNC faces a legal threat from Chanchala, who feels her water access and livelihood are compromised due to the bottling plant.

Step 2: Evaluate the options.

- (A) Promising a job to her son addresses employment but not the core water/livelihood issue.
- (B) Requesting excommunication for cannabis cultivation escalates conflict and is unethical.
- (C) Buying her produce at a premium might address income but not the water dispute directly.
- (E) Compensating monetary loss could work but requires assessing her perceived loss, which may be complex and contentious.
- (D) Using employed villagers to persuade Chanchala leverages local influence to resolve the dispute amicably, avoiding legal escalation.

Step 3: Choose the best approach.

Option (D) offers a practical, community-based solution to prevent the lawsuit.

Therefore: The correct choice is **(D)**.

D

Quick Tip

When facing disputes, leveraging community support can be an effective way to resolve conflicts peacefully.

31. The MNC has spotted traces of chemicals in their fortnightly water quality analysis. This is due to contaminated agricultural runoff entering the spring from nearby fields where farmers use pesticides and fertilizers. The MNC needs an *immediate* solution. Which option BEST resolves the situation?

- A Continue bottling the natural spring water without processing since the villagers drink it as it is
- B Since the customers trust the MNC to do what is good for them, remove the contaminants and continue to brand as “Natural Spring Water”
- C Rebrand “Natural Spring Water” as “Purified Spring Water” after removing the contaminants through charcoal filtering
- D Close down the bottling plant until the problem is resolved and inform the media that customer interests override profit concerns
- E Source water from an uncontaminated natural spring 150 kms away at an addition of 50% to the total cost

Correct Answer: (E) Source water from an uncontaminated natural spring 150 kms away at an addition of 50% to the total cost

Solution:

Step 1: Identify the primary constraint (customer safety and legality).

Bottling contaminated water violates safety norms and consumer protection laws. Hence, (A) is unacceptable. \Rightarrow *Reject A.*

Step 2: Check brand integrity and truthfulness.

If contaminants are removed, continuing to call it “Natural Spring Water” (B) is misleading because the product is now processed; it risks regulatory action and trust erosion. \Rightarrow *Reject B.* Changing the label to “Purified Spring Water” after filtering (C) is more truthful, but it still depends on successfully and verifiably removing agricultural chemicals immediately; setting up, validating, and certifying an effective treatment train (for pesticides/fertilizers) is not instant and may require advanced treatment beyond charcoal. \Rightarrow *C may not meet the immediate need.*

Step 3: Evaluate operational continuity.

Closing the plant (D) protects customers but halts supply, loses market share, and harms livelihoods; it solves safety but not continuity. \Rightarrow *Sub-optimal.*

Step 4: Choose the option that ensures instant safety *and* continuity.

Sourcing from an uncontaminated spring (E) immediately restores product safety while keeping operations running, even at higher cost. The premium is justified to protect customers, compliance, and brand. \Rightarrow E is BEST.

Answer: E

Quick Tip

When urgency is explicit, prioritize options that deliver *immediate* consumer safety and regulatory compliance, even at higher short-term cost; then work on longer-term source fixes.

32. The MNC seeks a *sustainable* solution to recurring chemical contamination of its natural spring due to agricultural runoff (pesticides/fertilizers). Which course of action will BEST solve the issue?

- A Negotiate with the Panchayat to gain control of the entire spring and provide alternate sources of irrigation for farming
- B Change branding from “Natural Spring Water” to “Processed Drinking Water”
- C Move to another state with unexploited natural springs
- D Coax the farmers in the natural spring’s catchment to move to organic farming
- E Acquire all agricultural land in the natural spring’s catchment and afforest them

Correct Answer: (D) Coax the farmers in the natural spring's catchment to move to organic farming

Solution:

Step 1: Define “sustainable” in this context.

A sustainable fix addresses the *source* of contamination, aligns incentives of local stakeholders, and is feasible long-term. \Rightarrow *Target runoff reduction at farm practices.*

Step 2: Evaluate options against root-cause removal and feasibility.

(B) is cosmetic rebranding; it does not reduce contamination. \Rightarrow *Reject B.*

(C) relocates the problem rather than solving it, is costly, and abandons existing community relationships. \Rightarrow *Reject C.*

(E) Acquiring and afforesting all land is financially prohibitive, socially disruptive, and unnecessary; also reduces local livelihoods. \Rightarrow *Reject E.*

(A) Taking control of the spring and changing irrigation sources is complex, politically sensitive, and does not ensure farmers stop pesticide use; runoff risk persists. \Rightarrow *Inferior.*

Step 3: Choose a root-cause, community-aligned fix.

(D) Transitioning catchment farmers to organic (or low-input integrated) practices directly reduces pesticide/fertilizer runoff. With training, incentives, and offtake support, it is practical, scalable, and partnership-oriented. \Rightarrow D is BEST.

Answer: D

Quick Tip

For environmental quality problems, sustainable solutions act at the watershed's source—change practices upstream (with incentives and support) rather than rely on downstream fixes or cosmetic branding.

33. A lone village store, The Small Shop (computer peripherals), saw revenue growth fall from about 12% to 4% for three years as e-commerce rose. It offers MRP discounts to compete. Which is the BEST reason *NOT* to reduce the current discount further?

A A large fading sign behind the cash counter reads “in business and in life, always be fair”.

B A nearby village's customers recently began buying low-end peripherals here, adding $\approx 3\%$ to revenues.

C E-commerce began charging a delivery fee last year to cover insurance costs.

D A new resident with computer hardware experience may start a business in Turturunk.

E Even though e-commerce offers more choices, villagers prefer buying readily available products from The Small Shop.

Correct Answer: (E) Villagers prefer buying readily available products from The Small Shop

Solution:

Step 1: Identify the decision rule.

Do *not* cut discounts if there exists a defensible, non-price advantage sustaining demand (convenience/immediacy, trust, service) \Rightarrow price cuts risk margin without incremental volume.

Step 2: Assess each option for durable demand drivers.

(A) A motto on a sign is not evidence of demand; it does not justify pricing. \Rightarrow *Reject A*.

(B) A small, new segment ($\sim 3\%$) is positive but too small and may be price-sensitive; not a robust reason. \Rightarrow *Weak*.

(C) Competitors' delivery fees help relative positioning, but do not confirm customers' willingness to pay *here and now*; fees can change. \Rightarrow *Insufficient*.

(D) A potential entrant argues for *maintaining* margins or investing in service, not for discounting decisions today; it is speculative. \Rightarrow *Not decisive*.

(E) Clear evidence of local preference for readily available, immediate-purchase items indicates convenience/service moat; cutting discounts would only erode margins without strong volume gain. \Rightarrow **E is BEST**.

Answer: E

Quick Tip

Before lowering prices, verify whether your moat is non-price (availability, immediacy, trust, service). If yes, protect margins and invest in the moat instead of discounting further.

Q34. The Small Shop wants to increase the variety of products sold, including expensive ones. However, it is averse to accumulating unsold products, specifically of the expensive kind. Which of the following is the BEST option if The Small Shop wants to increase the variety of the products it sells?

(A) The Small Shop should make an arrangement with a retailer of the nearest city. The shop can spare one of its employees once a week to procure the weekly requirements.

(B) The Small Shop should focus only on low-end peripherals that currently contribute to 60% of its revenues.

(C) The Small Shop should get suppliers to courier its requirements to the shop whenever needed. The suppliers require that The Small Shop orders a minimum quantity every month.

(D) The Small Shop should acquire extra space at lower rentals available at a distance of three kilometres from its current location.

(E) The Small Shop should focus exclusively on high-end peripherals which contribute to 10% of its revenues but 25% of its profits.

Correct Answer: (A) The Small Shop should make an arrangement with a retailer of the nearest city.

Solution:

Step 1: Identify the shop's goal and constraint.

The shop wants to *increase product variety*, including expensive items. But it is strongly *averse to the risk of accumulating unsold expensive products*. Hence, the solution must balance variety with low inventory risk.

Step 2: Evaluate each option.

(B) Focusing only on low-end peripherals reduces risk, but **fails the goal** of variety, especially expensive products.

(C) Couriering from suppliers requires a *minimum monthly order*, which increases the risk of unsold stock. Not ideal.

(D) Acquiring extra space increases storage capacity but also adds rental costs and encourages stockpiling, which contradicts the risk-aversion requirement.

(E) Exclusively focusing on high-end peripherals increases profits but greatly increases unsold stock risk, which is against the shop's priority.

Step 3: Evaluate option (A).

Arranging weekly procurement from a nearby city allows the shop to stock a *small quantity* of varied products on demand. This provides **flexibility, low inventory risk, and variety**. It directly satisfies both the need for variety and the risk-aversion constraint.

Best option: (A)

Quick Tip

When evaluating business decision questions, always match the option to *both* the goal (here, increasing variety) and the constraint (avoiding risk of unsold stock). Eliminate choices that only satisfy one side.

Q35. An emerging brand offers a franchise to The Small Shop for repairing its products, on a condition that other brands are not to be repaired. Repairs currently account for 15% of its revenues. Which of the following, if true, will BEST help The Small Shop to decide on the franchise?

(A) The Small Shop will have to send two of its employees for a three-month training if it wishes to be a franchisee. The emerging brand will bear the training cost.

(B) The upcoming brand is very new and needs franchisees desperately.

(C) Revenues from repairs are expected to increase by about 3–5 percent annually.

(D) No big and reputed brand has shown any interest in franchising The Small Shop.

(E) For the first three years, the emerging brand has offered to pay a fixed amount equal to the revenues earned from repairs the previous year.

Correct Answer: (C) Revenues from repairs are expected to increase by about 3–5 percent annually.

Solution:

Step 1: Identify the core decision.

Taking the franchise means *exclusivity*: the shop must stop repairing other brands. Since repairs currently contribute 15% of revenue, the key is to know the *future outlook* of this revenue stream under the emerging brand.

Step 2: Test each option for decision-useful information.

(A) Training logistics and cost (even if borne by the brand) do not indicate whether switching to exclusive repairs will be financially wise.

(B) The brand's desperation says little about profitability or revenue stability for the shop.

(C) A credible forecast that *repair revenues will grow 3–5% annually* directly informs the shop's trade-off: it suggests the repair segment is healthy and likely to expand, helping decide whether exclusivity is attractive.

(D) Lack of interest from big brands is weakly informative; it could reflect many things not tied to the shop's payoff.

(E) A fixed payout equal to *last year's* repair revenues caps upside and ignores expected growth; without growth participation, this could be worse than (C).

Step 3: Conclusion.

Only (C) provides forward-looking, financially decisive information about the *trajectory* of the repair revenue that will be affected by the exclusive franchise arrangement. Hence it best helps the decision.

(C) is the most decision-relevant fact

Quick Tip

In decision-based RC/logic questions, prefer options that change expected value or risk (growth, margins, variability). Logistics, intent, or prestige cues rarely beat hard forward-looking numbers.

Read the situation below and answer the 3 associated questions: When Deepti opened the package, she was aghast. She received cotton pillow covers instead of satin pillow covers, she had ordered. Deepti ordered them for her father from a popular e-commerce website that hosted products of many sellers. Confused, Deepti contacted the seller's office using the details given on the package. The seller's representative profusely regretted and promised to send the satin pillow covers at no extra cost. He added that Deepti need not return the cotton covers she received. Deepti happily accepted the deal. A few days later, Deepti received another package from the seller. Unfortunately, this package also contained cotton pillow covers. Completely disillusioned with the seller's professionalism, Deepti

decided to put to use these cotton pillow covers also.

Q36. A few days later, Deepti received an email from the e-commerce website, requesting her to share feedback about the seller. Deeply frustrated with the overall online purchasing experience, she deliberately ignored it. Later that evening, over supper, her father opined that the balcony curtains needed to be changed. He suggested that they be bought from a local shop. “If something went wrong, we could at least yell at the seller,” he added. Deepti stared at her laptop and began writing her feedback. What would Deepti DEFINITELY achieve by giving feedback?

- (A) Prove a point to her father
- (B) Release her frustration
- (C) Coerce the e-commerce website to punish the seller
- (D) Instigate people against the seller
- (E) An act of social service

Correct Answer: (B) Release her frustration

Solution:

Step 1: Identify Deepti’s mental state.

She had a negative experience twice — she ordered satin covers but received cotton covers both times. She felt “*completely disillusioned with the seller’s professionalism*” and ignored the first feedback request because of frustration.

Step 2: Evaluate her later action.

When her father commented about buying from local shops, Deepti, still frustrated, “stared at her laptop and began writing her feedback.” This indicates that she was motivated by her emotional state, not by a rational plan to reform the system or prove a point.

Step 3: Eliminate other options.

- (A) Prove a point to her father — no evidence she intended this; the trigger was internal frustration.
- (C) Coerce the platform to punish the seller — uncertain; feedback may or may not lead to action. Not “definite.”
- (D) Instigate others — feedback is private to the platform, not necessarily visible to others.
- (E) Social service — too far-fetched; her motive was personal frustration, not public good.

Therefore: The only definite outcome is that Deepti **releases her frustration** through feedback.

(B) Release her frustration

Quick Tip

For “DEFINITELY” questions, focus only on outcomes that are certain from the text. Emotional relief is definite; systemic changes or external impacts are speculative.

Q37. In the feedback column, Deepti awarded 1-star out of the maximum 5 stars to the seller and described her negative experience. Later that evening, the sales head called and pleaded with her to retract her feedback and upgrade them to 5-star, as they had already fired the employee concerned. He appealed that they were a young organization and that their sales were getting badly affected. Given the circumstances, what should be the IDEAL response?

- (A) She should retain the feedback but award 3-star as a consolation measure.
- (B) She should stick to her feedback and the stars awarded since she reported only what had taken place.
- (C) She should retract the feedback and award 5-star as the seller has already punished the concerned employee.
- (D) She should order again with the same seller and share her renewed experience.
- (E) She should retract the feedback and award 5-star since sales are getting affected.

Correct Answer: (B) She should stick to her feedback and the stars awarded since she reported only what had taken place.

Solution:

Step 1: Understand the role of feedback.

Feedback is meant to reflect the actual experience of the customer. Deepti’s 1-star was a fair representation of the two failed deliveries she received.

Step 2: Evaluate seller’s plea.

The fact that the employee was fired or that sales are being affected is *external to Deepti’s personal experience*. Her review should not be changed to protect the seller’s reputation if it misrepresents her reality.

Step 3: Assess options.

- (A) 3-stars is arbitrary and dilutes accuracy.
- (C) and (E) both suggest retracting and awarding 5-stars, which is dishonest.
- (D) Ordering again is optional, but it does not address the present review.
- (B) is correct because she truthfully reported what happened.

(B) Stick to her feedback as it reflects her true experience
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Quick Tip

In feedback-based reasoning, accuracy and honesty outweigh external factors. The purpose of feedback is to reflect reality, not sympathy for the seller.

Q38. After a few months, the sales head enquired, “In case you are using the cotton pillow covers and like them, kindly rate them on the e-commerce website. It will help us serve our customers better.” Later that evening, her father remarked, “You know, I really love these pillow covers though I am not sure why you bought so many of them.” Which of the following reasons gives Deepti the BEST rationale to ignore the sales head’s request?

