

NIFT MFTECH 2024 Question Paper with Solutions

Time Allowed :180 minutes	Maximum Marks :150	Total questions :150
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. The examination duration is 180 minutes. Manage your time effectively to attempt all questions within this period.
2. The total marks for this examination are 150. Aim to maximize your score by strategically answering each question.
3. There are 5 section in the question paper: Communication Ability & English comprehension, Case study, Quantative Ability, Analytical & logical ability, General Knowledge and current affairs containing 45, 25, 30, 25, 25 question respectively.
4. There is 0.25 negative marks for each wrong answer

1. Fill in the blanks: He ____ the newspaper when Ved came____.

- (A) was read. in
- (B) read. on
- (C) was reading, in
- (D) had read. about

Correct Answer: (C) was reading, in

Solution:

The correct answer is "was reading, in" because the sentence describes an ongoing action at the moment Ved came. Therefore, the correct tense is past continuous ("was reading"). The correct preposition here is "in" as it is commonly used when referring to reading something.

Quick Tip

When describing an action that was ongoing at a specific point in the past, use the past continuous tense (was/were + verb-ing).

2. Correct the given sentence: Anyone of the two girls can solve this puzzle.

- (A) Anyone of the two girl can solve this puzzle.
- (B) Either of the two girl can solve this puzzle.
- (C) Anyone of the two girls can have solved this puzzle.
- (D) Either of the two girls can solve this puzzle.

Correct Answer: (D) Either of the two girls can solve this puzzle.

Solution:

The phrase "Anyone of the two girls" is incorrect because "anyone" is singular, but "girls" is plural. The correct phrase is "Either of the two girls", as "either" is used when referring to one of two things or people.

Quick Tip

When referring to one of two people or things, use "either" instead of "anyone."

3. Correct the given sentence: She denied to use any force to get him accept his fault.

- (A) She denied used any force to have him accept his fault.
- (B) She denied use of any force to get him accept his fault.
- (C) She denied using any force to get him to accept his fault.
- (D) She denied having used any force to have him accept his fault.

Correct Answer: (C) She denied using any force to get him to accept his fault.

Solution:

The correct construction is "denied using" because the verb "deny" is typically followed by a gerund (verb-ing). The correct phrasing here is "to get him to accept" as the verb "get" is followed by "to" when it indicates causation.

Quick Tip

After verbs like "deny," "enjoy," and "admit," use a gerund (verb-ing).

4. Correct the given sentence: The leaders which do not love their country are not respected.

- (A) The leaders that do not love their country are not respected.
- (B) The leaders which do not love his country is not respected.
- (C) The leaders who do not love his country are not respected.
- (D) The leaders who do not love their country are not respected.

Correct Answer: (D) The leaders who do not love their country are not respected.

Solution:

The correct relative pronoun for people is "who," not "which." The sentence refers to people (leaders), so "who" should be used instead of "which." Also, the plural subject "leaders" requires the plural verb "are."

Quick Tip

Use "who" for people and "which" for things.

5. Choose the appropriate phrase to replace the underlined part: During his long discourse he did not touch that point.

- (A) touch into
- (B) touch with
- (C) touch on
- (D) touch upon

Correct Answer: (D) touch upon

Solution:

The correct phrase is "touch upon," which means to briefly discuss or mention a topic. The phrase "touch on" is also correct and is commonly used in the same context. However, "touch upon" is the preferred choice in formal writing.

Quick Tip

"Touch upon" means to briefly mention or address a subject.

6. Choose the appropriate phrase to replace the underlined part. This matter admits under no excuse.

- (A) admits of
- (B) admits over
- (C) admits with
- (D) admits in

Correct Answer: (A) admits of

Solution:

The correct phrase is "admits of" because it is the right expression to use when something is allowed or tolerated. The phrase "admits under no excuse" is grammatically incorrect in

English. The proper construction should be "admits of no excuse", which means there is no room for an excuse in this matter.

Here is the detailed explanation:

- Admit of: This means to allow or tolerate something, commonly used with things that can be argued, explained, or justified.
- The other options "admits over," "admits with," and "admits in" do not correctly convey the intended meaning.

Quick Tip

"Admits of" is a common phrase used when something is allowed or capable of being tolerated. In legal or formal contexts, it indicates that there is no exception to a rule or standard.

7. Choose the word with nearly the same meaning as the given word. EXIGUOUS

- (A) tall
- (B) large
- (C) abundant
- (D) scanty

Correct Answer: (D) scanty

Solution:

The word "exiguous" means very small, limited, or insufficient in amount. The correct synonym here is "scanty", which refers to something that is insufficient or lacking in quantity. Let's go through each option:

- Tall: Refers to height, not related to the meaning of "exiguous."
- Large: Opposite of "exiguous," as it means something that is big or substantial.
- Abundant: Means plentiful or abundant, the opposite of "exiguous."
- Scanty: Means small, insufficient, or lacking in amount, which is the exact meaning of "exiguous."

Therefore, the correct answer is "scanty".

Quick Tip

"Exiguous" is typically used to describe something very small or insufficient in quantity, similar to "scanty," which means lacking or insufficient.

