



INSIGHTSIAS
SIMPLIFYING IAS EXAM PREPARATION

INSIGHTS DART QUIZ



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OCTOBER 2025

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1. COMPREHENSION

Directions for the following 4 (Four) items:

Read the following **two passages** and answer the items that follow the passages. Your answer to these items should be based on the passages only.

Passage 1

The increasing automation of industries, driven by artificial intelligence and robotics, is transforming the nature of work itself. Routine manual and cognitive tasks are being replaced by algorithms capable of performing them with greater accuracy and speed. However, this transformation also creates opportunities for new kinds of employment that rely on creativity, emotional intelligence, and complex problem-solving—skills uniquely human. Therefore, education and training systems must adapt quickly to prepare people not just for specific jobs but for continuous learning across their lifetime. The goal should not be to compete with machines, but to cultivate the qualities that make us human.

Q1. Which one of the following statements best reflects the central idea of the passage?

- (a) Automation will make most traditional forms of employment obsolete in the near future.
- (b) Education should focus on developing uniquely human abilities rather than competing with machines.
- (c) Artificial intelligence poses a serious threat to human existence and economic stability.
- (d) Continuous learning can completely replace the need for formal education systems.

Answer: (b)

Explanation:

Option (a) is incorrect: While the passage acknowledges job transformation due to automation, it does not predict total obsolescence of traditional employment. The tone is adaptive, not catastrophic.

Option (c) is incorrect: The passage does not convey fear or threat; instead, it presents automation as both a challenge and an opportunity.

Option (d) is incorrect: The passage suggests “continuous learning across lifetime” as a complementary goal, not as a replacement for formal education.

Option (b) is correct: This option captures the essence of the passage—education systems must focus on qualities “that make us human,” such as creativity and emotional intelligence, to coexist productively with machines. The focus is on reorienting education to nurture irreplaceably human capabilities rather than competing with automation.

Q2. With reference to the above passage, the following assumptions have been made:

- I. The future of work will depend more on adaptability and human creativity than on technical repetition.
- II. Artificial intelligence will completely replace human involvement in the workforce.

Which of the above assumptions is/are valid?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

Answer: (a)

Explanation:

Assumption I is correct: The passage clearly states that new opportunities will rely on “creativity, emotional intelligence, and complex problem-solving,” which implies that adaptability and creativity are central to future work. Hence, this assumption aligns with the main argument.

Assumption II is incorrect: The author does not claim that AI will completely replace humans. In fact, the passage stresses coexistence, arguing that humans should cultivate skills that complement machines. Therefore, the assumption exaggerates and misinterprets the author’s stance.

Thus, only assumption I is valid.

Passage 2

Technological progress has often been described as a double-edged sword: while it liberates humanity from drudgery, it also subtly redefines what it means to be human. As machines become capable of making decisions, the line between “instrument” and “agent” begins to blur. This blurring is not merely technical—it challenges the moral framework of accountability. When an autonomous system causes harm, who is responsible: the programmer, the user, or the machine itself? The difficulty lies in our instinct to attribute moral agency only to entities capable of consciousness and intent. Yet, in an algorithmic age, the consequences of action may arise without conscious intent at all. Thus, technology confronts us with a paradox: it extends our agency but simultaneously dilutes our sense of responsibility.

Q3. Which one of the following statements best reflects the central theme of the passage?

- (a) The rise of artificial intelligence compels us to rethink the traditional notions of moral responsibility.
- (b) Moral accountability should always rest with human programmers, regardless of technological advances.
- (c) Technological progress is dangerous because it leads to loss of human control.
- (d) Machines cannot be moral agents because they lack consciousness and intent.

Answer: (a)

Explanation:

Option (a) is correct: The passage revolves around the **ethical dilemma of responsibility** in the context of autonomous technologies. It explicitly notes that as machines make decisions, our moral framework of accountability becomes uncertain, thus requiring a rethinking of traditional moral concepts.

Option (b) is incorrect: The passage raises the question of responsibility but does not settle it by assigning blame solely to programmers. It explores the *complexity* of the issue, not its resolution.

Option (c) is incorrect: The author does not condemn technological progress as “dangerous”; instead, it is described as a “paradox” that extends human power while complicating moral responsibility.

Option (d) is incorrect: The author acknowledges that machines lack consciousness, but the passage’s focus is not on denying their moral agency—it’s on questioning whether moral frameworks based on consciousness can still function in an algorithmic world. Hence, (a) best captures the philosophical core.

Q4. With reference to the above passage, the following assumptions have been made:

- I. The growing autonomy of machines challenges conventional human-centered moral frameworks.
- II. Artificial intelligence can possess consciousness and intent similar to humans.
- III. Technological progress always results in diminished human responsibility.

Which of the above assumptions is/are valid?

- (a) I only
- (b) I and II only
- (c) I and III only
- (d) II and III only

Answer: (a)

Explanation:

Assumption I is correct: The passage clearly indicates that as machines act autonomously, “the line between instrument and agent begins to blur,” which implies that human-centered moral systems based on conscious intent are being challenged. Hence, assumption I is valid.

Assumption II is incorrect: The author states that our moral frameworks depend on the idea that only conscious entities can be moral agents—but never suggests that machines actually *possess* consciousness or intent. Thus, this assumption goes beyond the text.

Assumption III is incorrect: The passage describes the dilution of responsibility as a paradoxical risk, not an inevitable outcome (“technology extends our agency but simultaneously dilutes our sense of responsibility”). It may or may not always occur, so the assumption overgeneralizes.

Hence, only assumption I is valid.

Directions for the following 4 (Four) items:

Read the following **two passages** and answer the items that follow the passages. Your answer to these items should be based on the passages only.

Passage 1

SIMPLIFYING IAS EXAM PREPARATION

Economic growth is not synonymous with social progress. A nation may record a consistent rise in its GDP while simultaneously witnessing stagnation in health, education, and employment outcomes. The growth process, when concentrated in a few capital-intensive sectors, can inflate overall output without improving the quality of life for the majority. Moreover, such growth often generates regional disparities and income inequality, which in turn restrict aggregate demand, creating a vicious cycle. Thus, while growth may be necessary for development, it is far from sufficient. True development must aim at equitable distribution of opportunities, empowerment through education and health, and the creation of productive employment that sustains dignity.

Q5. Which one of the following statements best reflects the corollary to the above passage?

- (a) Sustainable development is possible only when economic growth and social equity move hand in hand.
- (b) Faster GDP growth alone can guarantee improvements in employment and living standards.
- (c) Redistributive welfare schemes are sufficient to ensure equitable development.
- (d) Economic growth should be slowed down to prevent inequality.

Answer: (a)

Explanation:

Option (a) is correct: The passage explicitly contrasts economic growth with social progress and concludes that “growth may be necessary for development, but is far from sufficient.” It emphasises

equity, empowerment, and productive employment. Therefore, (a) correctly draws the corollary that **true development requires both economic expansion and social equity**.

Option (b) is incorrect: The author clearly rejects this view; mere GDP growth does not guarantee improvement in social outcomes.

Option (c) is incorrect: While equity is essential, the passage stresses *empowerment through education and employment*, not mere redistribution. Welfare schemes alone cannot substitute structural reforms.

Option (d) is incorrect: The passage never advocates slowing growth; it calls for **qualitative improvement in growth**, not reduction of pace.

Hence, (a) best reflects the corollary logically implied by the text.

Q6. With reference to the above passage, the following assumptions have been made:

- I. Growth that fails to address inequality and human development cannot be considered genuine development.
- II. Structural changes in the economy are required to make growth more inclusive and employment-intensive.
- III. The State should withdraw from redistributive functions and focus only on accelerating GDP growth.

Which of the above assumptions is/are valid?

- (a) I only
- (b) I and II only
- (c) II and III only
- (d) All three

Answer: (b)

Explanation:

Assumption I is correct: The author asserts that “true development must aim at equitable distribution of opportunities, empowerment through education and health,” implying that **growth without equity is hollow**. Therefore, Assumption I aligns perfectly with the passage.