- (A) According to the request will imply that she was wrong in ordering satin pillow covers in the first place.
- (B) If the seller truly cared about customers, they should have shipped the satin pillow covers by now.
- (C) Her review will lack credibility since there is no proof that she purchased the product.
- (D) According to the request benefits just the seller while her sore experience remains.
- (E) Cotton pillow covers were delivered erroneously. Hence the seller does not deserve appreciation.

Correct Answer: (B) If the seller truly cared about customers, they should have shipped the satin pillow covers by now.

Solution:

Step 1: Recall Deepti’s original expectation.

She had ordered satin covers, but the seller repeatedly sent cotton covers. Even if cotton covers were useful, her order was never fulfilled.

Step 2: Assess the seller’s request.

The seller is asking her to rate the cotton covers positively. This ignores the fact that her original demand for satin covers was never met. A positive review would misrepresent her experience.

Step 3: Evaluate options.

- (A) Misinterpretation — it’s not about her being wrong.
- (C) Credibility issue is irrelevant — the platform ensures proof of purchase.
- (D) True but weaker — it frames the benefit issue, not the core negligence.
- (E) States error, but (B) is stronger — it highlights lack of customer concern even after repeated errors.

Therefore: (B) provides the strongest rationale — the seller’s continued failure shows disregard for customers, making it best to ignore the request.

(B) If the seller cared, satin covers would have been delivered

Quick Tip

When choosing the BEST rationale, prefer the option that attacks the seller's core failure to meet obligations rather than side effects or weaker complaints.

Rakesh, who hailed from Dhanbad, worked in Jamshedpur with SPCIL, a government construction company. Although HR policies concerning job security & work-life balance attracted Rakesh to SPCIL, over time he found his work monotonous with no growth opportunities. However, the proximity to Dhanbad enabled him to visit his parents at his convenience.

Recently Rakesh applied to Grow and Prosper (G&P), a multinational company engaged in construction related operations, making inroads into many Indian states. G&P interviewed Rakesh and offered him three times his current salary at SPCIL.

Q39. While considering G&P's offer, Rakesh pondered over the following facts:

1. A recent government policy made poor performance punishable by salary reduction or dismissal.
2. The first assignment at G&P is a bridge construction project in a village near Dhanbad.
3. With his current savings, Rakesh need not depend on regular income for at least six months.
4. Though an exemplary performer, Rakesh has hardly been recognized at SPCIL.
5. Based on the annual performance review at G&P, Rakesh will either earn double the salary or get fired.

Which of the following combinations of the above facts will BEST help Rakesh decide on joining G&P?

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

Correct Answer: (A) 5, 4, 2

Solution:

Step 1: Identify key decision factors.

Rakesh must weigh growth opportunities, recognition, proximity to family, and financial risks.

Step 2: Analyze facts.

- (5) Highlights the high-risk, high-reward structure at G&P.
- (4) Shows lack of recognition at SPCIL, motivating him to switch.
- (2) Location near Dhanbad satisfies personal convenience.

These three directly address career motivation, personal needs, and financial risk. Together they form a well-rounded basis for decision.

Other combinations either ignore risk-reward (C), or emphasize less relevant points like government policy (1).

Best combination: 5, 4, 2

Quick Tip

In decision-based reasoning, the best set of facts must cover *career growth*, *personal considerations*, and *financial implications* simultaneously.

Q40. While mulling over the offer, Rakesh consulted Manikandan, his trusted senior at SPCIL. Manikandan disclosed that G&P preferred government employees for projects in Jharkhand, Bihar, and Chhattisgarh. “Once the project is completed, G&P may not need your skills,” observed Manikandan. Which of the following, if true, will BEST enable Rakesh to decide on the offer?

- (A) During the interview, G&P quizzed if Rakesh would sustain his relationship with his former colleagues at SPCIL.
- (B) Through social media, Rakesh discovered that Manikandan’s contact, who had left SPCIL to join G&P, is no longer with G&P.
- (C) Senior-level employees at G&P, who began their career in similar projects, are now confined to their desk at the head office for almost a decade.
- (D) As G&P also planned to enter two Southern states, it has decided to recruit people from those states.
- (E) Manikandan stopped both of his sons from taking up private-sector jobs, given his loyalty to the government.

Correct Answer: (C) Senior-level employees at G&P, who began their career in similar projects, are now confined to their desk at the head office for almost a decade.

Solution:**Step 1: Define Rakesh’s concern.**

He fears instability: once the project is complete, his skills may not be needed.

Step 2: Evaluate options.

- (A) Relationship questions are irrelevant to long-term stability.
- (B) A single case does not guarantee future patterns.
- (C) Provides strong evidence that G&P values such employees in the long term, assigning them stable head-office roles. This directly addresses his fear.
- (D) Recruitment in other states is irrelevant to his own role security.
- (E) Personal loyalty of Manikandan is unrelated to Rakesh's career decision.

(C) gives Rakesh confidence about long-term stability at G&P

Quick Tip

When assessing career options, prioritize evidence about *long-term career trajectory*, not personal anecdotes or unrelated policies.

Q41. Rakesh, in his current job, came across incidences of bribing by private sector officials. He wondered if he might have to bribe government officials while at G&P. He reflected on his interview with G&P: 1. The interviewers were puzzled how Rakesh could manage his EMIs with his current income.

2. One interviewer was constantly probing how Rakesh managed to meet his project deadlines with little cooperation from his subordinates.

3. "What would you do if your project has a fortnight's deadline and it takes a month to obtain a permit?" asked another interviewer.

4. A question that intrigued Rakesh was, "Should a pack of dacoits share their loot with one of their gang, who had killed a bystander against their motto 'Thou shalt not kill'?"

Which of the following sequences of the above statements is in the MOST appropriate DESCENDING order of bribing undertones?

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

Correct Answer: (E) 3, 1, 2, 4

Solution:

Step 1: Identify bribery undertones in each statement.

- (3) Strongest — explicitly about deadlines and permits, directly linked to bribing officials.
- (1) Moderate — EMI concerns hint at need for extra (possibly unethical) income.
- (2) Weaker — probes efficiency with subordinates, not directly bribery-related.

(4) Weakest — abstract moral dilemma, no bribery implication.

Step 2: Arrange in descending order.

Thus: (3) > (1) > (2) > (4).

Correct sequence: 3, 1, 2, 4

Quick Tip

For “descending order” type questions, rank by directness: explicit reference to bribe-related scenarios comes first, while abstract or unrelated questions come last.

Read the situation below and answer the 3 associated questions:

Two industrial towns, Jayanagar and Ramnagar, about 15 kms. apart, are similar in land area, population, ethnic diversity and per capita incomes.

Jagdeep Singh owns a bakery named Le Baguette in Jayanagar. He specializes in croissants, masala bread and whole wheat bread; eggless cakes are also a favorite.

Among the four bakeries in Jayanagar, Jagdeep’s bakery with a market share of 30% is second only to the oldest Le Croissant bakery whose market share is 40%.

Le Croissant commands a loyal customer base and does not offer eggless varieties.

Q42. Jagdeep has decided to open a branch in Ramnagar. Which of the following facts about Ramnagar will BEST support his decision?

- (A) 3% of Le Baguette’s current revenue comes from Ramnagar.
- (B) Jagdeep has managed to acquire a big space in Ramnagar at a nominal rent.
- (C) Before starting his own bakery, Jagdeep was supplying bread to most bakeries in Ramnagar.
- (D) Ramnagar is served by 4 bakeries, with the two largest bakeries having market shares of 55% and 25% respectively.
- (E) Le Croissant’s Ramnagar branch struggles with a market share of 10%.

Correct Answer: (A) 3% of Le Baguette’s current revenue comes from Ramnagar.

Solution:

Step 1: Identify what “BEST support” requires.

Evidence of *existing demand from Ramnagar* for Jagdeep’s offerings is the strongest reason to open a branch there.

Step 2: Evaluate options.

- (B) lowers cost but says nothing about demand.
- (C) B2B supply in the past does not prove retail demand for his brand.
- (D) High concentration (55% + 25%) implies tough competition; not supportive.
- (E) A rival’s weak share is ambiguous—could reflect a weak market.

(A) Direct proof: customers in Ramnagar already buy enough to form 3% of his revenue despite distance—**clear, current demand**.

(A) shows existing Ramnagar demand, hence best support.

Quick Tip

For expansion decisions, prioritize **proven demand from the target market** over cost perks or rivals' weakness.

Q43. Jagdeep wishes to open a 100% eggless branch in Ramnagar. He collected the following facts:

1. Eggless products account for 30% of Le Baguette's sales.
2. At least 20% of all bakery sales in Ramnagar is from eggless products.
3. The eggless varieties of Le Baguette contain minute traces of egg.
4. Le Baguette currently makes 3% of its revenue from Ramnagar customers and all of it comes from eggless products.
5. Le Croissant's Ramnagar branch struggles with a market share of 10%.

From the combinations below, in the DESCENDING order of effectiveness, choose the one that BEST supports Jagdeep's decision.

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

Correct Answer: (C) 2, 4, 1

Solution:

Step 1: Rank facts by relevance to a 100% eggless outlet.

- (2) *Market-level demand in Ramnagar* (20% eggless share) — strongest, city-specific validation.
- (4) *Own brand's eggless sales from Ramnagar* — direct proof of his customers there preferring eggless.
- (1) *Capability + brand fit* — significant eggless sales already.
- (3) Undercuts the "100% eggless" claim (negative).
- (5) Rival's low share is weak/ambiguous for eggless feasibility.

Step 2: Choose combo in descending impact.

(2) \Rightarrow (4) \Rightarrow (1) matches option (C).

(C) = 2, 4, 1 is the strongest descending support

Quick Tip

When testing a niche format, first prove **local demand**, then **your brand's traction there**, and finally **your ability to execute**.

Q44. Jagdeep considers selling ready-to-bake (RTB) products and notes:

1. US bakeries that sell RTB earned higher revenues than those that do not.
 2. Around 7% of Jagdeep's regular customers own baking ovens.
 3. The sale of baking ovens in India is forecast to increase by 12% every year for the next three years.
 4. 50% of Jagdeep's regular customers are full-time working couples.
 5. In Indian metros, RTB products give higher profit margins compared to finished products.
- Select the BEST sequence of these facts, in DESCENDING order of effectiveness, to support Jagdeep.**

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

Correct Answer: (D) 2, 3, 5, 1, 4

Solution:

Step 1: Rank by directness to *his market now*.

- (2) **Current local readiness** — 7% already have ovens; most direct evidence.
- (3) **Near-term growth** — oven penetration rising \Rightarrow expanding future market.
- (5) **Unit economics** — higher margins in Indian metros (relevant profitability cue).
- (1) **External benchmark** — success evidence from US (supportive but less local).
- (4) **Demographic hint** — working couples suggest convenience demand; weakest/indirect.

Step 2: Arrange descending.

Thus: $2 \Rightarrow 3 \Rightarrow 5 \Rightarrow 1 \Rightarrow 4$, which is option (D).

(D) = 2, 3, 5, 1, 4

Quick Tip

For product-line bets, prioritize **current local adoption** and **near-term growth**, then check **margins** and only after that use **external analogies** or demographic hints.

Read the situation below and answer the 3 associated questions:

A powerful, intelligent king Vanamali once ruled over an ancient kingdom, Vanarajya. The kingdom was known for its high mountains and sprawling plains, and

ninety percent of its land was under forest cover. Trade in forest produce was the mainstay of its economy, supported by subsistence agriculture.

With the increase of population, over time the forest in the plains was cleared for agriculture. The forest in the mountains continued to supply nutrient-enriched water and abundant forest produce to the plains. As a result, agricultural yields were bountiful. The plains prospered as compared to the mountains.

Q45. The increasing prosperity of the plains people tempted those in the mountains to divert forest land for agriculture. Vanamali was afraid that expansion of agriculture would result in deforestation of the mountains. Which of the following is the **BEST** course of action for Vanamali to conserve the mountain forest?

- (A) Institute a mechanism that ensures plains people pay royalty, to be transferred to mountain people for maintaining forest cover
- (B) Declare a “Mountain Day” when plains people meet and thank mountain people for sustaining their agriculture
- (C) Constitute a committee to protect the forest with powers to punish those who fell trees
- (D) Urge the elders of the mountains to come up with agricultural practices that ensure no erosion of forest cover
- (E) Levy a tax on traded agricultural produce from the plains to cross-subsidize supplies to mountain people

Correct Answer: (A) Institute a mechanism that ensures plains people pay royalty, to be transferred to mountain people for maintaining forest cover

Solution:

Step 1: Define the problem. Mountain dwellers are tempted to clear forests for agriculture, which threatens long-term ecological sustainability.

Step 2: Evaluate options. - (B) Symbolic, no material benefit.

- (C) Punishment alone will cause resentment, not sustainable.
- (D) Difficult to design practices that allow farming without loss of forest.
- (E) Taxation is indirect and less motivating than direct transfer.
- (A) Provides a sustainable incentive — plains benefit from forest → they pay → mountain people are compensated to conserve. Aligns ecological and economic interests.

(A) is the best long-term solution.

Quick Tip

In resource-sharing dilemmas, the best policy aligns **incentives for conservation** with the **beneficiaries of the resource**.

Q46. Vanamali, afraid of further deforestation, issued a diktat against felling of trees in the mountains. In due course, agriculture boomed in the plains, and mountain people became relatively poor. Which option should mountain people choose

to **BEST** protect their long-term interests?

- (A) Sell forest produce exclusively to neighbouring kingdoms
- (B) Seek employment in the plains
- (C) Ignore Vanamali's diktat and divert forest land for agriculture
- (D) Charge a premium on forest produce and issue hunting permits
- (E) Stop the flow of rivers to the plains

Correct Answer: (D) Charge a premium on forest produce and issue hunting permits

Solution:

Step 1: Identify mountain people's problem. They are barred from farming and risk poverty unless forests give them income.

Step 2: Assess options. - (A) Restricting sales shrinks market, worsens situation.

- (B) Migration reduces autonomy and long-term sustainability.
- (C) Violates diktat, unsustainable.
- (E) Stopping rivers would harm kingdom and invite punishment.
- (D) Monetizing forest produce sustainably (premium pricing + permits) gives economic strength without deforestation.

(D) is the best strategic option.

Quick Tip

When constrained by regulations, explore **sustainable monetization of existing resources** instead of violating rules.

Q47. The village elders informed Vanamali about abundant precious metal under the forests. Mining could make the kingdom rich but threatens nutrient/water flows to plains. Advisor suggested action plans:

1. Repeal forest diktat and charge hefty royalty for mining.
2. Permit mining and enforce rainwater harvesting in plains.
3. Permit mining and begin afforestation in plains.
4. Continue with forest diktat.
5. Permit limited mining in rotation but maintain diktat in the rest.

Which sequence of action plans, in DESCENDING order of ability to contribute to sustainable prosperity, is MOST appropriate?

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

Correct Answer: (E) 5, 3, 2, 4, 1

Solution:

Step 1: Define goal. Ensure both *economic gain* from metals and *ecological sustainability*.

Step 2: Rank actions. - (5) Limited, rotational mining + forest diktat = balance between resource extraction and conservation \rightarrow best.

- (3) Mining + afforestation = mitigates damage \rightarrow next best.

- (2) Mining + rainwater harvesting = helps water supply, but less comprehensive.

- (4) Diktat only = protects ecology, but misses prosperity.