8. Choose the word with nearly the same meaning as the given word. OFFICIOUS

- (A) Pushing
- (B) modest
- (C) stubborn
- (D) mystic

Correct Answer: (A) Pushing

Solution:

The word "officious" refers to someone who is excessively eager to offer services or to meddle in others' affairs, often in a way that is intrusive or unwanted. The correct synonym here is "pushing", which refers to being overly forward or eager, often in a manner that is not well received. Let's analyze the options:

- Pushing: This means being overly forward or meddlesome, which aligns with "officious."
- Modest: Refers to being humble, the opposite of "officious."
- Stubborn: Refers to being resistant to change, not related to "officious."
- Mystic: Refers to something related to mysticism, unrelated to "officious."

Therefore, the correct answer is "pushing".

Quick Tip

"Officious" often carries a negative connotation, implying excessive involvement or meddling in situations where it is not required.

9. Choose the word with nearly the same meaning as the given word. SOMBRE

- (A) causing sleep
- (B) squalid

- (C) gloomy
- (D) malicious

Correct Answer: (C) gloomy

Solution:

The word "sombre" means dark, dull, or melancholic, often used to describe a mood or atmosphere. The closest synonym is "gloomy," which also refers to something dark, depressing, or cheerless. Here's the analysis of the options:

- Causing sleep: Refers to something that induces sleep, not related to "sombre."
- Squalid: Refers to something dirty or unpleasant, not related to "sombre."
- Gloomy: Refers to something dark, depressing, or melancholic, which is exactly the meaning of "sombre."
- Malicious: Refers to harmful intent, unrelated to "sombre."

Therefore, the correct answer is "gloomy".

Quick Tip

"Sombre" is often used to describe a serious, dark, or melancholic atmosphere, similar to the word "gloomy," which evokes a sense of sadness or dullness.

10. Give one word for the given expression. That which cannot be done without.

- (A) impracticable
- (B) impossible
- (C) unmanageable
- (D) indispensable

Correct Answer: (D) indispensable

Solution:

The term "indispensable" refers to something that is absolutely necessary or essential, without which something cannot function. Here's the analysis of the options:

- Impracticable: Refers to something that is not feasible or workable, the opposite of "indispensable."

- Impossible: Refers to something that cannot be done at all, which is not the same as "indispensable."
 - Unmanageable: Refers to something that cannot be managed, unrelated to the concept of something being essential.
 - Indispensable: Means something that is absolutely necessary, which is the correct meaning of "that which cannot be done without."
- Therefore, the correct answer is "indispensable".

Quick Tip

"Indispensable" refers to something so important or essential that it cannot be done without. It's often used in contexts where something is crucial or necessary for success.

11. Give one word for the given expression. Plants that draw sustenance from one another.

- (A) parasitic
- (B) symbiotic
- (C) co-biotic
- (D) subsistant

Correct Answer: (B) symbiotic

Solution:

The term "symbiotic" refers to a relationship between two organisms where they benefit from each other, often seen in plants that draw sustenance or resources from one another.

Here is the explanation for each option:

- Parasitic: Refers to a relationship where one organism benefits at the expense of the other, not the same as "symbiotic."
- Symbiotic: Refers to a mutually beneficial relationship, which is what plants that draw sustenance from one another do.
- Co-biotic: Not a standard term, incorrect in this context.
- Subsistant: Refers to something that sustains or supports life, not specific to relationships between plants.

Therefore, the correct answer is "symbiotic".

Quick Tip

A "symbiotic" relationship is one where two organisms live together and both benefit from the relationship, such as in plants that rely on each other for sustenance.

12. Give one word for the given expression. One who goes into space.

- (A) astronomer
- (B) astrologer
- (C) astronaut
- (D) jetsetter

Correct Answer: (C) astronaut

Solution:

The term "astronaut" refers to a person who is trained to travel and work in space. Let's look at the options:

- Astronomer: Refers to a scientist who studies stars, planets, and other celestial bodies, but not a person who travels in space.
- Astrologer: Refers to someone who studies or interprets the influence of celestial bodies on human affairs, unrelated to space travel.
- Astronaut: The correct term for someone who travels into space.
- Jetsetter: Refers to someone who travels frequently, but not necessarily into space.

Therefore, the correct answer is "astronaut".

3. *astronaut*

Quick Tip

An "astronaut" is a person trained for space travel, while "astronomers" study the stars and "astrologers" interpret the influence of celestial bodies.

13. Give one word for the given expression. Words inscribed on the tomb.

- (A) eulogy
- (B) epitaph
- (C) epigraph
- (D) epigram

Correct Answer: (B) epitaph

Solution:

The term "epitaph" refers to an inscription on a tombstone, commemorating the person buried there. Here's the analysis of the options:

- Eulogy: Refers to a speech or writing in praise of someone, typically delivered at a funeral or memorial service, but it is not inscribed on a tomb.
- Epitaph: Refers specifically to the inscription on a tombstone, often summarizing the deceased person's life or achievements.
- Epigraph: Refers to a short quotation or inscription at the beginning of a book or chapter, not related to tombstones.
- Epigram: Refers to a short, witty, or satirical poem or remark, unrelated to inscriptions on tombs.