Assumption II is correct: The passage stresses that when growth is “concentrated in a few capital-intensive sectors,” it leads to inequality and low employment. This clearly implies the need for **structural transformation** toward inclusive, labour-intensive sectors to link growth with human welfare. Hence, Assumption II is valid.

Assumption III is incorrect: The passage advocates a **greater developmental role for the State**, focusing on equality and empowerment, not withdrawal. It explicitly supports social investment and human-centric policies.

Thus, only Assumptions I and II are valid, making option (b) the correct answer.

Passage 2

Modern democratic societies often assume that the legitimacy of authority comes solely from the consent of the governed. Yet, consent is not always a sufficient guarantee of justice. People may willingly endorse institutions or leaders that curtail liberty in the name of security or nationalism. When obedience becomes habitual, freedom is reduced to a ritual rather than a reality. Paradoxically, democracies can breed conformity as easily as autocracies if citizens cease to exercise critical judgment. Thus, the vitality of a democracy does not depend merely on popular participation but on the moral courage of individuals to question even the majority’s will when it contradicts the principles of justice and human dignity.

Q7. Which one of the following statements best reflects the most logical and rational message conveyed by the author of the passage?

- (a) The consent of the majority is a sufficient condition for ensuring liberty and justice in a democracy.
- (b) Democracy must be continuously guarded by citizens who exercise moral judgment and critical thinking.
- (c) National security concerns inevitably justify temporary curbs on individual liberty.
- (d) A strong government is essential to prevent misuse of freedom in democratic societies.

Answer: (b)

Explanation:

Option (a) is incorrect: The passage directly argues against this notion, stating that “consent is not always a sufficient guarantee of justice.” Majority endorsement may coexist with injustice or suppression.

Option (c) is incorrect: The author criticizes precisely this tendency—sacrificing liberty “in the name of security or nationalism.” Hence, it contradicts the author’s position.

Option (d) is incorrect: The text focuses on *citizen responsibility* and moral vigilance, not governmental strength or control.

Option (b) is correct: The author’s central warning is that democracies can degenerate into conformity if citizens stop questioning. The key line—“the vitality of a democracy...depends on the moral courage of individuals to question even the majority’s will”—captures this idea. Therefore, (b) perfectly summarizes the logical core: democracy survives through **critical and moral citizenship**, not passive consent.

Q8. With reference to the above passage, the following assumptions have been made:

- I. Majority rule can sometimes legitimise injustice under democratic systems.
- II. Mere participation in elections is not enough to sustain the spirit of democracy.
- III. The highest form of loyalty to a democracy lies in uncritical obedience to elected leaders.

Which of the above assumptions is/are valid?

- (a) I only
- (b) I and II only
- (c) II and III only
- (d) All three

Answer: (b)

Explanation:

Assumption I is correct: The passage explicitly warns that citizens “may willingly endorse institutions or leaders that curtail liberty,” implying that democratic majorities can legitimize injustice.

Assumption II is correct: The phrase “democracy does not depend merely on popular participation” shows that **participation without reflection** is inadequate. Genuine democracy requires active moral and critical engagement.

Assumption III is incorrect: The passage calls for questioning authority, not blind obedience. “Uncritical obedience” is presented as the root of democratic decay, not loyalty.

Hence, only Assumptions I and II are valid.

Directions for the following 4 (Four) items:

Read the following **two passages** and answer the items that follow the passages. Your answer to these items should be based on the passages only.

Passage 1

In an age dominated by instant communication and limitless information, the distinction between knowledge and wisdom becomes increasingly blurred. While data can be processed, shared, and monetized, wisdom demands contemplation, humility, and an awareness of consequences. The tragedy of modern civilization lies not in ignorance but in the illusion of understanding — the belief that accumulation of information automatically results in enlightenment. Our tools have expanded our reach, yet they have also shortened our attention. When everything is knowable at once, nothing is truly learned in depth. The progress of humanity, therefore, depends not merely on faster access to information but on the capacity to pause, reflect, and judge what deserves to be known, and why.

Q9. Which one of the following statements best reflects the most logical and rational message conveyed by the author of the passage?

- (a) The abundance of information in the modern world threatens to erode the depth of human understanding.
- (b) The real challenge of our times is to democratize information access across all sections of society.
- (c) The development of technology has made wisdom an outdated virtue in modern civilization.
- (d) Information overload is an unavoidable feature of progress and should be accepted as such.

Answer: (a)

Explanation:

Option (a) is correct: The passage laments that “our tools have expanded our reach, yet shortened our attention,” and warns that “when everything is knowable at once, nothing is truly learned in depth.” This clearly conveys the message that **excess information undermines reflection and depth**, eroding true understanding. Hence, (a) captures the core argument.

Option (b) is incorrect: The author is not concerned with *access inequality* but with *quality and depth of understanding*. The problem is intellectual superficiality, not information scarcity.

Option (c) is incorrect: The passage does not call wisdom outdated; it instead calls for its revival, noting that “wisdom demands contemplation, humility, and an awareness of consequences.”

Option (d) is incorrect: The author does not treat information overload as inevitable or acceptable; he presents it as a moral and intellectual danger. Therefore, (a) alone represents the passage’s precise, reflective message.

Q10. With reference to the above passage, the following assumptions have been made:

- I. True progress of humanity lies in cultivating discernment rather than mere accumulation of facts.
 - II. Technological advancements have led to a decline in the reflective and contemplative capacities of individuals.
 - III. Information is equivalent to knowledge and hence automatically ensures enlightenment.
- Which of the above assumptions is/are valid?

- (a) I only
- (b) I and II only
- (c) II and III only
- (d) All three

Answer: (b)

Explanation:

Assumption I is correct: The author explicitly argues that progress depends on “the capacity to pause, reflect, and judge what deserves to be known,” which clearly supports the idea that discernment, not data accumulation, defines genuine progress.

Assumption II is correct: The passage criticizes the “shortened attention” and the “illusion of understanding” brought by instant access to information — implying a decline in reflective depth due to technological immediacy. Hence, this assumption is valid.

Assumption III is incorrect: This is precisely the illusion the author critiques — that information equals enlightenment. The author rejects this view, calling it “the tragedy of modern civilization.”

Therefore, only Assumptions I and II are valid.

Passage 2

Globalization has undoubtedly accelerated economic exchange and technological diffusion, but it has also created paradoxes of identity. The uniformity of consumer preferences and digital lifestyles has not merely connected people; it has subtly conditioned them to think alike. As cultures imitate one another in pursuit of global visibility, distinctiveness fades into conformity. Ironically, this very process fuels a counter-movement — a revival of local identities that resist homogenization. Yet such revivals often manifest as aggressive assertions of cultural purity rather than as inclusive expressions of diversity. The challenge for societies, therefore, is to embrace global interconnectedness without losing the moral and imaginative pluralism that sustains human creativity.

Q11. Which one of the following statements best reflects the most logical and rational message conveyed by the author of the passage?

- (a) Globalization has made nations culturally richer and more diverse than ever before.
- (b) The true challenge of globalization lies in preserving cultural plurality amidst growing uniformity.
- (c) Revival of local cultures is the only way to resist global homogenization.
- (d) Cultural uniformity is inevitable and must be accepted as the price of progress.

Answer: (b)

Explanation:

Option (a) is incorrect: The passage explicitly warns of “*distinctiveness fading into conformity*” — implying cultural loss, not enrichment.

Option (c) is incorrect: While the passage notes that local revivals occur, it cautions that they often take *aggressive* or exclusionary forms, hence not an ideal solution.

Option (d) is incorrect: The author does not view uniformity as inevitable or desirable; instead, it is portrayed as a moral and imaginative risk.

Option (b) is correct: The key line — “*The challenge for societies, therefore, is to embrace global interconnectedness without losing... pluralism*” — encapsulates the precise message. The author’s argument is not anti-globalization but calls for **balanced globalization**, where cultural diversity coexists with global integration.