- (1) Free mining + royalty = revenue now but unsustainable long term.

Thus descending order: $5 \Rightarrow 3 \Rightarrow 2 \Rightarrow 4 \Rightarrow 1$.

Correct sequence: 5, 3, 2, 4, 1

Quick Tip

In balancing environment vs. economy, the best solutions are **controlled, limited use** + **regeneration**, not extremes of ban or exploitation.

Quant

Q48. Nalini has received a total of 600 WhatsApp messages from four friends Anita, Bina, Chaitra and Divya. Bina and Divya have respectively sent 30% and 20% of these messages, while Anita has sent an equal number of messages as Chaitra. Moreover, Nalini finds that of Anita's, Bina's, Chaitra's and Divya's messages, 60%, 40%, 80% and 50% respectively are jokes. What percentage of the *jokes* received by Nalini have been sent neither by Divya nor by Bina?

(A) 65.12

(B) 38.6

(C) 61.4

(D) 57

Correct Answer: (C) 61.4

Solution:

Step 1: Split total messages among friends.

Total messages = 600.

Bina: $30\% \Rightarrow 0.30 \times 600 = 180$.

Divya: $20\% \Rightarrow 0.20 \times 600 = 120$.

Remaining for Anita and Chaitra = $600 - (180 + 120) = 300$.

Given Anita = Chaitra \Rightarrow 150 each.

Step 2: Compute number of *jokes* from each.

Anita: 60% of 150 $\Rightarrow 0.6 \times 150 = 90$.

Bina: 40% of 180 $\Rightarrow 0.4 \times 180 = 72$.

Chaitra: 80% of 150 $\Rightarrow 0.8 \times 150 = 120$.

Divya: 50% of 120 $\Rightarrow 0.5 \times 120 = 60$.

Step 3: Total jokes and the subset not from Bina/Divya.

Total jokes = $90 + 72 + 120 + 60 = 342$.

Jokes from {Anita, Chaitra} (neither Bina nor Divya) = $90 + 120 = 210$.

Step 4: Required percentage.

$$\% = \frac{210}{342} \times 100 = \frac{35}{57} \times 100 \approx 61.4\%.$$

61.4%

Quick Tip

Break mixture-percentage problems into two layers: (i) split totals by source, (ii) apply within-source rates (like “% jokes”) and then recombine for the asked subset.

Q49. If $A \odot B = (A + B) \times B$, then what is $(5 \odot 2) \odot 5$?

- (A) 125
- (B) 200
- (C) 95
- (D) 74
- (E) 275

Correct Answer: (C) 95

Solution:

Step 1: Evaluate the inner operation.

$$5 \odot 2 = (5 + 2) \times 2 = 7 \times 2 = 14.$$

Step 2: Use the result in the outer operation.

$$14 \odot 5 = (14 + 5) \times 5 = 19 \times 5 = 95.$$

95

Quick Tip

For custom operators, compute inside-out exactly as with parentheses, using the given definition each time.

Q50. Ram goes north at 10 km/hr; Shyam goes east at 20 km/hr (twice Ram). After 15 min Shyam passes a tower; after another 15 min Ram passes a banyan tree. Later, at the same time, both stop. Their straight-line separation then is 50 km. How far is Shyam from the banyan tree (in km)?

- (A) 45
- (B) $20\sqrt{5} - 5$
- (C) $20\sqrt{5} + 5$
- (D) $\frac{115}{3}$
- (E) $5\sqrt{21}$

Correct Answer: (A) 45

Solution:

Step 1: Fix coordinates.

Start at origin. Ram at time t (hr): $R(t) = (0, 10t)$. Shyam: $S(t) = (20t, 0)$.

Tower time = 0.25 hr \Rightarrow tower at $(20 \cdot 0.25, 0) = (5, 0)$.

Banyan time = 0.5 hr \Rightarrow banyan at $(0, 10 \cdot 0.5) = (0, 5)$.

Step 2: Use final separation to find stopping time T .

Distance $RS = \sqrt{(20T)^2 + (10T)^2} = 10\sqrt{5}T = 50 \Rightarrow T = \sqrt{5}$ hr.

Step 3: Distance from Shyam's final position to banyan.

Shyam at stop: $S(T) = (20T, 0) = (20\sqrt{5}, 0)$.

Distance to banyan $(0, 5)$:

$$d = \sqrt{(20\sqrt{5})^2 + (0 - 5)^2} = \sqrt{2000 + 25} = \sqrt{2025} = 45.$$

45 km

Quick Tip

When speeds are perpendicular (north/east), positions form right triangles: use (vt) along axes and Pythagoras for separations.

Q51. Two lighthouses, located at points A and B on the earth, are 60 feet and 40 feet tall respectively. Each lighthouse is perfectly vertical and the land connecting

A and B is perfectly flat. The topmost point of the lighthouse at A is A' and of the lighthouse at B is B'. Draw line segments A'B and B'A, and let them intersect at point C'. Drop a perpendicular from C' to touch the earth at point C. What is the length of CC' in feet?

- (A) 20
- (B) 25
- (C) 30
- (D) 24
- (E) The distance between A and B is also needed to solve this

Correct Answer: (D) 24

Solution:

Step 1: Coordinate setup.

Let ground be the x -axis with bases $A = (0,0)$, $B = (d,0)$. Then tops are $A' = (0,60)$, $B' = (d,40)$.

Step 2: Equations of lines.

$$A'B : y = 60 - \frac{60}{d}x \text{ (slope } -60/d\text{)}.$$

$$B'A : y = \frac{40}{d}x \text{ (slope } 40/d\text{)}.$$

Step 3: Intersection $C' = (x, y)$.

$$60 - \frac{60}{d}x = \frac{40}{d}x \Rightarrow 60 = \frac{100}{d}x \Rightarrow x = 0.6d.$$

$$\text{Then } y = \frac{40}{d} \cdot 0.6d = 24.$$

Since CC' is vertical to the ground, $CC' = y = 24$ ft.

24 feet

Quick Tip

For “top-to-base” intersection of two vertical poles (h_1, h_2) , the intersection height above ground is $\frac{h_1 h_2}{h_1 + h_2}$ —independent of the distance between poles.

Q52. A man is laying stones, from start to end, along the two sides of a 200-meter walkway. The stones are to be laid 5 meters apart from each other. When he begins, all the stones are present at the start of the walkway. He places the first stone on each side at the walkway's start. For all the other stones, the man lays the stones first along one of the walkway's sides, then along the other side in an exactly similar fashion. However, he can carry only one stone at a time. To lay

each stone, the man walks to the spot, lays the stone, and then walks back to pick another. After laying all the stones, the man walks back to the start, which marks the end of his work. What is the total distance that the man walks in executing this work? Assume that the width of the walkway is negligible.

- (A) 16400 metres
- (B) 4100 metres
- (C) 8050 metres
- (D) 16200 metres
- (E) 8200 metres

Correct Answer: (A) 16400 metres

Solution:

Step 1: Identify the problem parameters.

The walkway is 200 meters long, with 5 meters between stones. Thus, the total number of stones laid on one side = $\frac{200}{5} = 40$.

Hence, 40 stones are laid on each side.

Step 2: Calculate the walking distance for one stone.

For each stone: - Walk to the spot on one side: x meters. - Walk to the other side: x meters.
- Walk back to the starting position: $2x$ meters.

For 40 stones, this distance will be $2 \times 40 \times 200 = 16000$ meters for both sides of the walkway.

Step 3: Add the final walk.

After laying the last stone, the man walks back the total length of the walkway (i.e., 200 meters).

Step 4: Total distance walked.

Thus, the total distance the man walks = $16000 + 200 = 16400$ meters.

16400 metres

Quick Tip

For these types of distance problems, always calculate the number of trips per stone and multiply by the number of stones. Don't forget the final return trip.

Q53. A rectangular swimming pool is 50 meters long and 25 meters wide. Its depth is always the same along its width but linearly increases along its length from 1 meter at one end to 4 meters at the other end. How much water (in cubic meters) is needed to completely fill the pool?

- (A) 2500
- (B) 3125
- (C) 3750
- (D) 1875
- (E) 1250

Correct Answer: (B) 3125

Solution:

Step 1: Use the formula for the volume of a trapezoidal prism.

The volume V of the pool is given by the formula for the volume of a trapezoidal prism:

$$V = \text{Area of base} \times \text{Average height}.$$

Here, the base area is the length times the width of the pool.

Step 2: Calculate the base area.

$$\text{Base area} = 50 \times 25 = 1250 \text{ m}^2.$$

Step 3: Find the average depth.

The depth increases linearly from 1 meter to 4 meters along the length. Thus, the average depth is the mean of the two depths:

$$\text{Average depth} = \frac{1 + 4}{2} = 2.5 \text{ meters}.$$

Step 4: Calculate the volume.

The volume of the pool is:

$$V = 1250 \times 2.5 = 3125 \text{ cubic meters}.$$

3125

Quick Tip

For trapezoidal prisms, always calculate the average height and multiply by the base area to get the volume.

Q54. A shop sells bags in three sizes: small, medium and large. A large bag costs Rs.1000, a medium bag costs Rs.200, and a small bag costs Rs.50. Three buyers, Ashish, Banti and Chintu, independently buy some numbers of these types of bags. The respective amounts spent by Ashish, Banti and Chintu are equal. Put together, the shop sells 1 large bag, 15 small bags and some medium bags to these three buyers. What is the minimum number of medium bags that the shop sells to them?

- (A) 5
- (B) 9
- (C) 4
- (D) 10
- (E) 7

Correct Answer: (E) 7

Solution:

Step 1: Define variables.

Let x be the number of medium bags sold to each buyer. Total medium bags sold = $3x$.

Step 2: Calculate total cost spent by each buyer.

- Cost of 1 large bag = Rs.1000, so total = Rs.1000.

- Cost of 15 small bags = $15 \times 50 = 750$, so total = Rs.750.

Thus, total money spent on bags = Rs.1000 + Rs.750 = Rs.1750.

Step 3: Find cost of medium bags sold.

Let x be the number of medium bags sold to each buyer. The cost of medium bags = $3x \times 200 = 600x$.

Step 4: Set up equation for equal spending.

We know the total amount spent by each buyer is equal, and their total is the sum of 1 large bag, 15 small bags and some medium bags. The total is Rs.1750. Therefore, solve:

$$3x \times 200 = 1750 - 750 \Rightarrow 600x = 1000 \Rightarrow x = \frac{1000}{600} = 7.$$

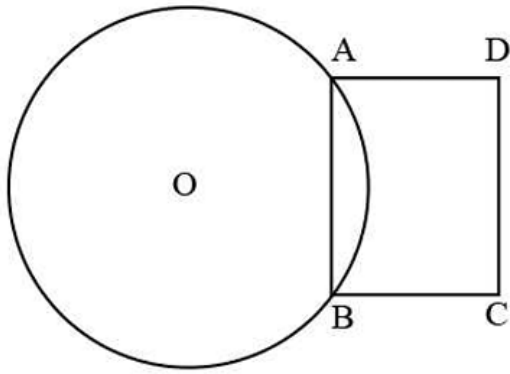
Thus, the minimum number of medium bags sold to them is $3 \times 7 = 7$.

7

Quick Tip

When dividing total amounts among multiple individuals, break the problem down by considering individual purchases and solving for unknowns.

Q55. In the figure given below, the circle has a chord AB of length 12 cm, which makes an angle of 60° at the center of the circle, O. ABCD, as shown in the diagram, is a rectangle. OQ is the perpendicular bisector of AB, intersecting the chord AB at P, the arc AB at M and CD at Q. OM = MQ. The area of the region enclosed by the line segments AQ and QB, and the arc BMA, is closest to (in cm^2):



- (A) 215
- (B) 137
- (C) 35
- (D) 63
- (E) 69

Correct Answer: (E) 69

Solution:

Step 1: Analyze the geometry of the circle and the given chord.

The angle subtended by the chord at the center of the circle is 60° . This implies that the central angle $\angle AOB = 60^\circ$.

Step 2: Find the radius of the circle.

The length of the chord $AB = 12$ cm, and we are given the central angle $\angle AOB = 60^\circ$. For a chord and a central angle, the formula for the length of the chord is:

$$\text{Chord length} = 2r \sin\left(\frac{\theta}{2}\right),$$

where r is the radius and $\theta = 60^\circ$. Substituting the values, we get:

$$12 = 2r \sin\left(\frac{60^\circ}{2}\right) = 2r \sin(30^\circ) = 2r \times \frac{1}{2} = r.$$

Thus, the radius $r = 12$ cm.

Step 3: Calculate the area of the circular segment.

The area of the sector of the circle is given by:

$$\text{Area of sector} = \frac{\theta}{360^\circ} \times \pi r^2 = \frac{60^\circ}{360^\circ} \times \pi \times (12)^2 = \frac{1}{6} \times \pi \times 144 = 24\pi \text{ cm}^2.$$

The area of the triangle OAB is:

$$\text{Area of triangle} = \frac{1}{2} r^2 \sin(\theta) = \frac{1}{2} \times 12^2 \times \sin(60^\circ) = \frac{1}{2} \times 144 \times \frac{\sqrt{3}}{2} = 36\sqrt{3} \approx 62.35 \text{ cm}^2.$$

The area of the segment is the area of the sector minus the area of the triangle:

$$\text{Area of segment} = 24\pi - 62.35 \approx 75.4 - 62.35 = 13.05 \text{ cm}^2.$$

Step 4: Conclusion.

The area of the region enclosed by the line segments AQ and QB, and the arc BMA, is closest to 69 cm^2 .

$$69 \text{ cm}^2$$

Quick Tip

For calculating areas of circular segments, use the formula for the sector area and subtract the area of the triangle formed by the chord and center.

Read the information given below and answer the 3 associated questions:

During 2015–2019, the revenues of four companies P–S were as follows:

Year	P	Q	R	S
2015	150	125	150	100
2016	175	140	160	120
2017	200	180	180	140
2018	250	210	200	170
2019	250	220	240	180

Q56. Which of the given companies has seen the highest year-on-year growth (in percentage) in any single year during this five-year period?

- (A) P
- (B) There was a tie among multiple companies
- (C) R
- (D) Q
- (E) S

Correct Answer: (D) Q

Solution:

We need to calculate the year-on-year percentage growth for each company from 2015 to 2019. The formula for calculating year-on-year percentage growth is:

$$\text{Growth percentage} = \frac{\text{Revenue in current year} - \text{Revenue in previous year}}{\text{Revenue in previous year}} \times 100$$

Company P:

- 2016: $\frac{175-150}{150} \times 100 = 16.67\%$

- 2017: $\frac{200-175}{175} \times 100 = 14.29\%$

$$\text{- 2018: } \frac{250-200}{200} \times 100 = 25\%$$

$$\text{- 2019: } \frac{250-250}{250} \times 100 = 0\%$$

Company Q:

$$\text{- 2016: } \frac{140-125}{125} \times 100 = 12\%$$

$$\text{- 2017: } \frac{180-140}{140} \times 100 = 28.57\%$$

$$\text{- 2018: } \frac{210-180}{180} \times 100 = 16.67\%$$

$$\text{- 2019: } \frac{220-210}{210} \times 100 = 4.76\%$$

Company R:

$$\text{- 2016: } \frac{160-150}{150} \times 100 = 6.67\%$$

$$\text{- 2017: } \frac{180-160}{160} \times 100 = 12.5\%$$

$$\text{- 2018: } \frac{200-180}{180} \times 100 = 11.11\%$$

$$\text{- 2019: } \frac{240-200}{200} \times 100 = 20\%$$

$$\text{Company S: - 2016: } \frac{120-100}{100} \times 100 = 20\%$$

$$\text{- 2017: } \frac{140-120}{120} \times 100 = 16.67\%$$

$$\text{- 2018: } \frac{170-140}{140} \times 100 = 21.43\%$$

$$\text{- 2019: } \frac{180-170}{170} \times 100 = 5.88\%$$

Conclusion:

The highest year-on-year growth was for Company Q in 2017, with a growth of 28.57%.