Therefore, the correct answer is "epitaph".

2. *epitaph*

Quick Tip

An epitaph is an inscription on a tombstone, while an eulogy is a speech given at a funeral, and epigrams are witty sayings or poems.

14. Fill in the blank with the appropriate word. Divide these twelve apples ___ three boys standing on the road.

- (A) to

- (B) for
- (C) between
- (D) among

Correct Answer: (D) among

Solution:

The correct phrase is "among three boys" because "among" is used when referring to a group or collection of people or things. In contrast, "between" is used when referring to two people or things, not three.

- To: Is used for direction or purpose, not in the context of dividing things between people.
- For: Generally used to indicate purpose or intended recipient, not for distribution.
- Between: Used for two people or things.
- Among: Correctly used for dividing items among a group of people.

Thus, the correct answer is "among".

4. *among*

Quick Tip

Use "among" when referring to distributing items to more than two people or things.
"Between" is used for two people or things.

15. Fill in the blank with the appropriate word. There were many interruptions ___ the chairman's speech.

- (A) for
- (B) during
- (C) while
- (D) at

Correct Answer: (B) during

Solution:

The correct word is "during", as it refers to something happening within a specified time period, such as during the speech. Here's the breakdown of the options:

- For: Refers to purpose or reason, not suitable for time-related expressions.
- During: Correctly used to indicate something that occurs within a time frame, such as "during the speech."
- While: Can be used, but "during" is more fitting when referring to events that occur in a period of time.
- At: Refers to a specific point in time, but we need to express the ongoing nature of the interruptions, making "during" the better choice.

Therefore, the correct answer is "during".

Quick Tip

Use "during" when referring to something happening within a specified time frame, such as "during the meeting" or "during the speech."

16. Fill in the blanks. I was ___ soundly and ___ that a dog had entered the room.

- (A) sleeps, dreamt
- (B) sleeping, dreams
- (C) slept, dreaming
- (D) sleeping, dreamt

Correct Answer: (D) sleeping, dreamt

Solution:

The correct choice is "sleeping" and "dreamt". This is because the sentence is in the past continuous tense for the action of sleeping and the past tense for the act of dreaming.

- Sleeping indicates an ongoing action in the past.
- Dreamt is the past tense form of "dream".

Thus, the correct sentence is: "I was sleeping and dreamt that a dog had entered the room."

Quick Tip

Use "sleeping" (continuous form) to describe an ongoing action in the past and "dreamt" (simple past) for an event that happened during that time.

17. Fill in the blanks. The sun shines ___ day and the moon ___ night.

- (A) by, by
- (B) in, by
- (C) at, at
- (D) by, in

Correct Answer: (A) by, by

Solution:

The correct option is "by, by". This is because the phrase "by day" and "by night" is a common expression used to refer to something occurring during the day and night, respectively.

- By day refers to during the day.
- By night refers to during the night.

Thus, the correct sentence is: "The sun shines by day and the moon by night."

Quick Tip

"By day" and "by night" are common expressions to refer to things that happen during the day or night.

18. Fill in the blank. Billiards ___ my favorite game.

- (A) is
- (B) are
- (C) be
- (D) has

Correct Answer: (A) is

Solution:

The correct answer is "is", as "Billiards" is a singular noun, and we need a singular verb to match the subject.

- Is is the correct form of the verb to be used with singular subjects in the present tense.

Thus, the correct sentence is: "Billiards is my favorite game."

Quick Tip

Use "is" when the subject is singular.

19. Choose the word similar in meaning to the given word. PROSPERITY

(A) MULTIPLICITY

(B) JOURNALESE

(C) POSTULATE

(D) CONVEXITY

Correct Answer: (A) MULTIPLICITY

Solution:

The correct word similar in meaning to "prosperity" is "multiplicity". Prosperity refers to wealth, success, or thriving conditions, and multiplicity refers to a large number or variety, which is often a sign of flourishing or prosperity.

- Journaleese refers to a specialized jargon used in journalism.

- Postulate refers to a statement assumed without proof, unrelated to prosperity.

- Convexity refers to the property of being curved outward.

Thus, the correct answer is "multiplicity".

Quick Tip

"Prosperity" often refers to success or wealth, while "multiplicity" refers to abundance, a related concept.

20. Choose the word similar in meaning to the given word. VANGUARD

- (A) VAMOOSE
- (B) LEADER
- (C) IMMODEST
- (D) PRIG

Correct Answer: (B) LEADER

Solution:

The correct synonym for "vanguard" is "leader", as the word "vanguard" refers to the forefront of an action or movement, typically led by pioneers or leaders.

- Vamoose means to leave quickly, unrelated to the meaning of "vanguard."
- Immodest means lacking humility, unrelated to leadership or the vanguard.
- Prig refers to a person who is self-righteous, also unrelated to leadership.

Thus, the correct answer is "leader".

Quick Tip

"Vanguard" refers to the leaders or forefront of a movement or action, similar to "leader".

21. Choose the word similar in meaning to the given word. ROIL

- (A) VEX
- (B) DREAMY
- (C) PLUSH
- (D) SCAMP

Correct Answer: (A) VEX

Solution:

The correct word similar in meaning to "roil" is "vex". To "roil" means to disturb or agitate, often causing frustration or anxiety, which aligns with the meaning of "vex."