Q12. With reference to the above passage, the following assumptions have been made:

- I. Globalization promotes economic efficiency but poses risks to cultural diversity.
- II. Resistance to cultural homogenization can sometimes take divisive or exclusionary forms.
- III. The preservation of cultural plurality is incompatible with global integration.

Which of the above assumptions is/are valid?

- (a) I only
- (b) I and II only

- (c) II and III only
 (d) All three

Answer: (b)

Explanation:

Assumption I is correct: The passage opens by acknowledging globalization's economic and technological benefits while simultaneously highlighting its homogenizing effect — "*accelerated exchange*" versus "*loss of distinctiveness*." Hence, assumption I is valid.

Assumption II is correct: The author explicitly states that identity revivals "often manifest as aggressive assertions of cultural purity," implying that resistance to homogenization can turn divisive.

Assumption III is incorrect: The passage argues the opposite — that the **challenge** is to integrate globalization and pluralism, not to treat them as incompatible. Therefore, assumption III is invalid. Hence, only assumptions I and II are valid, making **(b)** the correct answer.

Directions for the following 4 (Four) items :

Read the following **two passages** and answer the items that follow the passages. Your answer to these items should be based on the passages only.

Passage 1

Utilitarian ethics holds that actions are right if they promote the greatest happiness for the greatest number. Yet this principle, apparently simple and democratic, conceals troubling dilemmas. By evaluating outcomes only in terms of aggregate welfare, it can justify sacrificing the few for the happiness of the many. A society guided purely by such reasoning risks treating persons as instruments rather than as ends in themselves. Moral progress, however, may require that certain rights remain inviolable even when their violation might maximize total utility. The deepest challenge, therefore, is not how to compute happiness but how to ensure that the pursuit of collective good does not erode the moral worth of the individual.

Q13. Which one of the following statements best reflects the most logical and rational message conveyed by the author of the passage?

- (a) The utilitarian approach, while aiming at collective welfare, must be balanced by respect for individual rights and moral dignity.
 (b) Utilitarianism is the only ethical system capable of ensuring fairness and equality in society.
 (c) To secure maximum happiness, society must accept individual sacrifices as morally justified.
 (d) The utilitarian principle fails entirely as it cannot measure happiness accurately.

Answer: (a)

Explanation:

Option (a) is correct: The author's core argument is a caution against *unqualified utilitarianism*. The passage asserts that **collective welfare must never override the inviolable moral worth of individuals**, which aligns directly with (a).

Option (b) is incorrect: The passage critiques utilitarianism rather than endorsing it as the only ethical framework.

Option (c) is incorrect: While utilitarianism may imply this, the author calls such reasoning morally troubling—"risks treating persons as instruments."

Option (d) is incorrect: The passage mentions the difficulty of "computing happiness," but this is not its central message; the focus is moral, not mathematical.

Hence, (a) correctly captures the nuanced position that moral ethics requires a **balance between collective good and individual dignity**.

Q14. With reference to the above passage, the following assumptions have been made:

- I. Unrestrained application of utilitarian ethics may lead to moral injustice.
- II. Individual rights serve as necessary limits on collective welfare calculations.
- III. The moral worth of an action depends solely on its measurable social consequences.

Which of the above assumptions is/are valid?

- (a) I only
- (b) I and II only
- (c) II and III only
- (d) All three

Answer: (b)

Explanation:

Assumption I is correct: The passage explicitly warns that utilitarian reasoning “can justify sacrificing the few for the happiness of the many,” which indicates that **unrestrained utilitarianism can produce moral injustice**.

Assumption II is correct: The author states that “moral progress requires that certain rights remain inviolable,” implying that **rights act as ethical boundaries** beyond which collective welfare cannot go.

Assumption III is incorrect: This is precisely what the passage rejects. The line “the deepest challenge is not how to compute happiness but how to ensure moral worth” shows that the author distinguishes moral value from mere consequences.

Thus, only I and II are valid — (b) is the correct answer.

Passage 2

A recent report from the United Nations Environment Programme (UNEP) shows that developing countries, including India, will need at least **US \$310 billion annually by 2035** to adapt to climate change — nearly twelve times the current levels of international public finance. The report warns that the “adaptation gap” is widening just as climate risks intensify, threatening lives, livelihoods and public health in vulnerable regions. India, with its mass of rural population, monsoon-dependent agriculture, and varied geography, faces multiple challenges: coastal states must deal with sea-level rise; arid inland districts must cope with variable rainfall; Himalayan zones face glacial melt and landslides. At the same time, parts of peninsular and offshore India offer large renewable energy opportunities, such as wind power. Developing a coordinated national strategy which aligns resources, regional vulnerabilities and mitigation/ adaptation efforts is thus urgent and complex.

Q15. Which one of the following statements best reflects the most logical and rational message conveyed by the passage?

- (a) Developing countries like India lack the will to raise the required climate adaptation finance.
- (b) The financial gap in adaptation is growing, and nation-states must urgently align resources with region-specific strategies.
- (c) India should concentrate only on exploiting its renewable energy potential rather than adaptation.
- (d) Climate risks in India are overstated; current finance is sufficient.

Answer: (b)

Explanation:

- Option (a) is incorrect because the passage does *not* discuss lack of will but highlights the **scale** of financing needed versus what is available.

- Option (b) is correct: The passage emphasises that developing countries need vast adaptation finance (US\$310 billion/year by 2035) and that India's diverse vulnerabilities require region-specific strategies.
- Option (c) is incorrect because the passage calls for both adaptation and mitigation (renewables) but emphasises adaptation finance and regional vulnerabilities rather than focusing solely on renewables.
- Option (d) is incorrect: The passage says the adaptation gap is **widening** and current finance is insufficient.

Q16. With reference to the passage, the following assumptions have been made:

I. Climate adaptation in India must be region-specific because vulnerabilities differ across states and zones.

II. The required adaptation finance of US\$310 billion annually by 2035 is feasible if the international community provides full support.

III. Focusing only on mitigation (renewable energy) will not adequately address the climate challenges faced by India.

Which of the above assumptions is/are valid?

- (a) I only
- (b) II only
- (c) I and III only
- (d) All three

Answer: (c)

Explanation:

- Assumption I is valid: The passage explicitly states that “coastal States... districts that are drier... Himalayan regions...” all face different challenges, so adaptation must recognise these regional differences.
- Assumption II is not valid: While the passage gives the figure (US\$310 billion/year by 2035) and says current finance is far below, it does not assert that this finance is “feasible” or guarantee international community will fully support it. That is an unwarranted extension.
- Assumption III is valid: The passage highlights both adaptation needs and the opportunities in renewables, but implicitly suggests that focusing only on mitigation (renewables) is **not enough** — adaptation also matters.

Directions for the following 4 (Four) items:

Read the following **two passages** and answer the items that follow the passages. Your answer to these items should be based on the passages only.

Passage 1

The notion of moral leadership in global affairs often collides with the reality of selective practice. Many of the world's most affluent nations proclaim the virtues of free trade, democratic governance and human rights. Yet a closer look at their own economic and institutional histories reveals deep-rooted contradictions. For instance, several countries that now champion open markets once relied heavily on tariffs and state subsidies to build their industrial base. These very nations demand intellectual property protection from others even while having historically withheld it themselves. The selective enforcement

of rights and rules, especially when applied to weaker states, creates a double standard: one rule for the powerful, another for the less powerful. In this sense, hypocrisy is built into the structure of international relations and economic development rather than being an aberration. Recognising these legacy calls for a more honest appraisal of global governance: if moral claims are to hold, they must be backed by consistent past and present conduct, and not merely by aspirational rhetoric.

Q17. Which one of the following statements best reflects the most logical and rational message conveyed by the passage?

- (a) The leading nations of the world are hypocritical and should renounce their moral leadership.
- (b) Historical inconsistencies in economic development undermine the moral credibility of global governance.
- (c) Free trade should be abandoned because it inherently carries double standards.
- (d) Developing countries should emulate the industrial strategies of now-rich nations without criticism.