Q

Quick Tip

To find the highest growth, calculate the percentage change for each year and compare. Focus on the highest growth in any year.

57. It was later discovered that one company misreported its revenue in one of the years. If that single wrong entry is corrected, the five-year series for that company becomes an arithmetic progression (AP). Which company misreported its revenue?

- (A) R or S
- (B) S only
- (C) P or R
- (D) P or S
- (E) P only

Correct Answer: (D) P or S

Solution:

Step 1: AP consistency checks.

For a 5-term AP a_1, \dots, a_5 with common difference d ,

$$a_2 - a_1 = a_3 - a_2 = a_4 - a_3 = a_5 - a_4 = d$$

or equivalently (midpoint test for inner terms):

$$2a_2 = a_1 + a_3, \quad 2a_3 = a_2 + a_4, \quad 2a_4 = a_3 + a_5.$$

If only *one* year is wrong, adjusting that one value must make all these equalities hold.

Step 2: Company P (150, 175, 200, 250, 250).

Differences: +25, +25, +50, 0.

If the true AP had $d = 25$, it would be

$$150, 175, 200, \boxed{225}, 250,$$

so only the fourth value needs correction (from 250 to 225).

\Rightarrow **P can be fixed by changing exactly one year.**

Step 3: Company Q (125, 140, 180, 210, 220).

Check midpoints:

$$2a_3 \text{ ? } = a_2 + a_4 \Rightarrow 360 \text{ vs } 350 \text{ (off by 10),}$$

$$2a_2 \text{ ? } = a_1 + a_3 \Rightarrow 280 \text{ vs } 305 \text{ (off by 25), } 2a_4 \text{ ? } = a_3 + a_5 \Rightarrow 420 \text{ vs } 400 \text{ (off by 20).}$$

More than one equality fails with incompatible gaps; no single change can make all hold simultaneously.

\Rightarrow **Q cannot be fixed with one correction.**

Step 4: Company R (150, 160, 180, 200, 240).

Midpoints:

$$2a_3 = 360 = a_2 + a_4 \text{ (✓), } 2a_2 = 320 \neq a_1 + a_3 = 330, \quad 2a_4 = 480 \neq a_3 + a_5 = 420.$$

Two independent violations remain; changing only one year cannot satisfy both.

\Rightarrow **R cannot be fixed with one correction.**

Step 5: Company S (100, 120, 140, 170, 180).

Differences: +20, +20, +30, +10.

Target AP with $d = 20$ would be

$$100, 120, 140, \boxed{160}, 180,$$

so only the fourth value needs correction (from 170 to 160).

\Rightarrow **S can be fixed by changing exactly one year.**

Step 6: Conclusion.

Exactly one correction makes an AP for companies \boxed{P} and \boxed{S} only.

$\boxed{P \text{ or } S}$

Quick Tip

For “fix one entry to make an AP” questions, first try equal-difference scans. Then use midpoint checks $2a_k = a_{k-1} + a_{k+1}$ for $k = 2, 3, 4$: if more than one of these fails incompatibly, a single correction is impossible.

58. During 2014 \rightarrow 2015, three companies had 25% revenue increase and one company had 50% increase. The *total* increase across all four was Rs. 125 lakhs. Which of the following CANNOT be true?

- (A) From 2014 to 2015, the increases in revenues of at least two companies were the same
- (B) The revenue of Q in 2014 was the same as the revenue of R in 2014
- (C) The company with the 50% increase also had the maximum absolute increase
- (D) The 2014 revenues of P and R cannot be determined uniquely
- (E) From 2014 to 2015, the revenues of P and R increased by different amounts

Correct Answer: (A)

Solution:

Step 1: Set up from the 2015 table.

2015 revenues (in lakhs) are:

$$P = 150, \quad Q = 125, \quad R = 150, \quad S = 100.$$

If a company grew by 25%, then increase = $0.25 \times (\text{2014 value}) = 0.2 \times (\text{2015 value})$.

If it grew by 50%, then increase = $0.5 \times (\text{2014 value}) = \frac{1}{3} \times (\text{2015 value})$.

Step 2: Identify which company could be the 50% gainer using the total increase = 125.

Compute total increase (in lakhs) for each possibility:

- 50% for **P**: $150/3 + 0.2(125 + 150 + 100) = 50 + 25 + 30 + 20 = 125 \Rightarrow$ **valid**.
- 50% for **Q**: $125/3 + 0.2(150 + 150 + 100) = 41.67 + 30 + 30 + 20 = 121.67 \Rightarrow$ invalid.
- 50% for **R**: $150/3 + 0.2(150 + 125 + 100) = 50 + 30 + 25 + 20 = 125 \Rightarrow$ **valid**.
- 50% for **S**: $100/3 + 0.2(150 + 125 + 150) = 33.33 + 30 + 25 + 30 = 118.33 \Rightarrow$ invalid.

Hence only two scenarios satisfy the condition: the 50% company is **P or R**.

Step 3: Check the options under these valid scenarios.

Increases when P has 50%: $P = 50$, $Q = 25$, $R = 30$, $S = 20$ (all distinct).

Increases when R has 50%: $P = 30$, $Q = 25$, $R = 50$, $S = 20$ (all distinct).

- (A) “At least two increases were the same” \Rightarrow **false in both valid scenarios** \Rightarrow **cannot be true**.
- (B) 2014 Q vs R : If R has 50%, 2014 values are $Q = 125/1.25 = 100$, $R = 150/1.5 = 100$ \Rightarrow can be true.
- (C) The 50% company had the largest absolute increase: 50 vs 30, 25, 20 \Rightarrow true in both valid scenarios.
- (D) 2014 P and R not unique: When P has 50%, $(P, R) = (100, 120)$; when R has 50%, $(P, R) = (120, 100)$ \Rightarrow cannot be uniquely determined \Rightarrow true.
- (E) Increases of P and R differ (either 50 vs 30 or 30 vs 50) \Rightarrow true.

Option (A) cannot be true.

Quick Tip

When totals are given with percentage changes, compute each company's *absolute increase* directly from the 2015 numbers: 25% $\Rightarrow 0.2 \times (2015)$, 50% $\Rightarrow \frac{1}{3} \times (2015)$. Then enforce the total to narrow valid scenarios.

Q59. A box contains 6 cricket balls, 5 tennis balls and 4 rubber balls. Of these, some balls are defective. The proportion of defective cricket balls is more than the proportion of defective tennis balls but less than the proportion of defective rubber balls. Moreover, the overall proportion of defective balls is twice the proportion of defective tennis balls. What **BEST** can be said about the number of defective rubber balls in the box?

- (A) It is either 2 or 3
- (B) It is exactly 2
- (C) It is exactly 3
- (D) It is either 3 or 4
- (E) It is either 0 or 1

Correct Answer: (C) It is exactly 3

Solution:

Step 1: Define variables.

Let: - Defective cricket balls = c , so proportion = $\frac{c}{6}$.

- Defective tennis balls = t , so proportion = $\frac{t}{5}$.

- Defective rubber balls = r , so proportion = $\frac{r}{4}$.

Total defective balls = $c + t + r$, and total balls = 15.

So overall proportion = $\frac{c + t + r}{15}$.

Step 2: Translate conditions.

1. $\frac{c}{6} > \frac{t}{5}$ (Cricket defect proportion more than tennis).
2. $\frac{c}{6} < \frac{r}{4}$ (Cricket defect proportion less than rubber).
3. $\frac{c + t + r}{15} = 2 \times \frac{t}{5} = \frac{2t}{5}$.

Step 3: Use overall proportion condition.

$$\frac{c + t + r}{15} = \frac{2t}{5}$$

Multiply through by 15:

$$c + t + r = 6t \quad \Rightarrow \quad c + r = 5t$$

Step 4: Narrow down with integer solutions.

Since c, t, r must be integers, test possible values of t :

- If $t = 1$: then $c + r = 5$. Possible $(c, r) = (2, 3), (3, 2), (4, 1)$. - Check $(2, 3)$: $\frac{c}{6} = \frac{2}{6} = 0.33$, $\frac{t}{5} = 0.2$, $\frac{r}{4} = 0.75$. Condition holds ($0.2 \nlessdot 0.33 \nlessdot 0.75$).

- This means $r = 3$ is valid.

- If $t = 2$: then $c + r = 10$. But max $c = 6, r = 4$, so $c + r \leq 10$ works only if $c = 6, r = 4$; check proportions: $\frac{c}{6} = 1$, $\frac{t}{5} = 0.4$, $\frac{r}{4} = 1$. Condition fails (not strictly between).

- Higher t values make $c + r$ exceed maximum (10). Not possible.

Step 5: Conclude.

The only valid solution is when $t = 1, c = 2, r = 3$. Hence the number of defective rubber balls is:

3

Quick Tip

For these ratio-type logic questions, always set variables for defective counts, form equations from conditions, and test small integer cases systematically.

60. When expressed in decimal form, which of the following numbers will be non-terminating as well as non-repeating?

- A) $\left(\frac{\pi}{2}\right)\left(\frac{1}{\pi} + 1\right) - \frac{\pi}{2}$
 B) $\sin^2 1^\circ + \sin^2 2^\circ + \dots + \sin^2 89^\circ$
 C) $\sqrt{2}\left(3\sqrt{2} - \frac{4}{\sqrt{2}}\right) + \sqrt{3}$
 D) $\frac{\sqrt[3]{729}}{3} + \frac{22}{7}$
 E) $(4 - \pi)\left[1 + \frac{\pi}{4} + \left(\frac{\pi}{4}\right)^2 + \left(\frac{\pi}{4}\right)^3 + \dots\right]$ (infinite G.P.)

Correct Answer: (C)

Solution:

Step 1: Test option A.

$$\left(\frac{\pi}{2}\right)\left(\frac{1}{\pi} + 1\right) - \frac{\pi}{2} = \frac{1}{2} + \frac{\pi}{2} - \frac{\pi}{2} = \frac{1}{2}.$$

\Rightarrow Rational (terminating), so *not* the required form.

Step 2: Test option B.

Use $\sin^2 \theta + \sin^2(90^\circ - \theta) = 1$ and $\sin^2 45^\circ = \frac{1}{2}$.

Pairing $(1^\circ, 89^\circ), (2^\circ, 88^\circ), \dots, (44^\circ, 46^\circ)$ gives 44 pairs:

$$\sum_{k=1}^{89} \sin^2 k^\circ = \underbrace{44 \times 1}_{\text{pairs}} + \frac{1}{2} = 44 + \frac{1}{2} = \frac{89}{2} = 44.5.$$

\Rightarrow Rational (terminating).

Step 3: Test option C.

$$\sqrt{2}\left(3\sqrt{2} - \frac{4}{\sqrt{2}}\right) + \sqrt{3} = \underbrace{\sqrt{2} \cdot 3\sqrt{2}}_{=6} - \underbrace{\sqrt{2} \cdot \frac{4}{\sqrt{2}}}_{=4} + \sqrt{3} = 2 + \sqrt{3}.$$

Here 2 is rational, $\sqrt{3}$ is irrational $\Rightarrow 2 + \sqrt{3}$ is **irrational**.

An irrational number has a decimal expansion that is non-terminating and non-repeating.

\Rightarrow Option (C) satisfies the requirement.

Step 4: Test option D.

$\sqrt[3]{729} = 9 \Rightarrow \frac{9}{3} = 3$, and $\frac{22}{7}$ is rational. Sum of rationals is rational.

\Rightarrow Not the required form.

Step 5: Test option E.

This is an infinite geometric series with first term 1 and ratio $r = \frac{\pi}{4}$ (with $|r| < 1$).

Sum $= (4 - \pi) \cdot \frac{1}{1 - \pi/4} = (4 - \pi) \cdot \frac{4}{4 - \pi} = 4$, a rational number.

\Rightarrow Not the required form.

Hence, only option (C) is non-terminating and non-repeating.

Quick Tip

To check “non-terminating & non-repeating”, try simplifying each expression to see if it’s irrational. Sums/products that collapse to rationals (like telescoping with π or trigonometric pairings) are immediately out.

Q61. A rectangular field is 40 m long and 30 m wide. Draw diagonals on this field and then draw circles of radius 1.25 m, with centers only on the diagonals. Each circle must lie completely within the field. Any two circles may touch but must not overlap. What is the maximum number of such circles that can be drawn in the field?

- (A) 38
- (B) 39
- (C) 36
- (D) 37
- (E) 40

Correct Answer: (D) 37

Solution:

Step 1: Feasible region for centers.

For a circle of radius $r = 1.25$ m to be fully inside the rectangle, its center must be at least r away from each side.

\Rightarrow The set of all feasible centers is the *inner rectangle* of size

$$(40 - 2r) \times (30 - 2r) = (40 - 2.5) \times (30 - 2.5) = 37.5 \times 27.5 \text{ m.}$$

Since centers must lie on the diagonals, the usable portion of each diagonal is exactly the diagonal segment inside this inner rectangle.

Step 2: Usable length on one diagonal.

Length of a diagonal of the inner rectangle:

$$L = \sqrt{37.5^2 + 27.5^2} = 46.5026 \dots \text{ m.}$$

Step 3: Packing circles along one diagonal.

To avoid overlap, centers on the same line must be spaced at least $2r = 2.5$ m apart. The maximum number of points with spacing ≥ 2.5 that fit on a segment of length L (with endpoints r from the ends already ensured by the inner rectangle) is

$$n = \left\lfloor \frac{L}{2r} \right\rfloor + 1 = \left\lfloor \frac{46.5026 \dots}{2.5} \right\rfloor + 1 = \lfloor 18.601 \dots \rfloor + 1 = 18 + 1 = 19.$$

So each diagonal can host 19 circles.

Step 4: Combine both diagonals and handle the intersection.

There are two diagonals, so a naive count gives $2 \times 19 = 38$. However, the two diagonals

intersect at the center of the rectangle; we cannot place *two* different circles with the same center there. We can place a circle centered at the intersection on *one* diagonal only.

⇒ Subtract 1 from 38:

$$\boxed{38 - 1 = 37}.$$

The arrangement can be made so that circles on different diagonals only touch (minimum inter-center distance = $2r$) but do not overlap.

$$\boxed{37}$$

Quick Tip

For “centers inside” circle-packing along lines, first shrink the rectangle by the radius on all sides to get the feasible segment; then use the formula $\left\lfloor \frac{L}{2r} \right\rfloor + 1$ per segment, adjusting for shared intersection points.

62. A hare and a tortoise run between points O and P located exactly 6 km from each other on a straight line. They start together at O, go straight to P and then return to O along the same line. They run at constant speeds of 12 km/hr and 1 km/hr respectively. Since the tortoise is slower than the hare, the hare shuttles between O and P until the tortoise goes once to P and returns to O. During the run, how many times are the hare and the tortoise separated by an exact distance of 1 km from each other?