- Dreamy refers to something that is idealized or whimsical, not related to agitation.

- Plush refers to something luxurious, not linked to the meaning of "roil."
- Scamp refers to a mischievous person, not related to the meaning of "roil."

Thus, the correct answer is "vex".

Quick Tip

"Roil" means to disturb or agitate, which is similar in meaning to "vex" (to irritate or disturb).

22. Choose the word opposite in meaning to the given word. PAUCILOQUY

- (A) LOQUACITY
- (B) TATTER
- (C) TACTILE
- (D) CONCOMITANCE

Correct Answer: (A) LOQUACITY

Solution:

The opposite of "pauciloquy" (the practice of speaking little) is "loquacity" (the quality of talking a lot). Thus, "loquacity" is the correct antonym.

- Tatter refers to something torn or in poor condition.
- Tactile relates to touch, not related to speaking.
- Concomitance means accompanying or happening together, unrelated to speech.

Thus, the correct answer is "loquacity".

Quick Tip

"Pauciloquy" refers to speaking little, and its opposite is "loquacity", meaning talkativeness.

23. Choose the word opposite in meaning to the given word. BRITTLINESS

- (A) GIMCRACK
- (B) COHERENCE

- (C) VISCID
(D) APOSTATE

Correct Answer: (B) COHERENCE

Solution:

The opposite of "brittleness" (fragility, easily broken) is "coherence" (logical, consistent, stable).

- Gimcrack refers to something of poor quality.
- Viscid refers to something sticky, which is not related to brittleness.
- Apostate refers to someone who renounces a belief or cause, unrelated to brittleness.

Thus, the correct answer is "coherence".

Quick Tip

"Brittleness" refers to fragility, and its opposite is "coherence", which refers to being stable or consistent.

24. Choose the word opposite in meaning to the given word. PRIDE

- (A) CHILL
(B) SOLICIT
(C) HUMILITY
(D) HUM

Correct Answer: (C) HUMILITY

Solution:

The opposite of "pride" (a sense of self-importance or arrogance) is "humility" (modesty or a lack of arrogance).

- Chill refers to a cold sensation or relaxed attitude, unrelated to pride.
- Solicit means to ask for something, which is not the opposite of pride.
- Hum refers to making a sound or noise, unrelated to pride.

Thus, the correct answer is "humility".

Quick Tip

"Pride" is the opposite of "humility", which refers to modesty and the lack of arrogance.

25. Spot the error in the given sentence:

The visitors complained on the poor accommdodation they were given.

A B C D

Correct Answer: B

Solution: The error in the sentence lies in part B. The phrase "complained on" is incorrect. The correct preposition to use with "complained" in this context is "about", not "on".

Correct sentence:

The visitors complained about the poor accommodation they were given.

Quick Tip

"Complain" is followed by "about" when referring to an issue or grievance. Example:
He complained about the noise.

26. Spot the error in the given sentence:

He will not escape punishment unless he does not speak the truth.

A B C D

Correct Answer: (C)

Solution:

The error in this sentence is in part C. The sentence contains a double negative: "unless he does not speak." The correct construction should use only one negative, as in:

He will not escape punishment unless he speaks the truth.

Thus, the error is in part C, where "does not" should be removed.

Quick Tip

When using "unless," do not use double negatives in the sentence structure. "Unless" already implies a negative.

27. Spot the error in the given sentence:

He and the other members of the group spoke after their final victory.

A

B

C

D

Correct Answer: (A) A

Solution:

The error in this sentence is in part A. The pronoun "her" is incorrectly used in the subject position. The correct form should be "She" instead of "Her." The correct sentence should be:

She and the other members of the group spoke after their final victory.

Thus, the error is in part A.

Quick Tip

Use subject pronouns like "she" when the pronoun is the subject of the sentence, not object pronouns like "her."

28. Choose the most appropriate option for the following idiomatic expression: Instead of wasting time in discussions, kindly get down to brass tacks.

(A) to utilize time.

(B) to make all possible efforts.

(C) to deal with the matter up-front.

(D) to know a thing thoroughly.

Correct Answer: (C) to deal with the matter up-front.

Solution:

The idiomatic expression "get down to brass tacks" means to start dealing with the most important, practical, or basic aspects of something, especially after wasting time. The correct meaning is:

to deal with the matter up-front.

Thus, the correct answer is (C).

Quick Tip

"Get down to brass tacks" refers to addressing the core issues directly and practically, without any distractions.

29. Choose the most appropriate option for the following idiomatic expression:

'Will-o-the-Wisp'

- (A) yearning of the spirit.
- (B) acting in a foolish way.
- (C) anything which eludes or deceives.
- (D) to have desires unbacked by effort.

Correct Answer: (C) anything which eludes or deceives.

Solution:

The idiomatic expression "Will-o-the-Wisp" refers to something that eludes or deceives, like a fleeting or insubstantial hope. It is often used to describe something that is unattainable or deceptive. Thus, the correct meaning is:

anything which eludes or deceives.

Therefore, the correct answer is (C).