Answer: (b)

Explanation:

- Option (a) is too strong and normative: the passage does condemn double standards, but it does not call for the complete renunciation of moral leadership; rather it calls for “honest appraisal.”
- Option (b) is correct: The passage argues that historical inconsistencies (tariffs, subsidies, selective IP enforcement) undermine the moral credibility of the powerful countries when they preach governance, rights and free trade.
- Option (c) is incorrect: The passage critiques hypocrisy in the implementation of free trade and governance, but does not argue that free trade itself should be abandoned.
- Option (d) is incorrect: The passage does not advise uncritical emulation; it points out the need for consistent conduct and historical accountability.

Thus, (b) captures the essence of the passage: **moral credibility in governance is threatened by historical hypocrisy.**

Q18. With reference to the passage, the following assumptions have been made:

- I. Historical behaviour of powerful nations matters for their present moral authority.
- II. Hypocrisy in international relations is always deliberate rather than structural or unintentional.
- III. To restore credibility, nations must align their current practices with their historical actions.

Which of the above assumptions is/are valid?

- (a) I only
- (b) I and III only
- (c) II only
- (d) All three

Answer: (b)

Explanation:

- Assumption I is valid: The passage explicitly links “their own economic and institutional histories” to the question of moral credibility.

- Assumption II is not valid: The passage says hypocrisy “is built into the structure of international relations and economic development rather than being an aberration.” That suggests structural, not necessarily deliberately malicious, hypocrisy.
- Assumption III is valid: The passage’s final lines call for “consistent past and present conduct, and not merely aspirational rhetoric,” which implies that to restore credibility, nations must align practices with history (or account for history).
Hence, only I and III are valid.

Passage 2

The current wave of investment in artificial-intelligence firms is unprecedented: large tech players are pouring billions into startups, while many AI companies are acquiring or taking equity stakes in one another, creating a tightly inter-woven network of financing and ownership. According to a study, some of this activity points to an echo-chamber effect: for example, one AI firm takes a stake in a chip-maker, while the chip-maker is a major supplier to another AI firm, which in turn invests in the first. This circular investment model inflates valuations and raises questions about how much of the money goes into genuine value-creation versus speculative positioning. Meanwhile, a report from a leading institute found that 95 % of generative AI projects are not yet delivering meaningful revenue, despite firms claiming large-scale deployments. In this context, the rhetoric around AI often emphasises transformative potential rather than proven outcomes — analysts are cautioning that the sector may be operating on hype, not results. They argue that without measurable business performance, the inflated valuations and interconnected investments risk creating a “bubble” that could harm investors and slow innovation when expectations crash.

Q19. Which one of the following statements best reflects the critical message conveyed by the author of the passage?

- (a) AI investments by large tech firms guarantee rapid revenue and business value.
- (b) The AI sector’s current investment dynamics are driven more by speculative hype and circular ownership than by verifiable performance.
- (c) Generative AI projects broadly deliver strong returns, validating the high valuations of AI companies.
- (d) Tech-startups should avoid taking equity stakes in each other to prevent a bubble.

Answer: (b)

Explanation:

- Option (a) is incorrect because the passage emphasises that **many AI investments are not yet delivering meaningful revenue**—so the guarantee of rapid value is rejected.
- Option (b) is correct: The passage highlights the “tight inter-woven network”, “circular investment model”, inflated valuations, and the risk that the sector may be operating “on hype, not results”. These all point to speculative dynamics rather than performance-driven investment.
- Option (c) is incorrect: It directly contradicts the report’s finding that 95 % of generative AI projects are not delivering meaningful revenue.
- Option (d) is too narrow and prescriptive. Although the passage warns of risks, it does not simply say “start-ups should not take equity stakes in each other”; rather it critiques the overall investment and ownership structure.
Hence, (b) best captures the critical, rational message of the passage.

Q20. With reference to the above passage, the following assumptions have been made:

I. The interconnected investments and ownership stakes among AI companies inflate valuations without necessarily increasing real business-value.

II. The transformative potential of AI is so established that profits will certainly follow soon, justifying current valuations.

III. Without measurable business performance, the high expectations in the AI sector can lead to an investment bubble.

Which of the above assumptions is/are valid?

- (a) I only
- (b) II only
- (c) I and III only
- (d) All three

Answer: (c)

Explanation:

- Assumption I is valid: The passage says there is an “echo-chamber effect” where firms invest in each other in a circular model, “inflates valuations” and asks how much goes into “genuine value-creation.” So yes — I is supported.
- Assumption II is not valid: While the passage notes the emphasis on transformative potential, it also cautions that this is **rhetoric** and results are lacking. It does *not* assume profits are certain or justify current valuations.
- Assumption III is valid: The passage warns that “without measurable business performance” and given “inflated valuations” and “hype”, the risk of a “bubble” exists. So III is supported. Therefore, only I and III are valid assumptions — making (c) the correct choice.

2. AGE RELATED

Q1. A father said to his son, "8 years ago, I was 4 times as old as you were. 8 years from now, I will be twice your age."

What is the difference in their present ages?

- (a) 20 years
- (b) 22 years
- (c) 24 years
- (d) 26 years

Answer: (c)

Solution:

Let son's present age = x

Father = $x + d$

8 years ago:

$$x + d - 8 = 4(x - 8)$$

$$\rightarrow x + d - 8 = 4x - 32$$

$$\rightarrow d = 3x - 24 \dots (1)$$

8 years ahead:

$$x + d + 8 = 2(x + 8)$$

$$\rightarrow x + d + 8 = 2x + 16$$

$$\rightarrow d = x + 8 \dots (2)$$

Equating (1) and (2):

$$3x - 24 = x + 8 \Rightarrow 2x = 32 \Rightarrow x = 16$$

$$\text{Then } d = x + 8 = 24$$

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3. ARRANGEMENTS

Q1. Consider the following statements and a question:

Question: What is the minimum possible number of persons in a queue if P, Q, and R are among them?

Statement I: There are 6 persons between P and Q, and 5 persons between Q and R.

Statement II: R is second from the front, and 14 people are behind P.

- (a) Statement I alone is sufficient
- (b) Statement II alone is sufficient
- (c) Both statements together are not sufficient
- (d) Both statements together are sufficient

Answer: (d)

Solution:

- Statement I: Order among P, Q, R is unknown → multiple sequences → insufficient
- Statement II: Fixes R and count behind P but not placements of Q or internal gaps → insufficient
- Combine: Place in R–Q–P order to minimize length. Then total = persons before R + R + 5 + Q + 6 + P + persons behind P = $1 + 1 + 5 + 1 + 6 + 1 + 14 = 29$. Hence, both together are sufficient.



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4. AVERAGE

Q1. The average salary of all workers in a unit is Rs. 6080. The average salary of male and female workers is Rs. 6800 and Rs. 5000 respectively. What is the percentage of male workers?

- (a) 60%
- (b) 65%
- (c) 70%
- (d) 75%

Answer: (a)

Solution:

Average of all = Rs. 6080

Male average = Rs. 6800

Female average = Rs. 5000

Let total workers = 100.

Total salary = $100 \times 6080 = \text{Rs. } 6.08 \times 10^5$.

Let males = $M \Rightarrow$ females = $100 - M$.

$6.08 \times 10^5 = 6800M + 5000(100 - M)$

$6.08 \times 10^5 = 6800M + 5.0 \times 10^5 - 5000M$

$(6.08 - 5.0) \times 10^5 = (6800 - 5000)M$

$1.08 \times 10^5 = 1800M$

$M = 60$

Hence, percentage of male workers = 60%.

Therefore, option (a) is correct.

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5. NUMBER SYSTEM

Q1. In a certain code, if 125 is written as 512 and 343 is written as 1000, then how is 27 written in that code?

- (a) 216
- (b) 343
- (c) 512
- (d) 729

Answer: (a)

Explanation

$125 = 5 \times 5 \times 5$ is coded as $512 = 8 \times 8 \times 8$

$343 = 7 \times 7 \times 7$ is coded as $1000 = 10 \times 10 \times 10$

So, $27 = 3 \times 3 \times 3$ would be coded as $216 = 6 \times 6 \times 6$

Hence, option (a) is correct.