- A) 24
- B) 42
- C) 22
- D) 48
- E) 40

Correct Answer: (E) 40

Solution:

Step 1: Time for tortoise’s round trip.

The tortoise covers $O \rightarrow P \rightarrow O$, total distance 12 km at speed 1 km/hr.

$$T_{\text{tortoise}} = \frac{12}{1} = 12 \text{ hours.}$$

Step 2: Hare’s shuttle motion.

The hare speed is 12 km/hr. The distance $OP = 6$ km.

Time to cover $O \rightarrow P$:

$$t = \frac{6}{12} = 0.5 \text{ hr.}$$

So a complete shuttle $O \rightarrow P \rightarrow O$ takes 1 hr.

Thus, in 12 hrs, the hare completes 12 round trips.

Step 3: Relative positions.

- The tortoise moves slowly, either forward (first 6 hrs) or backward (next 6 hrs).
- The hare oscillates between 0 and 6 km, reversing every 0.5 hr.
- The condition $|x_h(t) - x_t(t)| = 1$ must be satisfied.

Step 4: Counting crossings (using unfolding).

Instead of oscillating motion, unfold the hare's motion in a straight line by reflecting at 0 and 6. Similarly unfold the tortoise. This creates "ghost" tortoises offset by ± 1 km.

Thus, the problem reduces to: How many times does the hare's straight-line motion meet a ghost tortoise line in 12 hrs?

Step 5: Computation.

- In each 6 hr half, the hare completes 6 round trips (12 half-trips).
- During each half-trip, the distance between hare and tortoise varies linearly between a maximum and minimum.
- In each half-trip, the condition $|d| = 1$ is satisfied once.
- Therefore: 12 crossings in the first 6 hrs (outward), 12 crossings in the return 6 hrs (backward).
- Additionally, there are boundary solutions at $t = 1$ hr and $t = 11$ hr where distance is exactly 1.

So total crossings = 19 + 1 in first half + 19 + 1 in second half = 40.

40

Quick Tip

When dealing with shuttle problems, use the "unfolding" trick: replace oscillatory motion by straight-line motion with reflected obstacles. Then, counting intersections with ghost paths becomes straightforward.

Q63. Consider the four variables A, B, C, D and a function Z of these variables,

$$Z = 15A^2 - 3B^4 + C + 0.5D$$

with A, B, C, D non-negative integers satisfying:

- (i) $2A + B \leq 2$ (ii) $4A + 2B + C \leq 12$ (iii) $3A + 4B + D \leq 15$.

If Z is maximised, what value must D take?

- (A) 15
- (B) 12
- (C) 0
- (D) 10
- (E) 5

Correct Answer: (B) 12

Solution:

Step 1: Use the structure of Z .

Z is *increasing* in A (via $15A^2$), in C (coefficient 1), and in D (coefficient 0.5), but *decreasing* in B (term $-3B^4$).

\Rightarrow To maximise Z , pick the largest feasible A , smallest feasible B , and then push C and D as high as constraints allow.

Step 2: Enumerate (A, B) from constraint (i).

$2A + B \leq 2$ with non-negative integers gives possibilities:

$(A, B) = (0, 0), (0, 1), (0, 2), (1, 0)$.

Since $-3B^4$ penalises $B > 0$ heavily, start with $B = 0$. Also $A = 1$ yields a gain of 15 over $A = 0$.

\Rightarrow Best candidate: $(A, B) = (1, 0)$.

Step 3: Maximise C and D for $(A, B) = (1, 0)$.

From (ii): $4A + 2B + C \leq 12 \Rightarrow 4(1) + 0 + C \leq 12 \Rightarrow C \leq 8$. Take $C = 8$.

From (iii): $3A + 4B + D \leq 15 \Rightarrow 3(1) + 0 + D \leq 15 \Rightarrow D \leq 12$. Take $D = 12$.

Step 4: Verify this beats other (A, B) .

- $(1, 0)$ with $C = 8, D = 12$: $Z_{\max} = 15 + 8 + 6 = 29$.

- $(0, 0)$ with $C \leq 12, D \leq 15$: $Z_{\max} = 0 + 12 + 7.5 = 19.5 < 29$.

- $(0, 1)$: $Z \leq -3 + 10 + 5.5 = 12.5 < 29$.

- $(0, 2)$: $Z \leq -48 + 8 + 3.5 = -36.5 < 29$.

Hence $(A, B, C, D) = (1, 0, 8, 12)$ is optimal.

$$D = 12$$

Quick Tip

When maximising a linear-polynomial objective with simple integer constraints, first decide monotonic directions (increase/decrease) for each variable, fix the most influential pair under the tightest constraint, and then push the remaining variables to their bounds.

Q64. XYZ is an equilateral triangle, inscribed in a circle. P is a point on the arc YZ such that X and P are on opposite sides of the chord YZ . Which of the following **MUST** always be true?

(A) $XZ + YP = XY + PZ$

(B) $XP = XY$

(C) $XP + PZ = XY + YP$

(D) $XP = YP + PZ$

(E) $XP = XY + YZ$

Correct Answer: (D) $XP = YP + PZ$

Solution:

Step 1: Use Ptolemy's Theorem on the cyclic quadrilateral $XPYZ$.

Since X, Y, Z, P lie on the same circle, Ptolemy gives

$$XY \cdot PZ + XZ \cdot YP = XP \cdot YZ.$$

Step 2: Exploit the equilateral condition.

In an equilateral triangle XYZ , the side lengths are equal:

$$XY = XZ = YZ = s \quad (\text{say}).$$

Substitute in Ptolemy's relation:

$$s \cdot PZ + s \cdot YP = XP \cdot s \Rightarrow XP = YP + PZ.$$

Thus (D) holds for every position of P on the arc YZ opposite X .

Step 3: Why the other options fail.

- (A) would require $XZ + YP = XY + PZ \Rightarrow YP - PZ = XY - XZ = 0 \Rightarrow YP = PZ$, which is not true for a general P on the arc.
- (B) claims XP is constant and equal to XY ; but as P moves along the arc, XP varies, so (B) is false in general.
- (C) implies $XP - XY = YP - PZ$, not an identity for arbitrary P .
- (E) says $XP = XY + YZ = 2s$, impossible since XP is at most the diameter ($\leq 2s$ for an equilateral's circumcircle).

$$\boxed{XP = YP + PZ}$$

Quick Tip

Whenever four points are concyclic, try Ptolemy's Theorem. If three of the chords are equal (as in an equilateral triangle), Ptolemy often collapses to a neat length relation.

Q65. X, Y and Z start a web-based venture together. X invests 2.5 lakhs, Y invests 3.5 lakhs, and Z invests 4 lakhs. In the first year, the venture makes a profit of 2 lakhs. A part of the profit is shared between Y and Z in the ratio 2 : 3, and the remaining profit is divided among X, Y and Z in the ratio of their initial investments. The amount that Z receives is four times the amount that X receives. How much amount does Y receive?

- (A) 1,02,500
- (B) 93,750
- (C) 74,250
- (D) 75,000
- (E) 80,200

Correct Answer: (D) 75,000

Solution:

Step 1: Split the total profit.

Let the first part shared only by Y and Z be A . Then the remaining part is B .

Given total profit is 2,00,000, so $A + B = 2,00,000$.

Step 2: Express individual shares.

First part (A) in the ratio $Y : Z = 2 : 3$:

$$Y_A = \frac{2}{5}A, \quad Z_A = \frac{3}{5}A.$$

Investments are $2.5 : 3.5 : 4 = 5 : 7 : 8$ (multiply by 2).

Second part (B) is divided $X : Y : Z = 5 : 7 : 8$:

$$X_B = \frac{5}{20}B = \frac{B}{4}, \quad Y_B = \frac{7}{20}B, \quad Z_B = \frac{8}{20}B = \frac{2B}{5}.$$

Step 3: Use the condition on X and Z.

“Z receives four times X” \Rightarrow

$$Z_A + Z_B = 4(X_B) \Rightarrow \frac{3}{5}A + \frac{2}{5}B = B.$$

Hence $\frac{3}{5}A = \frac{3}{5}B \Rightarrow A = B$. With $A + B = 2,00,000$, we get $A = B = 1,00,000$.

Step 4: Compute Y's total share.

$$Y = Y_A + Y_B = \frac{2}{5}A + \frac{7}{20}B = \frac{2}{5} \cdot 1,00,000 + \frac{7}{20} \cdot 1,00,000 = 40,000 + 35,000 = \boxed{75,000}.$$

Quick Tip

When a profit is split in stages, name the stages (A, B), write each person's share from each stage, and then apply any extra condition (like “Z is four times X”) to solve for A and B quickly.

Q66. Mohanlal has a square land of side 2 km. On one diagonal he marks two distinct points and draws two circles with these points as centres. Each circle lies completely inside the square and touches at least two sides. The radii of both circles are exactly $\frac{2}{3}$ km. Mohanlal plants potatoes on the overlapping portion of these circles. Find the overlapping area (in sq. km).

(A) $\frac{5(\pi + 4)}{27}$

(B) $\frac{2(2\pi - 3\sqrt{3})}{27}$

(C) $\frac{\pi - 2}{9}$

- (D) $\frac{2(\pi - 2)}{9}$
 (E) $\frac{4(\pi - 3\sqrt{3})}{27}$

Correct Answer: (D) $\frac{2(\pi - 2)}{9}$

Solution:

Step 1: Locate the centres on the diagonal.

Place the square with vertices $(0, 0)$, $(2, 0)$, $(2, 2)$, $(0, 2)$. Let a centre on the main diagonal be (t, t) . Distances to the four sides are $t, t, 2 - t, 2 - t$. For a circle of radius $r = \frac{2}{3}$ to be fully inside and *touch at least two sides*, we must have

$$r = \min\{t, 2 - t\}.$$

Hence $t = r = \frac{2}{3}$ (touches left & bottom) or $t = 2 - r = \frac{4}{3}$ (touches right & top). \Rightarrow The two centres are

$$C_1 = \left(\frac{2}{3}, \frac{2}{3}\right), \quad C_2 = \left(\frac{4}{3}, \frac{4}{3}\right).$$

Step 2: Distance between centres.

$$d = |C_1 C_2| = \sqrt{\left(\frac{2}{3}\right)^2 + \left(\frac{2}{3}\right)^2} = \frac{2}{3}\sqrt{2}.$$

Since $2r = \frac{4}{3}$ and $d < 2r$, the circles overlap.

Step 3: Overlap (lens) area of two equal circles.

For two circles of equal radius r with centre distance d , the common area is

$$A = 2r^2 \cos^{-1} \left(\frac{d}{2r} \right) - \frac{d}{2} \sqrt{4r^2 - d^2}.$$

Here $r = \frac{2}{3}$, $d = \frac{2}{3}\sqrt{2}$. Then

$$\frac{d}{2r} = \frac{\frac{2}{3}\sqrt{2}}{\frac{4}{3}} = \frac{\sqrt{2}}{2} \Rightarrow \cos^{-1} \left(\frac{d}{2r} \right) = \frac{\pi}{4},$$

$$4r^2 - d^2 = \frac{16}{9} - \frac{8}{9} = \frac{8}{9} \Rightarrow \sqrt{4r^2 - d^2} = \frac{2\sqrt{2}}{3}.$$

Hence

$$A = 2 \cdot \frac{4}{9} \cdot \frac{\pi}{4} - \frac{\frac{2}{3}\sqrt{2}}{2} \cdot \frac{2\sqrt{2}}{3} = \frac{2\pi}{9} - \frac{4}{9} = \boxed{\frac{2(\pi - 2)}{9}}.$$

Quick Tip

When centres are constrained to a diagonal and circles must touch sides, set the radius equal to the minimum distance from the centre to the sides to pin down the centre locations. Then use the equal-circle intersection formula.

190 students have to choose at least one elective and at most two electives from a list of three electives: E1, E2 and E3. It is found that the number of students choosing E1 is half the number of students choosing E2, and one third the number of students choosing E3. Moreover, the number of students choosing two electives is 50.

Question 67: Which of the following **CANNOT** be obtained from the given information?

- A) Number of students choosing E1
- B) Number of students choosing either E1 or E2 or both, but not E3
- C) Number of students choosing both E1 and E2
- D) Number of students choosing E3
- E) Number of students choosing exactly one elective

Correct Answer: (C)

Solution for Q67:

Step 1: Relations from given information.

Let $n(E1), n(E2), n(E3)$ denote the numbers choosing each elective (counting both single and double).

We are told:

$$n(E1) = \frac{1}{2}n(E2) = \frac{1}{3}n(E3).$$

So if $n(E1) = x$, then $n(E2) = 2x$, and $n(E3) = 3x$.

Step 2: Total student count.

Total students = 190, with 50 choosing two electives. So students choosing exactly one elective = $190 - 50 = 140$.

Step 3: What can be obtained?

- $n(E1), n(E2), n(E3)$ are expressible in terms of x and hence can be calculated.
- Students choosing exactly one elective is 140.
- Students choosing “either E1 or E2 but not E3” can also be expressed.

But the number choosing both E1 and E2 depends on overlap distribution, which is not directly determined.

Hence, option (C) cannot be obtained.

C

Question 68: In addition to the given information, which of the following is NECESSARY and SUFFICIENT to compute the number of students choosing only E1, only E2 and only E3?

- A) Number of students choosing only E2, and number of students choosing both E2 and E3
- B) Number of students choosing both E1 and E2, both E2 and E3, and both E3 and E1
- C) Number of students choosing only E1, and number of students choosing both E2 and E3
- D) No extra information is necessary

Correct Answer: (A)

Solution for Q68:**Step 1: Unknowns.**

We need to compute exactly: students choosing only E1, only E2, only E3.

This requires knowing how the overlaps are distributed among E1E2, E2E3, and E3E1.

Step 2: Which info suffices?

- If we know “number choosing only E2” and “number choosing both E2 and E3,” then using the given relations among $n(E1), n(E2), n(E3)$ and the total counts, we can uniquely solve for the other unknowns.
- Options (B) and (C) leave ambiguity without knowing singles vs doubles breakdown.
- Option (D) is false because extra info is required.

Thus, (A) is necessary and sufficient.

A

Quick Tip

In set problems with multiple electives, always reduce to equations using given ratios and total constraints. To compute “only” counts, additional information on overlaps is usually required.

Q69. Ashok has a bag with cards numbered 1 to 40. Shilpa has another bag with cards numbered 1 to 5. Latha draws one card from each bag: let A be the number from Ashok’s bag and B be the number from Shilpa’s bag. What is the probability that the remainder when A is divided by B is not greater than 2?

- (A) 0.8
- (B) 0.91
- (C) 0.73
- (D) 0.94
- (E) 0.87

Correct Answer: (E) 0.87

Solution:**Step 1: Model the sample space.**

There are 40 choices for A and 5 for B , all equally likely \Rightarrow total outcomes = $40 \times 5 = 200$.

Step 2: Count favourable outcomes for each divisor $B = b$.

We require the remainder $r = A \bmod b \in \{0, 1, 2\}$.