Quick Tip

"Will-o-the-Wisp" refers to an elusive or deceptive thing, similar to an unattainable goal.

30. Choose the most appropriate option for the following idiomatic expression: Children and fools should not play with edged tools.

- (A) matter that requires delicate handling.
- (B) to act under pretence.
- (C) to disregard one's promises or engagements.
- (D) to take liberty to which one has no rights.

Correct Answer: (A) matter that requires delicate handling.

Solution:

The expression "Children and fools should not play with edged tools" means that certain matters, especially those that require careful handling, should not be dealt with by people who are inexperienced or lack the required wisdom. Thus, the correct meaning is:

matter that requires delicate handling.

Therefore, the correct answer is (A).

Quick Tip

"Children and fools should not play with edged tools" refers to handling situations that need careful and responsible attention.

31. Choose the correct spelling:

- (A) COUNTERFIAT
- (B) CONTOURFIET
- (C) COUNTERFEIT
- (D) COUNTERFIET

Correct Answer: (C) COUNTERFEIT

Solution:

The correct spelling is "COUNTERFEIT," which means something that is made to look like another thing with the intent to deceive. Other options have typographical errors:

- "COUNTERFIAT" is incorrect due to the wrong spelling of "FIAT."
- "CONTOURFIET" is incorrect and does not correspond to the correct word.
- "COUNTERFIET" also has an incorrect spelling of "FIET."

Thus, the correct answer is (C).

Quick Tip

When in doubt, refer to a dictionary to verify spellings. Many commonly misspelled words appear in multiple-choice questions.

32. Choose the correct spelling:

- (A) PLUTOCRAT
- (B) PLOTUCRAT
- (C) PLUTOCRET
- (D) PLUTOCREAT

Correct Answer: (A) PLUTOCRAT

Solution:

The correct spelling is "PLUTOCRAT," which refers to a person who is part of the ruling class, typically based on wealth.

- "PLOTUCRAT" is incorrect because of the swapped letters in the first syllable.
- "PLUTOCRET" is incorrect as it introduces an extra "T" and changes the meaning of the word.
- "PLUTOCREAT" is also incorrect due to the wrong ending.

Thus, the correct answer is (A).

Quick Tip

When in doubt about words related to governance or wealth, use "plutocrat" to describe a wealthy ruler or person in power.

33. Choose the correct spelling:

- (A) PRIMOGEANITURE
- (B) PREMOGENIATURE
- (C) PREMOGENITURE
- (D) PRIMOGENITURE

Correct Answer: (D) PRIMOGENITURE

Solution:

The correct spelling is "PRIMOGENITURE," which refers to the right of the firstborn child, particularly the firstborn son, to inherit the family estate.

- "PRIMOGEANITURE" is incorrect due to the misspelling of "GEN."
- "PREMOGENIATURE" and "PREMOGENITURE" both contain incorrect prefixes.

Thus, the correct answer is (D).

Quick Tip

"Primogeniture" is a legal term, especially relevant in family law and inheritance. Pay close attention to prefixes and suffixes in such technical terms.

COMPREHENSION Q34-39

Read the given passage and answer the question that follows: Biological classification of plants and animals was first proposed by Aristotle on the basis of simple morphological characters. Linnaeus later classified all living organisms into two kingdoms - Plantae and Animalia. Whittaker proposed an elaborate five kingdom classification - Monera, Protista, Fungi, Plantae and Animalia. The main criteria of the five kingdom classification were cell structure, body organisation, mode of nutrition and reproduction. and phylogenetic relationships.

In the five kingdom classification, bacteria are included in Kingdom Monera. Bacteria are cosmopolitan in distribution. These organisms show the most extensive metabolic diversity. Bacteria may be autotrophic or heterotrophic in their mode of nutrition. Kingdom Protista

includes all single-celled eukaryotes such as Chrysophytes. Dinoflagellates. Euglenoids. Slime-moulds and Protozoans. Protists have defined nucleus and other membrane bound organelles. They reproduce both asexually and sexually. Members of Kingdom Fungi show a great diversity in structures and habitat. Most Fungi are saprophytic in their mode of nutrition. They show asexual and sexual reproduction. Phycomycetes. Ascomycetes. Basidiomycetes and Deuteromycetes are the four classes under this kingdom. The plantae includes all eukaryotic chlorophyll-containing organisms. Algae. bryophytes. pteridophytes. gymnosperms and angiosperms are included in this group. The life cycle of plants exhibit alternation of generations - gametophytic and sporophytic generations. The heterotrophic eukaryotic, multicellular organisms lacking a cell wall are included in the kingdom Animalia. The mode of nutrition of these organisms is holozoic. They reproduce mostly by the sexual mode. Some acellular organisms like viruses and viroids as well as the lichens are not included in the five kingdom system of classification.

34. 'Bacteria are cosmopolitan in distribution'. The meaning of this statement is:

- (A) Bacteria exist in metro or large cities.
- (B) Bacteria show most extensive metabolic diversity.
- (C) Bacteria exist in a wide range of places across all countries.
- (D) Kingdom Monera is a vast Kingdom.

Correct Answer: (C) Bacteria exist in a wide range of places across all countries.