Q2. There are digits 2, 3, 4, 5, 6, and 7.

I. More than 800 four-digit numbers can be formed if repetition is allowed.

II. More than 800 four-digit numbers can be formed if repetition is not allowed.

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

Answer: (a)

Solution:

I (repetition allowed): 6 choices for each of 4 places $\rightarrow 6^4 = 1296 > 800 \rightarrow$ True.

II (repetition not allowed): $6 \times 5 \times 4 \times 3 = 360 < 800 \rightarrow$ False.

Hence, (a) I only.

Q3. A number is formed by repeating a two-digit number three times, such as 252525 or 434343. Which of the following numbers will always divide such numbers?

- (a) 7
- (b) 13
- (c) 1001001
- (d) 10101

Answer: (d)

Solution:

Let the two-digit number be xy .

Actual number = $10000 \times xy + 100 \times xy + xy = (10000 + 100 + 1) \times xy = 10101 \times xy$.

Hence, such numbers are always divisible by **10101**.

Q4. Choose the group which is different from the others:

- (a) 64, 125, 216, 343
- (b) 8, 27, 64, 125
- (c) 1, 8, 27, 81
- (d) 27, 64, 125, 216

Answer: (c)

Solution:

Each group seems to represent **cubes of natural numbers**, check each:

- (a) $4^3, 5^3, 6^3, 7^3 \rightarrow$ all **perfect cubes**.
 (b) $2^3, 3^3, 4^3, 5^3 \rightarrow$ all **perfect cubes**.
 (c) $1^3, 2^3, 3^3, 81$ (**not a cube, $81 = 3^4$**) \rightarrow one term not a cube.
 (d) $3^3, 4^3, 5^3, 6^3 \rightarrow$ all **perfect cubes**.

Hence, group (c) is different because 81 is **not a perfect cube**.

Q5. How many 3-digit natural numbers (without repetition) are there such that each digit is odd and the number is divisible by 3?

- (a) 20
 (b) 24
 (c) 30
 (d) 36

Answer: (b)

Solution:

Allowed digits are odd: {1, 3, 5, 7, 9}. A 3-digit number with no repetition is divisible by 3 iff the sum of its digits is divisible by 3. Classify by residues mod 3:

- 0-class: {3, 9}
- 1-class: {1, 7}
- 2-class: {5}

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Valid triples must be of type (0,1,2). The only way is to choose one from each class: pick one from {3,9} (2 ways), one from {1,7} (2 ways), and 5 (1 way) $\Rightarrow 2 \times 2 \times 1 = 4$ sets.

Each set can be arranged in $3! = 6$ ways \Rightarrow total = $4 \times 6 = 24$.

Q6. Consider the following statements:

Statement I: There are 60 three-digit numbers divisible by 15.

Statement II: There are 100 three-digit numbers divisible by 5.

Which of the statements is/are correct?

- (a) I only
 (b) II only
 (c) Both I and II
 (d) Neither I nor II

Answer: (a)

Solution:

For Statement I:

Smallest 3-digit multiple of 15 = 105, largest = 990.

Count = $(990 - 105)/15 + 1 = 885/15 + 1 = 59 + 1 = 60 \rightarrow$ correct.

For Statement II:

Smallest 3-digit multiple of 5 = 100, largest = 995.

Count = $(995 - 100)/5 + 1 = 895/5 + 1 = 179 + 1 = 180 \rightarrow$ not 100 \rightarrow incorrect.
Hence, only Statement I is correct.

Q7. By what least number should 250 be multiplied to obtain a perfect cube?

- (a) 4
- (b) 5
- (c) 10
- (d) 20

Answer: (a)

Solution:

Prime factorization of $250 = 2^1 \times 5^3$.

To make it a perfect cube, the power of 2 must be a multiple of 3.

We have 2^1 , so multiply by $2^2 = 4$.

$250 \times 4 = 1000 = 10^3$.

Hence, least multiplier = 4

Q8. Let P = QQQ be a 3-digit number. What is the HCF of P and 481?

- (a) 1
- (b) 13
- (c) 37
- (d) 481

Answer : (c)

Solution:

$P = QQQ = Q \times 111 = Q \times 3 \times 37$ (Q can be 1, 2, 3,, 9)

And, $481 = 13 \times 37$

So, HCF of P & 481 = 37 (as Q cannot be 13)

Q9. If n is a natural number, then what is the number of distinct remainders of $(3^n + 4^n)$ when divided by 5?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Answer: (c)

Solution

Let's find the number of distinct remainders when $(3^n + 4^n)$ is divided by 5.

compute the first few terms:

For $n = 1$:

$3^1 + 4^1 = 7$, remainder = 2

For $n = 2$:

$3^2 + 4^2 = 9 + 16 = 25$, remainder = 0

For $n = 3$:

$$3^3 + 4^3 = 27 + 64 = 91, \text{ remainder} = 1$$

For $n = 4$:

$$3^4 + 4^4 = 81 + 256 = 337, \text{ remainder} = 2$$

The pattern now starts repeating because the powers of 3 and 4 repeat every 4 steps modulo 5.

The sequence of remainders is therefore 2, 0, 1, 2, 0, 1, 2, ...

Hence, the distinct remainders possible are **0, 1, and 2**.

Therefore, three distinct remainders are possible.

Q10. Consider the following numbers: 4209, 1358, 7642, 5913, 8801

The digits of each number are arranged in descending order.

Which of the following will be the 1st digit of the 3rd highest number thus formed?

- (a) 9
- (b) 8
- (c) 7
- (d) 6

Answer: (b)

Explanation:

Arrange each number's digits in descending order:

- 4209 → 9420
- 1358 → 8531
- 7642 → 7642
- 5913 → 9531
- 8801 → 8810

Arrange the new numbers in descending order:

- 9531 (Highest)
- 9420
- 8810 (3rd highest)
- 8531
- 7642

The 1st digit of the 3rd highest number (8810) is 8.

Q11. Consider the following sequence:

3, 5, 8, 9, 13, 14, 18, 19, @, @

Find the missing numbers that should replace @.

- (a) 23, 24
- (b) 22, 25
- (c) 26, 28
- (d) 27, 29

Answer: A

Explanation:

Given sequence: 3, 5, 8, 9, 13, 14, 18, 19, @, @

The given sequence is a combination of two alternating series:

1st series: 3, 8, 13, 18, @

Pattern:

$$3+5=8, 8+5=13, 13+5=18, @=18+5=23$$

2nd series: 5, 9, 14, 19, @

Pattern:

$5+4=9$, $9+5=14$, $14+5=19$, @= $19+5=24$,

Q12. Two-digit numbers AB and CD satisfy $AB - CD = 27$, and digits A, B, C, D are distinct non-zero digits. If $B = 5$ and $D = 8$, what is $A + B + C + D$?

- (a) 19
- (b) 21
- (c) 24
- (d) 27

Answer: (c)

Solution:

$AB = 10A + 5$, $CD = 10C + 8 \rightarrow (10A + 5) - (10C + 8) = 27 \Rightarrow 10(A - C) - 3 = 27 \Rightarrow 10(A - C) = 30 \Rightarrow A - C = 3$.

Possible (A, C): (4,1), (6,3), (7,4), (9,6). All digits must be distinct and $\neq 0$ with $B=5$, $D=8$.

Sums $A+B+C+D$: (4,1) \rightarrow 18; (6,3) \rightarrow 22; (7,4) \rightarrow 24; (9,6) \rightarrow 28.

Among the options only 24 appears $\rightarrow A+B+C+D = 24$.

Q13. A shopkeeper prints pages numbered from 1 to 18,000. He uses a special ink that costs ₹0.40 per digit only when digit 5 appears in the units or tens place. What is the total extra cost incurred?