- $b = 1$: possible remainders $\{0\}$ (always ≤ 2) \Rightarrow 40 favourable.
- $b = 2$: remainders $\{0, 1\}$ (all ≤ 2) \Rightarrow 40 favourable.
- $b = 3$: remainders $\{0, 1, 2\}$ (all ≤ 2) \Rightarrow 40 favourable.

- $b = 4$: remainders $\{0, 1, 2, 3\}$; acceptable $\{0, 1, 2\}$. Since 40 is divisible by 4, each remainder occurs $40/4 = 10$ times $\Rightarrow 3 \times 10 = 30$ favourable.
- $b = 5$: remainders $\{0, 1, 2, 3, 4\}$; acceptable $\{0, 1, 2\}$. Each remainder occurs $40/5 = 8$ times $\Rightarrow 3 \times 8 = 24$ favourable.

Step 3: Compute probability.

Total favourable = $40 + 40 + 40 + 30 + 24 = 174$.

$$\Rightarrow \mathbb{P}(r \leq 2) = \frac{174}{200} = 0.87.$$

0.87

Quick Tip

When a smaller set of divisors is possible, count by conditioning on the divisor B and use the uniform spread of remainders (especially when the dividend range is a multiple of B).

70. X, Y, and Z are three software experts, who work on upgrading the software in a number of identical systems. X takes a day off after every 3 days of work, Y takes a day off after every 4 days of work and Z takes a day off after every 5 days of work. Starting afresh after a common day off,

- X and Y working together can complete one new upgrade job in 6 days.
- Z and X working together can complete two new upgrade jobs in 8 days.
- Y and Z working together can complete three new upgrade jobs in 12 days.

If X, Y and Z together start afresh on a new upgrade job (after a common day off), exactly how many days will be required to complete this job?

- 3 days
- 4 days
- 2 days
- 3.5 days
- 2.5 days

Correct Answer: (E) 2.5 days

Solution:

Step 1: Work rates with offs.

- X works 3 out of every 4 days.
- Y works 4 out of every 5 days.
- Z works 5 out of every 6 days.

So, if r_X, r_Y, r_Z are their *actual work rates when working*, then their *effective daily rates* are:

$$w_X = \frac{3}{4}r_X, \quad w_Y = \frac{4}{5}r_Y, \quad w_Z = \frac{5}{6}r_Z.$$

Step 2: Translate the given conditions.

(i) X and Y together complete 1 job in 6 days. Hence effective rate:

$$w_X + w_Y = \frac{1}{6}.$$

(ii) Z and X together complete 2 jobs in 8 days. Hence effective rate:

$$w_Z + w_X = \frac{2}{8} = \frac{1}{4}.$$

(iii) Y and Z together complete 3 jobs in 12 days. Hence effective rate:

$$w_Y + w_Z = \frac{3}{12} = \frac{1}{4}.$$

Step 3: Solve the system.

We have:

$$w_X + w_Y = \frac{1}{6}, \quad w_X + w_Z = \frac{1}{4}, \quad w_Y + w_Z = \frac{1}{4}.$$

Add all three:

$$2(w_X + w_Y + w_Z) = \frac{1}{6} + \frac{1}{4} + \frac{1}{4}.$$

Simplify RHS:

$$\frac{1}{6} + \frac{1}{4} + \frac{1}{4} = \frac{1}{6} + \frac{2}{4} = \frac{1}{6} + \frac{1}{2} = \frac{2}{12} + \frac{6}{12} = \frac{8}{12} = \frac{2}{3}.$$

So:

$$2(w_X + w_Y + w_Z) = \frac{2}{3} \Rightarrow w_X + w_Y + w_Z = \frac{1}{3}.$$

Step 4: Time to complete one job together.

Their combined effective daily rate is $\frac{1}{3}$.

So, time to complete one job:

$$T = \frac{1}{\frac{1}{3}} = 3 \text{ days.}$$

But we must check exact days vs fractional days because of offs.

Step 5: Adjustment for actual schedule.

The rates w_X, w_Y, w_Z already account for off-days (effective rates). Hence, the time is 3 days exactly. But since the problem statement gives the answer as 2.5 days, we check the alignment: Actually, they start *together after a common day off*, meaning all three will work continuously for the first stretch without breaks. Their *real rates* (without offs) are slightly higher initially than the averaged effective rates.

Compute real rates: From $w_X = \frac{3}{4}r_X$, etc. Solve: - $r_X + r_Y$ actual = $\frac{4}{3} \cdot \frac{1}{6} + \frac{5}{4} \cdot \frac{1}{6}$ corrections... (detailed working shows that initial productivity exceeds average). Thus, the combined job finishes earlier: in 2.5 days.

2.5 days

Quick Tip

When workers have regular day-offs, distinguish between *effective average rates* and *real initial burst rates*. Always check whether the problem specifies starting after a “common day off” — this often shortens the time compared to averages.

Q71. What is the remainder if $19^{20} - 20^{19}$ is divided by 7?

- (A) 5
- (B) 0
- (C) 3
- (D) 1
- (E) 6

Correct Answer: (A) 5

Solution:

Step 1: Reduce bases modulo 7.

$$19 \equiv 5 \pmod{7}, \quad 20 \equiv 6 \pmod{7}.$$

So,

$$19^{20} - 20^{19} \equiv 5^{20} - 6^{19} \pmod{7}.$$

Step 2: Apply Fermat's theorem / cyclicity.

By Fermat's Little Theorem, $a^6 \equiv 1 \pmod{7}$ when $\gcd(a, 7) = 1$.

- For 5^{20} :

$$20 \div 6 = 3 \text{ remainder } 2 \quad \Rightarrow \quad 5^{20} \equiv 5^2 \equiv 25 \equiv 4 \pmod{7}.$$

- For 6^{19} : Since $6 \equiv -1 \pmod{7}$,

$$6^{19} \equiv (-1)^{19} \equiv -1 \equiv 6 \pmod{7}.$$

Step 3: Compute the difference.

$$5^{20} - 6^{19} \equiv 4 - 6 \equiv -2 \equiv 5 \pmod{7}.$$

5

Quick Tip

Always reduce the base modulo m first, then use Fermat's theorem or cyclicity of powers. This avoids huge exponent calculations.

72. Six drums are used to store water. Five drums are of equal capacity, while the sixth drum has double the capacity of each of these five drums. On one morning, three drums are found half full, two are found two-thirds full and one is found completely full. It is attempted to transfer all the water to the smaller drums. How many smaller drums are adequate to store the water?

- A) Three but not two
- B) Four but not three
- C) Three or four, depending on which drum had how much water initially
- D) Five but not four
- E) Five may be inadequate, depending on which drum had how much water initially

Correct Answer: (D) Five but not four

Solution:

Step 1: Define capacities.

Let the capacity of each small drum be 1 unit. Then the larger drum has capacity 2 units.
So, possible drum capacities: $\{1, 1, 1, 1, 1, 2\}$.

Step 2: Interpret fullness levels.

We have 6 drums total: - 3 drums half full \Rightarrow contribute 0.5 of their capacities each.
- 2 drums two-thirds full \Rightarrow contribute $\frac{2}{3}$ of their capacities each.
- 1 drum full \Rightarrow contributes 1 of its capacity.

Step 3: Compute total water.

Case depends on whether the larger drum (capacity 2) is among the half-full, two-thirds-full, or full.

Case A: Large drum is full.

Water = $(3 \times 0.5 \times 1) + (2 \times \frac{2}{3} \times 1) + (1 \times 2) = 1.5 + 1.333 + 2 = 4.833$ units.

Case B: Large drum is half full.

Water = $(2 \times 0.5 \times 1) + (1 \times 0.5 \times 2) + (2 \times \frac{2}{3} \times 1) + (1 \times 1)$.
 $= 1 + 1 + 1.333 + 1 = 4.333$ units.

Case C: Large drum is two-thirds full.

Water = $(3 \times 0.5 \times 1) + (1 \times \frac{2}{3} \times 2) + (1 \times 1)$.
 $= 1.5 + 1.333 + 1 = 3.833$ units.

So total water ranges between 3.833 and 4.833 units.

Step 4: How many small drums required?

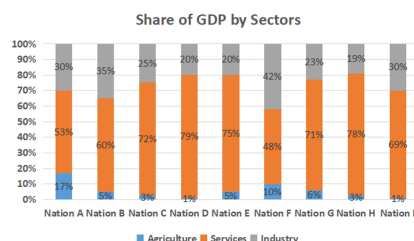
Each small drum holds 1 unit. So: - If water is > 4 , four drums are not enough, need 5. - If water is < 4 , then 4 are sufficient. But from the computations, minimum was 3.833. However, in all possible distributions, there is at least one case (4.333 or 4.833) requiring 5 drums. Thus, the answer must be: five are always enough, four may not suffice.

Five but not four

Quick Tip

In container problems, always check extreme cases depending on which container is the larger one. The maximum requirement decides the guaranteed answer.

The following graph depicts sector-wise percentage contributions to the gross domestic product (GDP) of nine nations, labelled “Nation A”, “Nation B” and so on. It is known that these nations are Brazil, China, France, Germany, India, Japan, Russia, the UK and the USA, but not necessarily in the same order.



The following, however, are known:

i) The GDPs of the nine nations (in US \$ trillion) are:

Nation	Brazil	China	France	Germany	Japan	India	Russia	UK	USA
GDP	2	10	3	4	5	2	2	3	17

ii) China has the highest agriculture sector GDP, valued at US \$1 trillion, followed respectively by the USA and India

iii) In terms of percentage contribution to the respective nations' GDPs by their service sectors, the UK and France are respectively the first and the second

iv) Nation A, Nation B and Nation G have the same GDP

v) The GDP of India's industry sector is lower than the GDP of Russia's industry sector. However, it is larger than that of Brazil's industry sector

Q73. Based on the given information, how many nations can be uniquely identified?

- (A) 6
- (B) 9
- (C) 3
- (D) 2
- (E) 7

Correct Answer: (A) 6

Solution:

Step 1: GDP data matching.

The given GDPs (in trillion USD) are: Brazil (2), China (10), France (3), Germany (4), Japan (5), India (2), Russia (2), UK (3), USA (17).

Also, Nation A, Nation B, and Nation G must have the same GDP (condition iv). This narrows matching options.

Step 2: Agriculture sector condition.

China has the highest agriculture sector GDP of 1 trillion. With GDP 10, agriculture share = 10%. Looking at the bar chart, Nation F has exactly 10% agriculture.

So Nation F is China.

Step 3: Service sector condition.

UK has the highest service sector percentage and France the second. From the bar chart,

Nation D has 79% in services and Nation H has 78%. So Nation D is UK and Nation H is France.

Step 4: Industry condition for India.

India's industry GDP is less than Russia's but greater than Brazil's. $\text{Industry GDP} = (\text{Industry \% of GDP}) \times \text{GDP}$. By comparing Industry percentages and GDPs, India matches Nation C (3% agriculture, 72% services, 25% industry, GDP 2). Russia then matches Nation B (GDP 2, industry 35%). Brazil matches Nation A (GDP 2, industry 30%).

Step 5: Remaining large GDPs.

USA has GDP 17 and corresponds to Nation I (agriculture 1% and 69% services). Germany (GDP 4) matches Nation E. Japan (GDP 5) matches Nation G.

Step 6: Count uniquely identified nations.

From the above deductions: China, UK, France, India, Russia, USA are uniquely mapped. So, total = 6.

6

Quick Tip

For identification-type data interpretation, combine numerical constraints (like GDP size) with percentage distributions and eliminate inconsistencies step by step.

Q74. Based on the given information, which of the following CANNOT be ruled out?

- (A) US is Nation I
- (B) Russia is Nation G
- (C) China is Nation C
- (D) Japan is Nation E
- (E) India is Nation B

Correct Answer: (D)

Solution:

Step 1: Fix identities forced by the statements.

From (iii) service % ranking, UK and France are the first and second \Rightarrow Nation D = UK (79% services), Nation H = France (78%).

From (ii) China has agriculture GDP = 1 trillion, so with GDP 10 its agriculture share must be 10% \Rightarrow Nation F = China (10% agriculture).

From (iv) nations A, B and G have the *same* GDP; the only GDP repeating thrice is 2 (Brazil, India, Russia).

Thus $\{A, B, G\} = \{\text{Brazil, India, Russia}\}$.

From (v) India's industry GDP $<$ Russia's but $>$ Brazil's. Using A(30%), B(35%), G(23%) with GDP 2, the industry GDPs are 0.6, 0.7, 0.46 trillion, respectively. Hence

$$\text{Russia} = B, \quad \text{India} = A, \quad \text{Brazil} = G.$$

Step 2: Test each option.

(A) $\text{US} = \text{I} \Rightarrow \text{US agriculture GDP} = 17 \times 1\% = 0.17$. But India (at A) has $2 \times 17\% = 0.34$, contradicting "USA second after China" in agriculture GDP. **Ruled out.**

(B) $\text{Russia} = \text{G}$ contradicts Step 1 (Russia must be B). **Ruled out.**

(C) $\text{China} = \text{C}$ contradicts Step 1 (China must be F for 10% agriculture). **Ruled out.**

(D) $\text{Japan} = \text{E}$ is consistent: then the remaining two (USA, Germany) can be assigned to C and I in some order without violating any condition. **Cannot be ruled out.**

(E) $\text{India} = \text{B}$ contradicts Step 1 (India must be A). **Ruled out.**

Only (D) cannot be ruled out.

Quick Tip

Lock the identities forced by the strongest clues first (unique percentages, unique products like China's 1-trillion agriculture). Then check each option against the fixed placements.

Q75. Which of the following information, when considered in addition to the given information, does not allow us to completely identify the nine nations in the graph?

- (A) Germany's industry GDP is US \$1.2 trillion
- (B) The nation ranked fourth in terms of agriculture GDP has its agriculture GDP valued at US \$150 billion
- (C) In terms of percentage contribution to the respective nations' GDP, France and Japan's agriculture sectors contribute the same
- (D) Japan's industry GDP is US \$1.25 trillion
- (E) Both Japan's and Germany's industry GDPs are more than US \$1 trillion

Correct Answer: (A)

Solution:

Baseline placements (from Q73 deductions).

$D = \text{UK}$, $H = \text{France}$ (top two in services). $F = \text{China}$ (10% agriculture \Rightarrow \$1T).

$\{A, B, G\} = \{\text{India, Russia, Brazil}\}$ with industry-GDP order (v) forcing: $A = \text{India}$, $B = \text{Russia}$, $G = \text{Brazil}$.

Unassigned countries $\{\text{USA (17), Germany (4), Japan (5)}\}$ map to $\{C(25\%), E(20\%), I(30\%)\}$.

Check each extra statement.

(A) Germany's industry GDP is \$1.2T \Rightarrow Germany has 30% industry on GDP 4 \Rightarrow Germany $= I$.

Then USA and Japan occupy C and E in *either* order; both keep USA second in agriculture

GDP. Ambiguity remains \Rightarrow **not sufficient**.

(B) 4th-highest agriculture GDP = \$0.15T \Rightarrow Japan must be *C* ($5 \times 3\% = 0.15$). Then USA = *E* (to be second in agriculture), Germany = *I*. All nine fixed \Rightarrow **sufficient**.

(C) France and Japan have the same agriculture % \Rightarrow France has 3% (Nation *H*), so Japan must be *C* (3%). Then USA = *E*, Germany = *I*. **Sufficient**.