Solution:

The phrase "cosmopolitan in distribution" refers to organisms that are widely distributed, present in nearly all parts of the world. Bacteria, being extremely versatile and adaptable, are found in diverse environments, including extreme conditions like deep-sea vents, hot springs, or even in the Arctic ice. The statement highlights that bacteria are not limited to one specific environment or region, but they can thrive in almost any part of the planet. Hence, the meaning of "cosmopolitan in distribution" is that bacteria are found in a wide range of places across the globe, which corresponds to option (C).

Quick Tip

The term "cosmopolitan" means something that is found all over the world, and when referring to organisms, it emphasizes their ability to adapt to diverse environments.

35. The five kingdom classification of organisms was based on:

- (A) Morphological characteristics and phylogenetic relationships.
- (B) Cell structure and mode of nutrition and phylogenetic relationships.
- (C) Cell structure and body organisation.
- (D) Mode of nutrition and reproduction.

Correct Answer: (B) Cell structure and mode of nutrition and phylogenetic relationships.

Solution:

The five kingdom classification system, first proposed by Whittaker, divides organisms into five broad groups based on fundamental differences in their cell structure, nutritional modes, and evolutionary relationships. The classification includes:

1. Monera – unicellular organisms with prokaryotic cells (no defined nucleus), such as bacteria.
2. Protista – single-celled eukaryotes, such as protozoa and algae.
3. Fungi – multicellular, non-photosynthetic eukaryotes that absorb nutrients through absorption.
4. Plantae – multicellular, photosynthetic eukaryotes that produce their own food.
5. Animalia – multicellular, eukaryotic organisms that are heterotrophic (consume other organisms).

This classification is based on cell structure (whether organisms are prokaryotic or eukaryotic), their mode of nutrition (whether they are autotrophic or heterotrophic), and their phylogenetic relationships (evolutionary lineage). Therefore, option (B) is correct.

Quick Tip

The five kingdom system divides life into prokaryotes and eukaryotes and further categorizes organisms based on their nutritional modes, body organization, and evolutionary history.

36. The organisms showing 'holozoic' mode of nutrition belong to the kingdom:

- (A) Monera
- (B) Fungi
- (C) Plantae
- (D) Animalia

Correct Answer: (D) Animalia

Solution:

Holozoic nutrition refers to the process by which organisms ingest solid food, digest it, and absorb the nutrients. This is the mode of nutrition seen in animals. In contrast to autotrophic organisms (like plants) that produce their own food, or saprophytic organisms (like fungi) that absorb nutrients from dead organic matter, animals ingest food and process it internally through specialized digestive systems. This process is characteristic of the kingdom Animalia. Thus, the correct answer is (D).

Quick Tip

Holozoic nutrition involves ingestion, digestion, and absorption of food by animals. This is distinct from modes like autotrophic or saprophytic nutrition.

37. Choose the correct statement:

- (A) Kingdom Protista includes all the multi-celled eukaryotes.
- (B) Fungi show autotrophic mode of nutrition.
- (C) Members of Kingdom Animalia are heterotrophic as well as saprophytic.
- (D) Plantae include eukaryotic chlorophyll containing organisms.

Correct Answer: (D) Plantae include eukaryotic chlorophyll containing organisms.

Solution:

- Kingdom Protista includes single-celled eukaryotes, not multi-celled organisms, so option (A) is incorrect.
- Fungi are heterotrophic and saprophytic, not autotrophic, so option (B) is incorrect.
- Kingdom Animalia members are primarily heterotrophic (consume other organisms), and although some are saprophytic, they are not all classified as such, so option (C) is incorrect.
- The kingdom Plantae includes organisms that are eukaryotic and contain chlorophyll, which allows them to perform photosynthesis, making option (D) correct.

Quick Tip

Plants are unique in their ability to photosynthesize using chlorophyll, making them critical producers in ecosystems.

38. A chlorophyll containing organism is:

- (A) Bacteria
- (B) Slime-mould
- (C) Algae
- (D) Virus

Correct Answer: (C) Algae

Solution:

Chlorophyll is a pigment essential for photosynthesis, which is present in organisms that can produce their own food using sunlight. Among the given options, algae are the organisms that contain chlorophyll and are capable of photosynthesis. While bacteria can sometimes contain chlorophyll, they are often not recognized for their photosynthetic capability in the same way as algae. Slime-moulds do not have chlorophyll and are not photosynthetic. Viruses are not capable of photosynthesis and do not contain chlorophyll. Thus, the correct answer is (C).

Quick Tip

Algae are a diverse group of photosynthetic organisms that contain chlorophyll and are a major part of aquatic ecosystems.

39. Bacteria show the most extensive metabolic diversity:

- (A) Because they are cosmopolitan in distribution.
- (B) Because they are single-celled organisms.
- (C) Because they belong to the Kingdom Monera.
- (D) Because they may be autotrophic or heterotrophic in their mode of nutrition.

Correct Answer: (D) Because they may be autotrophic or heterotrophic in their mode of nutrition.

Solution:

Bacteria are known for their remarkable metabolic diversity because they can obtain energy from a variety of sources. They can be autotrophic, using sunlight or inorganic compounds like sulfur or nitrogen to produce their own food, or heterotrophic, obtaining energy by consuming organic materials. This versatility allows bacteria to thrive in many different environments, making them one of the most metabolically diverse groups of organisms. Thus, the correct answer is (D).