- (a) ₹1,200
- (b) ₹1,360
- (c) ₹1,440
- (d) ₹1,500

Answer: (c)

Solution:

We only count 5s in units and tens place.

Units place: Every 10 numbers \rightarrow units digit = 5 once $\rightarrow 18,000 \div 10 = 1,800$ occurrences

Tens place: In every 100 numbers \rightarrow tens digit = 5 in 10 numbers $\rightarrow 18,000 \rightarrow 180$ blocks $\rightarrow 180 \times 10 = 1,800$ occurrences

Total 5s in units or tens = $1,800 + 1,800 = 3,600$

Cost = $3,600 \times ₹0.40 = ₹1,440$

Digit Place	Occurrences of Digit 5	Cost per Digit (₹)	Total Cost (₹)
Units	$18,000 / 10 = 1,800$	0.40	$1,800 \times 0.40 = 720$
Tens	$180 \times 10 = 1,800$	0.40	$1,800 \times 0.40 = 720$
Total	3,600		$720 + 720 = 1,440$

Hence, option (c) is correct.

Q14. Let a, b, c, d be distinct positive integers such that a, b, c are odd and d is even.

Consider the following statements

1. $(a + b + c + d)$ is even
2. $abc + d$ is odd
3. $a \cdot b \cdot c \cdot d$ is even

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Answer: (b)

Solution:

a, b, c odd; d even

4. $a + b + c + d = \text{odd} + \text{odd} + \text{odd} + \text{even} = \text{odd} \rightarrow \text{False}$
5. $abc = \text{odd} \times \text{odd} \times \text{odd} = \text{odd} \rightarrow \text{odd} + d(\text{even}) = \text{odd} \rightarrow \text{True}$
6. Product includes even (d) \rightarrow overall even $\rightarrow \text{True}$
Hence, 2 and 3 only \rightarrow option (b).

Q15. A Question is given followed by two Statements I and II. Consider the Question and the Statements.

Question: What are the values of two natural numbers, a and b?

Statement I: The sum of a and b is 12.

Statement II: The product of a and b is 32.

- (a) Either statement alone is sufficient
- (b) Only one of the statements is sufficient
- (c) Both statements together are necessary
- (d) Even both statements together are not sufficient

Answer: (c)

Explanation:

Statement I: $a + b = 12 \rightarrow$ Possible pairs: (1,11), (2,10), (3,9), (4,8), (5,7), (6,6) \rightarrow Not unique

Statement II: $ab = 32 \rightarrow$ Possible pairs: (1,32), (2,16), (4,8) \rightarrow Not unique

Combining both: Only (4,8) satisfies both \Rightarrow Unique.

Hence, option (c).

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6. PIPES AND CISTERNS

Q3. A set (X) of 24 pipes can fill 60% of a tank in 12 minutes. Another set (Y) of 12 pipes fills $\frac{3}{8}$ of the tank in 9 minutes. A third set (Z) of 10 pipes can empty $\frac{1}{4}$ of the tank in 10 minutes. If half of the pipes of set X are closed and only half of the pipes of set Y are open, and all pipes of the set (Z) are open, then how long will it take to fill 50% of the tank?

- (a) 12 minutes
- (b) 16 minutes
- (c) 20 minutes
- (d) 24 minutes

Answer: (d)

24 X pipes fill 60% in 12 min \rightarrow full tank time = $(12/60) \times 100 = 20$ min. Half X open \Rightarrow time doubles = 40 min.

12 Y pipes fill $\frac{3}{8}$ in 9 min \rightarrow full tank time = $9 \div (\frac{3}{8}) = 24$ min. Half Y open \Rightarrow time doubles = 48 min.

10 Z pipes empty $\frac{1}{4}$ in 10 min \rightarrow full empty time = $10 \div (\frac{1}{4}) = 40$ min.

X (half) fills in 40 min and Z empties in 40 min \Rightarrow they cancel. So only Y (half) remains: to fill 50% with a 48-min full time takes 24 minutes.



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7. PERCENTAGES

Q1. In a survey, people were asked if they preferred tea over coffee.

Question: How many people preferred coffee?

Statement I: 60% of the people preferred tea.

Statement II: 120 people preferred coffee.

Which one of the following is correct in respect of the above Statements and the Question?

- (a) Statement I alone is sufficient to answer the question.
- (b) Statement II alone is sufficient to answer the question.
- (c) Both Statement I and Statement II together are sufficient to answer the question.
- (d) Statement I and Statement II together are insufficient to answer the question.

Answer: (b)

Solution:

- **Statement I:**
60% preferred tea \Rightarrow 40% preferred coffee
But total number of people is unknown \Rightarrow **Not sufficient alone**
- **Statement II:**
120 people preferred coffee \Rightarrow Directly answers the question
 \Rightarrow **Sufficient alone**
- **Combining both:**
Not needed. Statement II alone is enough.

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Q2. On a product, a store offers:

1. Three successive discounts of 12%, 12%, and 5%, then GST of 10%.
2. GST of 10% first, then three successive discounts of 12%, 12%, and 5%.
3. Reordering the three discounts (any order), then GST of 10%.

Which statement is correct?

- (a) 1 only is best for the customer
- (b) 2 only is best for the customer
- (c) 3 only is best for the customer
- (d) All options give the same final price

Answer: (d)

Solution:

Let the marked price be M . Three successive discounts of 12%, 12%, 5% multiply the price by $0.88 \times 0.88 \times 0.95 = 0.73568$. A 10% GST multiplies by 1.10.

- Option 1 (discounts then GST): final factor = $0.73568 \times 1.10 = 0.809248$.
- Option 2 (GST then discounts): final factor = $1.10 \times 0.88 \times 0.88 \times 0.95 = 0.809248$.
- Option 3 (any order of the three discounts, then GST): discounts commute, so the discount product is still 0.73568; applying GST gives $0.73568 \times 1.10 = 0.809248$.

Because multiplication is commutative, the overall factor is identical in all three cases. Thus, every option yields the same final price, 0.809248 *M*.



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8. PROBABILITY

Q1. Two cards are drawn at random from a standard deck without replacement. What is the probability that both cards are red and from the same suit?

- (a) 13/221
- (b) 26/221
- (c) 39/221
- (d) 52/221

Answer: (b)

Solution:

Red suits: Hearts (13) and Diamonds (13).

Favourable outcomes = ${}^{13}C_2$ (both Hearts) + ${}^{13}C_2$ (both Diamonds) = 78 + 78 = 156.

Total outcomes = ${}^{52}C_2 = 1326$.

Probability = $156/1326 = 26/221$.

Q2. Two factories, Factory A and Factory B, produce an equal number of units daily. Factory A reports 10 defective units per 100, while Factory B reports 8 per 100. However, when machine-related defects are excluded, Factory A has 2 fewer defective units per 100 than Factory B.

- (a) Factory B's machines are more efficient than Factory A's.
- (b) Machine faults cause more defects at Factory A than at Factory B.
- (c) Factory A has better maintenance quality than Factory B.
- (d) Factory B produces more faulty units overall.

Answer: (b)

Explanation:

- Factory A has more total defects (10 vs. 8).
 - When machine faults are removed, Factory A has fewer (-2 difference).
→ Hence, machine faults contribute more to Factory A's defect rate.
- Therefore, (b) is correct.

9. PROFIT AND LOSS

Q1. A question is given followed by two statements:

Question: What is the percentage loss on selling a bicycle?

Statement I. The selling price was ₹840.

Statement II. The cost price was ₹1050.

Options:

- (a) If statement I alone is sufficient to answer the question.
- (b) If statement II alone is sufficient to answer the question.
- (c) If both the statements I & II together are not sufficient to answer the question.
- (d) If both the statements I & II together are sufficient to answer the question.