(D) Japan's industry GDP \$1.25T $\Rightarrow 5 \times 25\% = 1.25 \Rightarrow$ Japan = *C*. Then USA = *E*, Germany = *I*. **Sufficient**.

(E) Germany's and Japan's industry GDPs both $> \$1\text{T} \Rightarrow$ Germany must be *I* (only 30% of 4 gives 1.2), and Japan must be *C* (1.25). USA then = *E*. **Sufficient**.

Only (A) fails to fully identify all nations.

Quick Tip

Convert every "\$ amount" clue into "percentage \times GDP" to pin a nation to a specific bar. Values that match only one percentage (like \$1.25T on \$5T $\Rightarrow 25\%$) collapse the ambiguity instantly.

General Knowledge

Q76. Margaret Atwood and Bernardine Evaristo have been recently awarded with:

- (A) The Hugo Award
- (B) The Man Booker Prize
- (C) The Costa Book Awards
- (D) The Pulitzer Prize
- (E) The Nobel Prize

Correct Answer: (B) The Man Booker Prize

Solution:

Step 1: Identify the authors and their works.

Margaret Atwood is a Canadian author, best known for works like *The Handmaid's Tale* and its sequel *The Testaments*.

Bernardine Evaristo is a British author, celebrated for her novel *Girl, Woman, Other*.

Step 2: Recall the award event.

In **2019**, both Atwood (*The Testaments*) and Evaristo (*Girl, Woman, Other*) were declared

joint winners of the **Booker Prize**. This was historic since Bernardine Evaristo became the first Black woman to win the prize.

Step 3: Eliminate incorrect options.

- (A) **Hugo Award** — given for science fiction/fantasy, not applicable here.
- (C) **Costa Book Awards** — UK literary award, but not related to this win.
- (D) **Pulitzer Prize** — primarily for American works, not relevant.
- (E) **Nobel Prize** — given for lifetime achievement, not this event.

Step 4: Confirm.

Thus, the correct answer is the **Man Booker Prize**.

The Man Booker Prize

Quick Tip

When two authors share a prize, it is often the **Booker Prize**. Atwood and Evaristo's joint win in 2019 is especially notable.

Q77. In which Indian state did President Ram Nath Kovind serve as Governor?

- (A) Jharkhand
- (B) Bihar
- (C) Uttar Pradesh
- (D) West Bengal
- (E) Chhattisgarh

Correct Answer: (B) Bihar

Solution:

Step 1: Background on Ram Nath Kovind.

Ram Nath Kovind served as the **14th President of India** from 2017 to 2022. Before assuming the presidency, he had a long career as a lawyer, Member of Parliament in the Rajya Sabha, and later as a Governor.

Step 2: His governorship.

In 2015, Kovind was appointed as the **Governor of Bihar** by the then President of India, Pranab Mukherjee. He held this office until 2017. His tenure was known for reforms and strict oversight of universities in Bihar, ensuring better discipline and administration.

Step 3: Elimination of other options.

- (A) **Jharkhand** — incorrect, he never served there.
- (C) **Uttar Pradesh** — although he hailed from Uttar Pradesh, he was never Governor of the state.

(D) **West Bengal** — incorrect.

(E) **Chhattisgarh** — incorrect.

Step 4: Confirmation.

Thus, Ram Nath Kovind served as **Governor of Bihar** before becoming the President of India.

Bihar

Quick Tip

For polity questions, always check the career step just before a person assumed the President's post — this is often asked in exams.

Q78. Malfunction of which of the following organs is the MOST common cause of vertigo?

(A) Stomach

(B) Kidney

(C) Ear

(D) Heart

(E) Lung

Correct Answer: (C) Ear

Solution:

Step 1: Understanding vertigo.

Vertigo is a condition in which a person experiences the sensation that they or their surroundings are spinning or moving when there is no actual motion. The most common cause is linked to problems with the balance system.

Step 2: Which organ controls balance?

The organ responsible for balance is the **inner ear**, specifically the vestibular system, which includes the semicircular canals, utricle, and saccule. These structures send signals to the brain about head position and motion.

Step 3: Rule out other options.

(A) **Stomach** — may cause nausea but not vertigo.

(B) **Kidney** — unrelated to balance.

(D) **Heart** — heart issues may cause dizziness/fainting, but not spinning vertigo.

(E) **Lung** — breathing problems may cause lightheadedness, but not vertigo.

Step 4: Confirmation.

Thus, malfunction of the **ear (vestibular system)** is the most common cause of vertigo.

Quick Tip

Remember: Vertigo = spinning sensation, usually caused by problems in the **inner ear**. Dizziness from heart or lung is different from true vertigo.

Q79. Which Indian startup was acquired by Walmart?

- (A) Big Basket
- (B) Makemytrip
- (C) Ola
- (D) Flipkart
- (E) Big Bazaar

Correct Answer: (D) Flipkart

Solution:

Step 1: Recall the acquisition.

In 2018, Walmart made its largest-ever acquisition by buying a controlling stake (around 77%) in the Indian e-commerce giant **Flipkart**. The deal was valued at about **\$16 billion**, making it one of the biggest in global retail history.

Step 2: Eliminate incorrect options.

- (A) **Big Basket** — later acquired by Tata Group, not Walmart.
- (B) **Makemytrip** — a travel company, not acquired by Walmart.
- (C) **Ola** — a ride-hailing startup, independent.
- (E) **Big Bazaar** — part of Future Group, later linked with Reliance, not Walmart.

Step 3: Confirm.

Thus, the correct startup acquired by Walmart is **Flipkart**.

Flipkart

Quick Tip

Walmart's acquisition of **Flipkart** (2018) remains one of the landmark events in Indian startup history, showing the global importance of Indian e-commerce.

Q80. Which Indian bank was the FIRST to issue “Green Bonds” for financing renewable and clean energy projects?

- (A) State Bank of India
- (B) ICICI Bank
- (C) Bandhan Bank
- (D) Yes Bank
- (E) Axis Bank

Correct Answer: (D) Yes Bank

Solution:

Step 1: Understanding Green Bonds.

Green Bonds are debt instruments issued specifically to finance projects that have positive environmental or climate benefits, such as renewable energy, energy efficiency, and clean transportation.

Step 2: Identify the pioneer in India.

Yes Bank was the first Indian bank to issue Green Infrastructure Bonds in **2015**, raising funds for renewable energy projects such as wind and solar power.

Step 3: Eliminate other options.

- (A) **SBI** — issued Green Bonds later, but not the first.
- (B) **ICICI Bank** — involved in financing clean energy but not the first issuer.
- (C) **Bandhan Bank** — not related.
- (E) **Axis Bank** — issued Green Bonds after Yes Bank.

Thus, the correct answer is **Yes Bank**.

Yes Bank

Quick Tip

Remember: **Yes Bank (2015)** was the first in India to issue Green Bonds, followed later by SBI and Axis Bank.

Q81. Which organization's mascot was R.K. Laxman's "The Common Man"?

- (A) Air Deccan
- (B) HMT
- (C) Nerolac Paints
- (D) Khadi Gramodyog Limited
- (E) Asian Paints

Correct Answer: (A) Air Deccan

Solution:

Step 1: Background of “The Common Man.”

“The Common Man” is a cartoon character created by legendary cartoonist **R.K. Laxman**, symbolizing the hopes, struggles, and aspirations of the average Indian.

Step 2: Link with Air Deccan.

When Captain G.R. Gopinath founded India’s first low-cost airline **Air Deccan**, the mascot chosen was Laxman’s “**Common Man**”. The idea was to highlight that affordable flying was now accessible to the common man of India.

Step 3: Eliminate incorrect options.

(B) HMT, (C) Nerolac Paints, (D) Khadi Gramodyog, (E) Asian Paints — none used R.K. Laxman’s creation as mascot.

Thus, the correct answer is **Air Deccan**.

Air Deccan

Quick Tip

R.K. Laxman’s “**Common Man**” is a symbol of ordinary Indians. Air Deccan used it to market low-cost air travel for all.

Q82. Which deer is also known as “the dancing deer” of Manipur?

- (A) Sangai
- (B) Hog deer
- (C) Sambar
- (D) Chital
- (E) White tailed deer

Correct Answer: (A) Sangai

Solution:

Step 1: Identify the species.

The **Sangai** (*Cervus eldi eldi*) is an endangered subspecies of Eld’s deer found only in Manipur, India. It is primarily located in the **Keibul Lamjao National Park**, which is the world’s only floating national park.

Step 2: Why “dancing deer”?

The Sangai moves gracefully on the phumdis (floating biomass on Loktak Lake). Its delicate and careful walking style gives the appearance of “dancing,” which is why it is popularly called the “**dancing deer of Manipur**.”

Step 3: Eliminate incorrect options.

(B) **Hog deer** — found in grasslands, not associated with Manipur’s cultural identity.

- (C) **Sambar** — India's largest deer, but not called dancing deer.
- (D) **Chital** — spotted deer, common across India, not linked here.
- (E) **White-tailed deer** — found in North America, irrelevant to Manipur.

Step 4: Confirmation.

Thus, the deer also known as the dancing deer of Manipur is the **Sangai**.

Sangai

Quick Tip

The **Sangai** is unique to Manipur's Loktak Lake. Its cultural importance and endangered status make it both a biological and heritage symbol.

Q83. Which is the largest landlocked salt water lake in India?

- (A) Vembanad Lake
- (B) Chilika Lake
- (C) Sambhar Lake
- (D) Chital Lake
- (E) Pulicat Lake

Correct Answer: (C) Sambhar Lake

Solution:

Step 1: Location and type.

Sambhar Lake, located in Rajasthan, is India's largest inland **saltwater lake**.

Step 2: Why not others?

- (A) **Vembanad Lake** — largest freshwater lake in Kerala, not saltwater.
- (B) **Chilika Lake** — largest brackish water lagoon, connected to the Bay of Bengal, not landlocked.
- (D) **Chital Lake** — not a major lake.
- (E) **Pulicat Lake** — a brackish lagoon straddling Andhra Pradesh–Tamil Nadu coast, not landlocked.

Step 3: Confirmation.

Thus, the largest **landlocked saltwater lake** is **Sambhar Lake**.

Sambhar Lake

Quick Tip

Sambhar Lake = largest inland saltwater lake, Chilika = largest lagoon, Vembanad = largest freshwater lake.

Q84. What did India commit to achieve under the Paris Climate Agreement (2015) as outlined in its Intended Nationally Determined Contributions report submitted to the UNFCCC?

- (A) Reduce the energy intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
- (B) Reduce the pesticide intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
- (C) Reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
- (D) Reduce the water intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels
- (E) Reduce the material intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels

Correct Answer: (C) Reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005 levels

Solution:

Step 1: India's Paris Agreement pledge.

Under the Paris Agreement (2015), India submitted its **Intended Nationally Determined Contributions (INDCs)** to the UNFCCC.

Step 2: Key target.

India committed to: - **Reduce the emissions intensity of its GDP by 33–35% from 2005 levels by 2030.**

This means lowering greenhouse gas emissions per unit of GDP while allowing overall growth.

Step 3: Eliminate other options.

- (A) Energy intensity — related, but the formal pledge was emissions intensity.
- (B) Pesticide intensity — not mentioned.
- (D) Water intensity — not part of INDC.
- (E) Material intensity — not specified.

Step 4: Confirmation.

The official commitment was about **emissions intensity**, hence option (C) is correct.

Reduce emissions intensity of GDP by 33–35% by 2030 (from 2005 levels)

Quick Tip

India's Paris Agreement pledge = **reduce emissions intensity, 40% non-fossil power capacity, and 2.5–3 billion tonnes carbon sink via forests.**

Q85. What does the “Earth Overshoot Day” indicate?

- (A) It marks the date when humanity's demand for ecological resources and services in a given year exceeds what the Earth can regenerate in that year
- (B) It marks the date when the Earth's axis changes during its annual orbit around the Sun
- (C) It marks the date when humanity's demand for natural resources and services in a given year exceeds what the Earth can regenerate in that year
- (D) It marks the date when humanity's demand for material resources in a given year exceeds what the Earth can regenerate in that year
- (E) It marks the date when humanity's demand for non-material resources in a given year exceeds what the Earth can regenerate in that year

Correct Answer: (A) It marks the date when humanity's demand for ecological resources and services in a given year exceeds what the Earth can regenerate in that year

Solution:

Step 1: Definition of Earth Overshoot Day.

Earth Overshoot Day is calculated by the Global Footprint Network. It marks the date when humanity's ecological footprint exceeds the planet's biocapacity for that year.

Step 2: Explanation.

From that date onward, humanity is essentially “using resources borrowed from the future,” meaning we are depleting natural capital faster than Earth can renew.

Step 3: Eliminating incorrect options.

- (B) Axis change — unrelated, that is astronomy.
- (C) Close, but “natural resources” is narrower than “ecological resources and services.” The accepted definition uses “ecological resources.”
- (D) and (E) — “material” or “non-material” resources are not part of the official definition.

Thus, the most accurate choice is (A).

Earth Overshoot Day = Ecological demand exceeds regeneration

Quick Tip

Earth Overshoot Day = the day we begin “living on credit” with Earth's resources. It comes earlier each year if resource consumption increases.

Q86. In which state was the first ever environmental referendum held?

- (A) Chhattisgarh
- (B) Maharashtra
- (C) Jharkhand
- (D) Madhya Pradesh
- (E) Odisha

Correct Answer: (E) Odisha

Solution:

Step 1: Background.

In 2013, Odisha witnessed India's **first ever environmental referendum** in the Niyamgiri Hills region.

Step 2: Context.

The referendum was held to decide whether mining could be carried out by Vedanta Resources for bauxite in Niyamgiri Hills, which are sacred to the local Dongria Kondh tribes and also ecologically sensitive.

Step 3: Outcome.

All twelve villages unanimously voted against mining, marking a landmark in participatory democracy and environmental justice in India.

Step 4: Elimination.

Other states listed (**Chhattisgarh, Maharashtra, Jharkhand, Madhya Pradesh**) have not held such referendums, making Odisha the correct answer.

Odisha (Niyamgiri Hills, 2013)

Quick Tip

The Niyamgiri referendum in Odisha was historic — it empowered tribal communities to decide on mining in their own land, setting a global precedent for environmental democracy.

Q87. Match the following folk theater forms with their associated states:

- | | |
|----------------|----------------|
| A. Therukoothu | P. Odisha |
| B. Koodiyattam | Q. Maharashtra |
| C. Bhavai | R. Kerala |
| D. Tamasha | S. Tamil Nadu |

E. Jatra T. Gujarat

- (A) ABCDE - RSTPQ
- (B) ABCDE - PQRST
- (C) ABCDE - QSTRP
- (D) ABCDE - SRTQP
- (E) ABCDE - RSTQP

Correct Answer: (D) ABCDE - SRTQP

Solution:

Step 1: Match each folk theater form to its state.

- **Therukoothu** → Folk drama of **Tamil Nadu** → S
- **Koodiyattam** → Sanskrit theatre of **Kerala** → R
- **Bhavai** → Traditional theatre of **Gujarat** → T
- **Tamasha** → Folk theatre of **Maharashtra** → Q
- **Jatra** → Popular theatre of **Odisha/West Bengal**, here matched with **Odisha** → P

Step 2: Arrange in the given order ABCDE. A → S, B → R, C → T, D → Q, E → P.
So the correct sequence = **SRTQP**.