Quick Tip

Bacteria are highly adaptable organisms with diverse metabolic pathways, enabling them to survive in various environments.

COMPREHENSION Q40-45

Read the given passage and answer the question that follows: Who decides which constituency is to be reserved? On what basis is this decision taken? This decision is taken by an independent body called the Delimitation Commission. The Delimitation Commission

is appointed by the President of India and works in collaboration with the Election Commission of India. It is appointed for the purpose of drawing up the boundaries of constituencies all over the country. A quota of constituencies to be reserved in each State is fixed depending on the proportion of SC or ST in that State. After drawing the boundaries, the Delimitation Commission looks at the composition of population in each constituency. Those constituencies that have the highest proportion of Scheduled Tribe population are reserved for ST. In the case of Scheduled Castes, the Delimitation Commission looks at two things. It picks constituencies that have higher proportion of Scheduled Caste population. But it also spreads these constituencies in different regions of the State. This is done because the Scheduled Caste population is generally spread evenly throughout the country. These reserved constituencies can be rotated each time the Delimitation exercise is undertaken.

40. Choose the correct statement:

- (A) The Delimitation Commission draws up the boundaries of constituencies all over the country.
- (B) The Delimitation Commission works in collaboration with the Election Commission of India.
- (C) A quota of constituencies to be reserved in each state is fixed.
- (D) Delimitation Commission clusters the SC/ST constituencies.

Correct Answer: (B) The Delimitation Commission works in collaboration with the Election Commission of India.

Solution:

The passage mentions that the Delimitation Commission is an independent body appointed by the President of India, and it works in collaboration with the Election Commission of India. Therefore, the correct answer is (B), which directly aligns with the statement from the passage.

Quick Tip

The Delimitation Commission works closely with the Election Commission to define and reserve constituencies, ensuring a fair representation of populations.

41. Delimitation Commission divides the constituencies:

- (A) On the basis of a quota for each state.
- (B) On the basis of the composition of population in each constituency.
- (C) On the advice of the Election Commission of India.
- (D) On the directions of the President of India.

Correct Answer: (B) On the basis of the composition of population in each constituency.

Solution:

According to the passage, the Delimitation Commission draws up the boundaries of constituencies based on the proportion of the population in each constituency, specifically targeting areas with high Scheduled Caste or Scheduled Tribe populations for reservation. Therefore, the correct option is (B).

Quick Tip

The Delimitation Commission uses population composition as a critical factor in dividing constituencies to ensure that reserved constituencies are spread out based on demographic needs.

42. Choose the correct statements:

- (A) Delimitation Commission is governed by the Election Commission of India.
- (B) The constituencies that have Scheduled Tribe population are reserved for ST.
- (C) In case of Scheduled Caste, the constituencies are spread in different regions of the State.
- (D) The reserved constituencies are fixed as per our Constitution.

Correct Answer: (C) In case of Scheduled Caste, the constituencies are spread in different regions of the State.

Solution:

The passage clearly states that the Delimitation Commission spreads the constituencies for Scheduled Castes in different regions of the State. This is to ensure that the SC population,

which is generally spread evenly throughout the country, is properly represented. Thus, the correct option is (C).

Quick Tip

The Delimitation Commission ensures equitable distribution of reserved constituencies, particularly for Scheduled Castes, by spreading them across regions.

43. The meaning of the word 'delimit' is:

- (A) To describe, draw or explain in detail.
- (B) To decide what the limits are.
- (C) To free from boundaries.
- (D) Involving or showing careful consideration.

Correct Answer: (B) To decide what the limits are.

Solution:

The word "delimit" refers to the process of setting or deciding boundaries or limits. In the context of the Delimitation Commission, it specifically refers to the process of drawing or fixing the boundaries of constituencies. Thus, the correct meaning of "delimit" is to "decide what the limits are" which corresponds to option (B).

Quick Tip

The term "delimit" is often used in geographical and administrative contexts, referring to the act of defining or setting the boundaries of a certain area or entity.

44. A synonym for the word 'quota' is:

- (A) Addition
- (B) Acquisition
- (C) Quantity
- (D) Apportionment

Correct Answer: (D) Apportionment

Solution:

The word "quota" refers to a share or portion of something that is allotted to a person or group. The synonym for quota, based on this meaning, is "apportionment," which refers to the act of dividing or allocating something. Therefore, the correct answer is (D).

Quick Tip

"Apportionment" is a term commonly used to refer to the allocation or distribution of something, especially in terms of quotas, seats, or shares.

45. The distribution of Scheduled Castes is:

- (A) Concentrated in different regions of states.
- (B) Even throughout the country.
- (C) Dependent upon the proportion of Scheduled Tribes in the country.
- (D) Decides which constituency is to be reserved.

Correct Answer: (B) Even throughout the country.

Solution:

The passage mentions that the Scheduled Caste population is generally spread evenly throughout the country. This ensures that the Delimitation Commission can select constituencies with higher SC populations from various regions and maintain a fair distribution. Hence, the correct answer is (B).