Answer: (d)

Explanation:

Statement I alone:

SP = ₹840, but CP is unknown → **not sufficient**

Statement II alone:

CP = ₹1050, but SP is unknown → **not sufficient**

Together:

CP = ₹1050, SP = ₹840

Loss = ₹1050 – ₹840 = ₹210

Loss % = $(210 / 1050) \times 100 = 20\%$

So, both statements **together** are sufficient

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Q2. Consider the following statements:

I. The cost price of 12 articles is equal to the selling price of 15 articles, so the profit is 25%.

II. The selling price of 8 articles is equal to the cost price of 10 articles, so the loss is 20%.

Which of the statements are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

Answer: (d)

Solution:

Statement I:

CP of 12 = SP of 15

⇒ SP of 1 = $12/15 = 0.8$ CP ⇒ SP < CP ⇒ **loss = 20%**, not profit 25%.

Hence, statement I is **wrong**.

Statement II:

SP of 8 = CP of 10

⇒ SP of 1 = $10/8 = 1.25$ CP ⇒ SP > CP ⇒ **profit = 25%**, not loss 20%.

Hence, statement II also **wrong**.

So, both incorrect

10. SPEED AND TIME

Q1. A question is given followed by two statements:

Question: What is the speed of the train?

Statements:

I. The train crosses a platform 300 m long in 30 seconds.

II. The train crosses a man standing on the platform in 18 seconds.

(a) If statement I alone is sufficient to answer the question.

(b) If statement II alone is sufficient to answer the question.

(c) If both the statements I & II together are not sufficient to answer the question.

(d) If both the statements I & II together are sufficient to answer the question.

Answer: (d)

Explanation:

Let the train's length = L metres and its speed = S m/s.

From Statement I:

Total distance = L + 300; time = 30 s $\Rightarrow S = (L + 300)/30$. (Two variables \Rightarrow not sufficient.)

From Statement II:

Distance = L; time = 18 s $\Rightarrow S = L/18$.

Solving both equations simultaneously:

$L/18 = (L + 300)/30 \Rightarrow 30L = 18L + 5400 \Rightarrow 12L = 5400 \Rightarrow L = 450$ m.

Then $S = 450 / 18 = 25$ m/s = $25 \times 18/5 = 90$ km/h.

Both statements together are required.

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11. SET THEORY

Q1. In an eligibility test, 50% were boys and 50% were girls. 60% of both boys and girls cleared prelims. In the final, 50% of both boys and girls (who cleared prelim) were successful. Which of the following is correct?

- (a) Success rate is higher for boys.
- (b) Success rate is higher for girls.
- (c) Overall success rate is below 35%.
- (d) More boys cleared the exam than girls.

Answer: (c)

Solution:

Let total = 1000 \Rightarrow Boys = 500, Girls = 500.

Prelim: Boys = $500 \times 0.60 = 300$; Girls = 300.

Final: Boys = $300 \times 0.50 = 150$; Girls = 150.

Success rates: Boys = $150/500 = 30\%$; Girls = $150/500 = 30\%$ (equal).

Overall = $(150+150)/1000 = 300/1000 = 30\%$ ($<35\%$).

Hence only (c) is true.



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12. TRIANGLE AND RECTANGLE BASED

Q1. A cube of side 12 cm is painted on all its faces and then cut into small cubes of side 3 cm.

Statement I: The number of cubes with exactly two faces painted is 28.

Statement II: The number of cubes with no face painted is 8.

Which statement(s) is/are correct?

- (a) Only I
- (b) Only II
- (c) Both I and II
- (d) Neither I nor II

Answer: (b)

Solution:

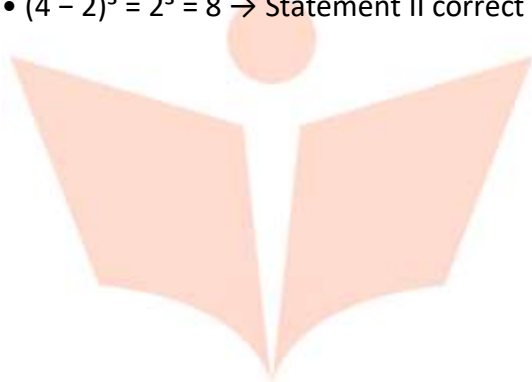
- Side of original cube = 12 cm $\Rightarrow 12/3 = 4$ divisions per edge
- Total small cubes = $4^3 = 64$

Cubes with Exactly Two Faces Painted:

- Edge (excluding corners): per edge = $4 - 2 = 2$
- Total = $12 \times 2 = 24$ (not 28) \rightarrow Statement I incorrect

Cubes with No Face Painted (interior):

- $(4 - 2)^3 = 2^3 = 8 \rightarrow$ Statement II correct



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13. WORK AND WAGES

Q1. If X, Y, Z, and W are four workers, then consider the following statements and a question:

Statement I: The total work done by X and Z in 12 days is the same as the total work done by Y and W in 10 days.

Statement II: The average work done by Y and Z per day is 22 units.

Statement III: The sum of the work done per day by X and W is equal to that of Y and Z.

Question: What is the total work done by all four workers in one day?

- (a) Statement I alone is sufficient to answer the question.
- (b) Statement II alone is sufficient to answer the question.
- (c) Statement III alone is sufficient to answer the question.
- (d) Statement II and Statement III together are sufficient to answer the question.

Answer: (d)

Explanation:

Statement I alone is insufficient as it only relates $(X+Z)$ and $(Y+W)$ with time multipliers.

Statement II: Average of Y and Z is 22 $\Rightarrow Y+Z = 44$.

Statement III: $X+W = Y+Z \Rightarrow X+W = 44$.

Hence total per day = $(X+W)+(Y+Z) = 44+44 = 88$ units. Therefore, II and III together are sufficient.

Q2. X can complete one-half of a certain work in 15 days, Y can complete one-fourth of the same work in 5 days and Z can complete two-thirds of the same work in 16 days. All of them work together for n days and then X and Z quit and Y alone finishes the remaining work in $7\frac{1}{2}$ days. What is n equal to?

- (a) 3
- (b) 4
- (c) 5
- (d) 6

Answer: (c)

X can complete total work in $15 \times 2 = 30$ days

Y can complete total work in $5 \times 4 = 20$ days

Z can complete total work in $16 \div (2/3) = 24$ days

Let total work = $\text{LCM}(30, 20, 24) = 120$ units

Efficiency of X = $120/30 = 4$ units/day

Efficiency of Y = $120/20 = 6$ units/day

Efficiency of Z = $120/24 = 5$ units/day

Together = $(4 + 6 + 5) = 15$ units/day

Work done by Y alone in $7\frac{1}{2}$ days = $6 \times 7.5 = 45$ units

Remaining work before Y's solo = $120 - 45 = 75$ units

Time for all three to do 75 units = $75/15 = 5$ days $\Rightarrow n = 5$

14. RATIO AND PARTNERSHIP

Q1. A fund of ₹75,600 is to be shared among 8 lecturers, 24 staff, and 48 students in the per-head ratio 5 : 4 : 3. Before distributing, 10% of the total is kept aside for a welfare fund and then deducted proportionately from each group's allocation. What is the final per-student share?

- (a) ₹702
- (b) ₹720
- (c) ₹729
- (d) ₹750

Answer: (c)

Solution:

Group-weighted parts:

Lecturers: $8 \times 5 = 40$

Staff: $24 \times 4 = 96$

Students: $48 \times 3 = 144$

Total parts = $40 + 96 + 144 = 280$.

Each part (before deduction) = $75,600 / 280 = ₹270$.

Initial allocations:

- Lecturers = $40 \times 270 = ₹10,800$

- Staff = $96 \times 270 = ₹25,920$

- Students = $144 \times 270 = ₹38,880$

Per student (initial) = $38,880 / 48 = ₹810$.

10% kept aside proportionately \Rightarrow everyone loses 10%.

Final per-student = $810 \times 0.90 = ₹729$.

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Q2. At the end of one year, what is the ratio of profits of **A** and **B** (after paying A a fixed remuneration from profits before division)?

I. A invested ₹60,000 for 12 months; B invested ₹90,000 for 8 months.

II. A, as the working partner, is to receive a fixed remuneration of ₹24,000 from the year's profit before division.

III. The total profit for the year was ₹1,44,000.

Which of the following is correct with respect to above?