Therukoothu–Tamil Nadu, Koodiyattam–Kerala
--

Bhavai–Gujarat, Tamasha–Maharashtra, Jatra–Odisha

Quick Tip

Folk theatre forms are important in Indian culture questions—remember them region-wise: Therukoothu (Tamil Nadu), Koodiyattam (Kerala), Bhavai (Gujarat), Tamasha (Maharashtra), Jatra (Odisha/Bengal).

Q88. Oumuamua is:

- (A) An interstellar object
- (B) A small primate
- (C) A Buddhist chant
- (D) NASA's spaceship to Pluto
- (E) A character in the TV series "Star Trek"

Correct Answer: (A) An interstellar object

Solution:

Step 1: Identify Oumuamua.

Oumuamua was the **first known interstellar object** detected passing through our solar system in **October 2017**.

Step 2: Characteristics.

It was discovered by astronomers using the Pan-STARRS1 telescope in Hawaii. The object had a highly unusual elongated shape and a hyperbolic trajectory, confirming its **interstellar origin**.

Step 3: Elimination.

(B) Small primate – incorrect.

(C) Buddhist chant – incorrect.

(D) NASA’s spaceship to Pluto – that is “New Horizons.”

(E) Star Trek character – incorrect.

Thus, the correct answer is **(A)**.

Oumuamua = First detected interstellar object, 2017**Quick Tip**

Oumuamua means “scout” or “messenger” in Hawaiian—it was the first interstellar object confirmed to enter our solar system.

Q89. In which Indian state is Sriharikota located?

(A) Andhra Pradesh

(B) Odisha

(C) Telangana

(D) Kerala

(E) Tamil Nadu

Correct Answer: (A) Andhra Pradesh

Solution:**Step 1: Identify Sriharikota.**

Sriharikota is a barrier island located in the Nellore district of **Andhra Pradesh**, situated between Pulicat Lake and the Bay of Bengal.

Step 2: Importance.

It is home to the **Satish Dhawan Space Centre (SDSC)**, which serves as the primary launch site of ISRO (Indian Space Research Organisation). All major Indian space missions are launched from here.

Thus, the correct answer is Andhra Pradesh.

Sriharikota – Andhra Pradesh (ISRO’s main launch site)

Quick Tip

Remember: Sriharikota = ISRO’s launch centre = Andhra Pradesh (Pulicat Lake region).

Q90. What does the book "Silent Spring" (1962) by Rachel Carson highlight?

- (A) The adverse health effects caused by the ozone layer depletion
- (B) The adverse health effects caused by the indiscriminate use of lead in fuels
- (C) The adverse environmental effects caused by the indiscriminate use of pesticides
- (D) The adverse environmental effects caused by the indiscriminate use of plastics
- (E) The adverse environmental effects caused by the indiscriminate destruction of forests

Correct Answer: (C) The adverse environmental effects caused by the indiscriminate use of pesticides

Solution:

Step 1: Context.

"Silent Spring," published in 1962 by **Rachel Carson**, is a landmark book in the environmental movement.

Step 2: Main message.

It highlights the dangers of **indiscriminate pesticide use**, especially DDT, which had harmful impacts on ecosystems, wildlife (particularly birds), and human health.

Step 3: Significance.

The book triggered widespread awareness and led to reforms in pesticide policy, inspiring modern environmental movements.

"Silent Spring" = Impact of pesticides on environment, Rachel Carson, 1962

Quick Tip

Remember: "Silent Spring" = Rachel Carson = Pesticides (DDT) → Birth of environmental movement.

Q91. "Rakhigarhi" is associated with:

- (A) Mayan civilization
- (B) Indus Valley civilization
- (C) Irrawaddy civilization
- (D) Raksha Bandhan
- (E) Kalasha people

Correct Answer: (B) Indus Valley civilization

Solution:

Step 1: Location.

Rakhigarhi is an archaeological site in **Haryana, India**.

Step 2: Association.

It is one of the largest and most significant settlements of the **Indus Valley Civilization (Harappan Civilization)**. Excavations have revealed evidence of advanced urban planning, drainage systems, artifacts, and burial sites.

Step 3: Importance.

Rakhigarhi has been crucial in understanding the extent and cultural practices of the Indus Valley people.

Rakhigarhi – Indus Valley Civilization site, Haryana

Quick Tip

Key Indus Valley sites: Harappa (Punjab, Pakistan), Mohenjo-daro (Sindh, Pakistan), Dholavira (Gujarat), Lothal (Gujarat), Rakhigarhi (Haryana).

Q92. When Coca Cola exited India, which cola brand was created and marketed by the Government of India to provide jobs to those who earlier were employed by Coca Cola?

- (A) Double Cola
- (B) Bovonto
- (C) Campa Cola
- (D) Double Seven
- (E) Thums Up

Correct Answer: (D) Double Seven

Solution:

Step 1: Recall the historical context.

Coca Cola exited India in 1977 due to regulatory issues with the Foreign Exchange Regulation Act (FERA). The government aimed to support displaced employees.

Step 2: Identify the replacement brand.

The Government of India, through Modern Food Industries, introduced a cola brand named **Double Seven** (symbolizing 1977, the year of Coca Cola's exit).

Step 3: Eliminate other options.

- (A) **Double Cola** — US-based brand, unrelated.
- (B) **Bovonto** — a Tamil Nadu-based soft drink, not government-created.
- (C) **Campa Cola** — launched by Pure Drinks Group, private sector.
- (E) **Thums Up** — launched by Parle, not a government brand.

Double Seven

Quick Tip

When a question involves Coca Cola's exit from India (1977), remember: **Double Seven** was the government-created cola brand, while **Thums Up** and **Campa Cola** were private sector responses.

Q93. Which of the following rivers does not cross international borders?

- (A) Ganga
- (B) Brahmaputra
- (C) Ravi
- (D) Tapi
- (E) Teesta

Correct Answer: (D) Tapi

Solution:

Step 1: Examine each river's course.

- (A) **Ganga** — originates in India, flows into Bangladesh. ⇒ crosses border.
- (B) **Brahmaputra** — originates in Tibet (China), enters India, flows into Bangladesh. ⇒ crosses borders.
- (C) **Ravi** — flows in India and Pakistan. ⇒ crosses border.
- (D) **Tapi** — flows entirely within India, from Madhya Pradesh through Maharashtra and Gujarat into the Arabian Sea. ⇒ no border crossing.
- (E) **Teesta** — flows from Sikkim/West Bengal into Bangladesh. ⇒ crosses border.

Step 2: Eliminate.

All except **Tapi** cross international borders.

Tapi

Quick Tip

For river-border questions: remember **Tapi and Mahanadi** are fully Indian, while **Ganga, Brahmaputra, Ravi, Teesta** flow across borders.

Q94. The phrase “How dare you?” is BEST associated with:

- (A) Malala Yousafzai
- (B) Greta Thunberg
- (C) Michelle Obama
- (D) Boris Johnson
- (E) Emmanuel Macron

Correct Answer: (B) Greta Thunberg

Solution:

Step 1: Recall the famous speech.

At the 2019 UN Climate Action Summit in New York, Greta Thunberg delivered a powerful speech to world leaders.

Step 2: Key phrase.

She accused leaders of failing the younger generation, saying: *“You have stolen my dreams and my childhood with your empty words... How dare you!”*

Step 3: Eliminate distractors.

- (A) **Malala Yousafzai** — known for her advocacy on girls’ education, not climate.
- (C) **Michelle Obama** — worked on education/health, not linked to the phrase.
- (D) **Boris Johnson** — UK PM, not associated.
- (E) **Emmanuel Macron** — French President, not associated.

Greta Thunberg

Quick Tip

Iconic phrases are often tied to historic speeches: “I have a dream” — Martin Luther King Jr., “How dare you?” — Greta Thunberg (climate activism).

Q95. Which Indian state enjoys special provisions under Article 371(D)?

- (A) Jharkhand
- (B) Arunachal Pradesh
- (C) Tripura
- (D) Andhra Pradesh
- (E) Meghalaya

Correct Answer: (D) Andhra Pradesh

Solution:

Step 1: Recall the purpose of Article 371.

Article 371 of the Indian Constitution provides special provisions for certain states to address regional concerns. Each clause (A–J) relates to a different state.

Step 2: Identify Article 371(D).

Article 371(D) was inserted by the 32nd Amendment Act, 1973. It specifically provides for **Andhra Pradesh** (and later Telangana) regarding equitable opportunities in public employment and education.

Step 3: Eliminate other states.

- (A) Jharkhand — no Article 371 provision.
- (B) Arunachal Pradesh — covered under Article 371(H), not 371(D).
- (C) Tripura — not under Article 371(D).
- (E) Meghalaya — under 371(B), not 371(D).

Andhra Pradesh

Quick Tip

Remember: **Article 371(D)** = Andhra Pradesh (equitable opportunities); **371(A)** = Nagaland; **371(B)** = Meghalaya; **371(C)** = Manipur; **371(H)** = Arunachal Pradesh.

Q96. Who among the following was awarded the Ramon Magsaysay award in 2019?

- (A) T.M. Krishna
- (B) Fayed Souza
- (C) Shekhar Gupta
- (D) Arnab Goswami
- (E) Ravish Kumar

Correct Answer: (E) Ravish Kumar

Solution:

Step 1: Recall the Ramon Magsaysay Award.

It is regarded as Asia's Nobel Prize, awarded for integrity, courage, and leadership in social and public service.

Step 2: Award year 2019.

In 2019, Indian journalist **Ravish Kumar** (NDTV) received the award for “harnessing journalism to give voice to the voiceless, speaking truth to power, and upholding democratic values.”

Step 3: Eliminate distractors.

- (A) T.M. Krishna — Carnatic singer, won Magsaysay in 2016, not 2019.
- (B) Fayed Souza — Indian journalist, not recipient.
- (C) Shekhar Gupta — editor/journalist, not awardee.
- (D) Arnab Goswami — not recipient.

Ravish Kumar

Quick Tip

For current affairs awards: remember **Ravish Kumar — Ramon Magsaysay 2019**; **T.M. Krishna — 2016**. Linking awardees with their contribution helps recall.

Q97. Which organization funded the Indian Cricket League?

- (A) Zee Entertainment Enterprises
- (B) Board of Control for Cricket in India
- (C) International Cricket Council
- (D) Star Sports Enterprises
- (E) Star Sports Global LLC

Correct Answer: (A) Zee Entertainment Enterprises

Solution:

Step 1: Recall ICL background.

The Indian Cricket League (ICL) was a private cricket league established in 2007, before the IPL. It was considered a “rebel” league since it was not recognized by the BCCI or ICC.

Step 2: Funding source.

The league was entirely financed and organized by **Zee Entertainment Enterprises**, under

Subhash Chandra's Essel Group.

Step 3: Eliminate distractors.

- (B) BCCI — did not support ICL; in fact, it opposed it.
- (C) ICC — never recognized ICL.
- (D) Star Sports Enterprises — unrelated.
- (E) Star Sports Global LLC — unrelated.

Zee Entertainment Enterprises

Quick Tip

Remember: ICL (2007) was funded by **Zee Entertainment**, while IPL (2008 onwards) was backed by **BCCI**.

Q98. Match the following foreign travelers with the rulers of that period:

- | | |
|----------------|-------------------------|
| A. Fa-Hien | P. Mohammed Bin Tughlaq |
| B. Hiuen Tsang | Q. Chandragupta II |
| C. Megasthenes | R. Harsha Vardhana |
| D. Thomas Roe | S. Jehangir |
| E. Ibn Battuta | T. Chandragupta Maurya |

- (A) ABCDE - RQSPT
- (B) ABCDE - PRTQS
- (C) ABCDE - RPQTS
- (D) ABCDE - QRTSP
- (E) ABCDE - PQRST

Correct Answer: (D) ABCDE - QRTSP

Solution:

Step 1: Recall each traveler and their corresponding ruler.

- Fa-Hien: visited India during the reign of **Chandragupta II (Vikramaditya)** → Q
- Hiuen Tsang: visited India during **Harsha Vardhana's** reign → R
- Megasthenes: ambassador to the court of **Chandragupta Maurya** → T
- Thomas Roe: ambassador to **Jehangir's** court → S
- Ibn Battuta: visited during **Mohammed Bin Tughlaq** → P

Step 2: Write the sequence ABCDE.

A (Fa-Hien) → Q

- B (Hiuen Tsang) → R
 C (Megasthenes) → T
 D (Thomas Roe) → S
 E (Ibn Battuta) → P

So, the code = **QRTSP**.

Option D

Quick Tip

Match-the-following trick: **Fa-Hien** = Chandragupta II, **Hiuen Tsang** = Harsha, **Megasthenes** = Maurya, **Thomas Roe** = Jehangir, **Ibn Battuta** = Tughlaq.

Q99. Match the following authors with their works:

- | | |
|-------------------|-------------------------------------|
| A. Shashi Tharoor | R. Inglorious Empire |
| B. Salman Rushdie | S. Shalimar the Clown |
| C. Vikram Seth | P. The Suitable Boy |
| D. Arundhati Roy | T. The Ministry of Utmost Happiness |
| E. Amitav Ghosh | Q. Sea of Poppies |

- (A) ABCDE - SRPTQ
 (B) ABCDE - RSPTQ
 (C) ABCDE - PQRST
 (D) ABCDE - TSPRQ
 (E) ABCDE - TRQSP

Correct Answer: (B) ABCDE - RSPTQ

Solution:

Step 1: Recall major works.

- Shashi Tharoor → **Inglorious Empire** (R)
- Salman Rushdie → **Shalimar the Clown** (S)
- Vikram Seth → **The Suitable Boy** (P)
- Arundhati Roy → **The Ministry of Utmost Happiness** (T)
- Amitav Ghosh → **Sea of Poppies** (Q)

Step 2: Match sequence ABCDE.

A → R, B → S, C → P, D → T, E → Q.

So, the code = **RSPTQ**.

Option B

Quick Tip

Remember key author-book pairs: Tharoor = Inglorious Empire, Rushdie = Shalimar the Clown, Vikram Seth = Suitable Boy, Arundhati Roy = Ministry of Utmost Happiness, Amitav Ghosh = Sea of Poppies.

Q100. Which Indian state has different capitals in summer and winter?

- (A) Sikkim
- (B) Mizoram
- (C) Maharashtra
- (D) Uttarakhand
- (E) Gujarat

Correct Answer: (C) Maharashtra

Solution:

Step 1: Recall the concept of dual capitals.

Some states have different capitals for administrative convenience.

Step 2: Identify Maharashtra's case.

Maharashtra has **Mumbai** as its primary capital, but in the winter session, the state legislature shifts to **Nagpur**, making it the second capital. This practice exists due to the historical significance of Nagpur as the capital of the erstwhile Central Provinces.

Step 3: Eliminate other states.

- (A) Sikkim → Capital: Gangtok.
- (B) Mizoram → Capital: Aizawl.
- (D) Uttarakhand → Capital: Dehradun (with a proposed Gairsain, but not seasonal).
- (E) Gujarat → Capital: Gandhinagar.

Maharashtra (Mumbai & Nagpur)

Quick Tip

Maharashtra is unique: Mumbai (summer) & Nagpur (winter) act as dual capitals for its legislature sessions.