- (a) I and II only
- (b) II and III only
- (c) All I, II and III
- (d) Even with all I, II and III together, the answer cannot be arrived at.

Answer: (c)

Explanation:

From I: capital-months $\rightarrow A = 60,000 \times 12 = 7,20,000$; $B = 90,000 \times 8 = 7,20,000 \rightarrow$ balance ratio **1 : 1**.

From II and III: Total profit = ₹1,44,000; pay fixed ₹24,000 to A; balance = ₹1,20,000 to be split equally \rightarrow ₹60,000 each.

Thus final: $A = 24,000 + 60,000 = ₹84,000$; $B = ₹60,000 \rightarrow$ ratio **84 : 60 = 7 : 5**.

Here the fixed remuneration makes the ratio depend on the **actual total profit**, so III is essential; all I, II and III together are required.

Q3. A, B and C invest respectively ₹9,000 for 12 months, ₹12,000 for 9 months, and ₹15,000 for 6 months. C is the working partner and takes 8% of the profit as commission. If the total profit is ₹17,000, what is C's share (including commission)?

- (a) ₹5,520
- (b) ₹5,760
- (c) ₹5,960
- (d) ₹6,160

Answer: (c)

Solution:

Capital–months:

$A = 9,000 \times 12 = 108,000$; $B = 12,000 \times 9 = 108,000$; $C = 15,000 \times 6 = 90,000$

Ratio $A : B : C = 108,000 : 108,000 : 90,000 = 6 : 6 : 5$ (sum = 17)

Commission to C = 8% of 17,000 = ₹1,360

Balance for division = 17,000 – 1,360 = ₹15,640

From balance, C's part = $(5/17) \times 15,640 = 5 \times 920 = ₹4,600$

Total C (with commission) = 4,600 + 1,360 = **₹5,960**.

Q4. A, B, and C invested ₹50,000, ₹40,000, and ₹60,000 respectively. A withdrew his capital after 8 months, B after 10 months, while C remained for the whole year. If the total profit is ₹38,000, find A's share in the profit.

- (a) ₹8,000
- (b) ₹9,000
- (c) ₹10,000
- (d) ₹11,000

Answer: (c)

Solution:

$A = 50,000 \times 8 = 4,00,000$

$B = 40,000 \times 10 = 4,00,000$

$C = 60,000 \times 12 = 7,20,000$

Ratio $A : B : C = 400000 : 400000 : 720000 = 10 : 10 : 18 = 5 : 5 : 9$

Total parts = 5 + 5 + 9 = 19

A's share = $(5/19) \times 38,000 = 5 \times 2,000 = \mathbf{₹10,000}$.

Q5. In a college, students who chose Arts, Commerce, and Science are in the ratio 7 : 9 : 11. The number of Science students exceeds Arts students by a number that is a multiple of both 20 and 30. What is the minimum number of students?

- (a) 360
- (b) 378
- (c) 405
- (d) 432

Answer: (c)

Solution:

Let the numbers be $7x$, $9x$, $11x$.

Difference (Science – Arts) = $11x - 7x = 4x$. We need $4x = \text{LCM}(20, 30) = 60 \Rightarrow x = 15$.

Total = $(7 + 9 + 11) \times 15 = 27 \times 15 = 405$.

Q6. X and Y start a business with capitals in the ratio 5 : 8. After 4 months, X doubles his capital while Y withdraws half of his capital. If the total profit at the end of the year is ₹20,500, what is Y's share in the profit?

- (a) ₹7,500
- (b) ₹8,000
- (c) ₹8,200
- (d) ₹8,500

Answer: (b)

Solution:

Let initial capital of X = $5x$, Y = $8x$

For first 4 months:

- X = $5x \times 4$
- Y = $8x \times 4$

For next 8 months:

- X = $(10x) \times 8$
- Y = $(4x) \times 8$

Total:

- X = $20x + 80x = 100x$
- Y = $32x + 32x = 64x$

Ratio = $100x : 64x = 25 : 16$

Total parts = 41

Y's share = $(16/41) \times 20,500 = ₹8,000$



15. SEQUENCES

Q1. Consider the following series and identify how many statements are correct:

1. In the series 1, 4, 9, 16, 27, 36, 49, the wrong term is 27.
2. In the series 5, 11, 23, 47, 95, 191, the wrong term is 191.
3. In the series 3, 5, 9, 17, 33, 65, the wrong term is 33.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Answer: (a)

Solution:

- (1) Squares: $1^2, 2^2, 3^2, 4^2, 5^2(25), 6^2(36), 7^2(49)$. Here 27 should be 25 \rightarrow wrong term correctly identified \Rightarrow correct.
- (2) Pattern $\times 2 + 1$: $5 \rightarrow 11 \rightarrow 23 \rightarrow 47 \rightarrow 95 \rightarrow 191$ (all correct). Saying 191 is wrong \Rightarrow incorrect statement.
- (3) Differences double each step: $+2, +4, +8, +16, +32 \rightarrow 3, 5, 9, 17, 33, 65$ is consistent. Saying 33 is wrong \Rightarrow incorrect.

Hence only statement (1) is correct.

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16. MISCELLANEOUS

Q1. Consider the following question and the statement that follows:

Question: In a circus, rabbits and parrots are kept together in cages. How many rabbits are there?

Statement 1: The total number of heads is 35.

Statement 2: The total number of legs is 94.

Statement 3: The number of parrots is more than the number of rabbits.

Which of the following is correct with respect to the above?

- (a) Statement-1 and Statement-2 are sufficient
- (b) Statement-2 and Statement-3 are sufficient
- (c) Statement-1 and Statement-3 are sufficient
- (d) All three statements are not sufficient

Answer: (a)

Explanation:

Let parrots = P (2 legs), rabbits = R (4 legs)

Each animal has one head, so:

From **Statement 1:**

$$P + R = 35 \rightarrow \text{(Equation 1)}$$

From **Statement 2:**

$$2P + 4R = 94 \rightarrow \text{divide by 2:}$$

$$P + 2R = 47 \rightarrow \text{(Equation 2)}$$

Subtract (1) from (2):

$$(P + 2R) - (P + R) = 47 - 35$$

$$R = 12 \Rightarrow \text{rabbits} = 12$$

$$P = 35 - 12 = 23$$

So, we get a unique solution from Statement 1 and 2.

Statement 3 is not required.



Q2. A Statement is given followed by two Conclusions numbered I and II. Consider the Statement and the Conclusions.

Statement:

All schools in the district have been instructed to install CCTV cameras to enhance student safety.

Conclusions:

I. Students were unsafe before CCTV cameras were installed.

II. CCTV cameras are considered useful for improving student safety.

Which one of the following is correct?

- (a) Only Conclusion I follows
- (b) Only Conclusion II follows
- (c) Both I and II follow
- (d) Neither I nor II follows

Answer: B

Explanation:

- **Conclusion I:** Assumes a negative condition not stated in the original statement. It's an assumption, not a conclusion.
- **Conclusion II:** Directly aligns with the stated intent of installing cameras.

So, option B is correct here.

Q3. At a literature festival, each next row had 5 more delegates than the previous. The first row had 15 delegates. If the total number of delegates was 20 times the number of rows, and VIP delegates were one-fourth of the total, find their number.

- (a) 12
- (b) 15
- (c) 18
- (d) 20

Answer: (b)

Solution:

Let number of rows = n .

Total delegates = $20n$.

AP: 15, 20, 25, ... where $a = 15$, $d = 5$.

Sum = $(n/2)[2a + (n - 1)d] = (n/2)[30 + 5(n - 1)] = (n/2)(5n + 25)$.

Equating: $(n/2)(5n + 25) = 20n \rightarrow (1/2)(5n + 25) = 20 \rightarrow 5n + 25 = 40 \rightarrow n = 3$.

Total delegates = $20 \times 3 = 60$.

VIP delegates = $(1/4) \times 60 = 15$.



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