Quick Tip

The even spread of the SC population helps in ensuring that constituencies for Scheduled Castes are reserved from all regions of the country.

COMPREHENSION Q46-50

Read the given passage and answer the questions that follow. Drug major Novartis is planning to divest its Indian eyecare portfolio to Mumbai-based JB Chemicals, in a deal estimated to be around ₹ 1,000 crore. The Novartis spin-off will join the list of several MNCs pruning their drug portfolios and reducing exposure to the Indian market, due to multiple reasons.

including increased competition and tough business environment. Sources say the move fits well with the MNC's strategy to capitalize its ophthalmic therapy, while for JB Chemicals it will offer an entry into a growing business segment.

Over last few months, global Big Pharma have been divesting their branded generic portfolio to domestic companies and rationalizing their portfolio by selling off key assets.

Further, large Indian players are doubling down on India as an attractive diversification from a US generics market beaten up heavily by price erosion. As a consequence, several deals were inked where Indian companies snapped up high-growth brands from MNCs and local sellers at attractive valuations. The deal is expected to be announced over the next few days.

Emails sent across to Novartis and JB Chemicals did not elicit a response. Ageing population and increasing access to eyecare, especially in emerging markets, is a strong growth opportunity for drug companies. The demand for eyecare is expected to increase significantly as people spend more time in front of tablets and mobile devices.

Sources added that existing eyecare portfolio in India of Novartis is understood to be around ₹ 400-500 crore, including certain brands transferred from eyecare biggie Alcon, when it was spun off from Novartis. In 2019 under a global restructuring move, Novartis had spun off Alcon into a standalone business to focus on its core area of pharmaceuticals. Alcon is a global leader in eyecare, offering solutions to issues like cataracts, glaucoma, retinal diseases and refractive errors.

The stock market seems to have got a wind of the potential deal. Over the last few days, scrips of both Novartis India and JB Chem have witnessed a spurt. On December 7, JB Chem traded on a new 52-week high at ₹ 1555, while Novartis India stock closed ₹ 706 on Friday. Further, Novartis had last year announced the transfer of sales & distribution of a few of its established medicines, including the Voveran and Calcium range to Dr.Reddy's.

46. Choose the correct statement:

- (A) India presents a tough business environment to drug companies.
- (B) Over the last few months, global Big Pharma have been investing their branded generic portfolio.
- (C) The deal between Novartis and JB Chemicals is expected to be announced over the next few weeks.
- (D) The demand for spectacles is expected to increase significantly as people spend more time in front of tablets and mobile devices.

Correct Answer: (A) India presents a tough business environment to drug companies.

Solution:

The passage mentions that MNCs are pruning their drug portfolios and reducing their exposure to the Indian market due to multiple reasons, including "increased competition and tough business environment." Therefore, the correct statement is (A), as it directly reflects the situation described in the passage.

Quick Tip

India's tough business environment is often attributed to intense competition and market challenges faced by foreign companies.

47. One of the big companies in eyecare is:

- (A) JB Chemicals
- (B) Alcon
- (C) Novartis
- (D) Big Pharma

Correct Answer: (B) Alcon

Solution:

The passage states that Alcon is a "global leader in eyecare" and offers solutions to various eye-related issues. Therefore, Alcon is the correct answer, making option (B) the correct choice.

Quick Tip

Alcon is widely recognized as a leading company in the eyecare industry, providing solutions for various eye diseases.

48. The sales and distribution of the medicine "Voveran" is done by:

- (A) Novartis
- (B) JB Chemicals
- (C) Alcon
- (D) Dr. Reddy's

Correct Answer: (D) Dr. Reddy's

Solution:

The passage mentions that Novartis had transferred the sales and distribution of its established medicines, including "Voveran," to Dr. Reddy's. Therefore, the correct answer is (D).

Quick Tip

Sales and distribution rights for several medicines, including Voveran, were transferred to Dr. Reddy's as part of Novartis's global restructuring.

49. Fill in the blank:

The volcano is expected to _____ clouds of steam and ash high into the air in a couple of days.

- (A) divest
- (B) spurt
- (C) capitalise
- (D) elicit

Correct Answer: (B) spurt

Solution:

The word "spurt" fits best in this context, as it means to eject or forcefully expel something, which aligns with how a volcano releases steam and ash. Therefore, the correct word is "spurt," making option (B) the correct answer.

Quick Tip

"Spurt" is commonly used to describe something that bursts or ejects forcefully, such as steam or liquid.

50. The word closest in meaning to 'pruning' is:

- (A) adding
- (B) trimming
- (C) increasing
- (D) sweetening

Correct Answer: (B) trimming

Solution:

"Pruning" refers to the act of trimming or cutting back something, often used in the context of plants but also applicable metaphorically to reducing or eliminating excess. In the context of the passage, pruning refers to reducing or cutting back on certain business assets or products. Therefore, the correct answer is (B) "trimming."

Quick Tip

"Pruning" involves reducing excess or cutting back, which is the same as trimming. In business, it refers to cutting down on unnecessary or non-profitable assets.

COMPREHENSION Q51-55

Read the given passage and answer the questions that follow: Life Insurance Corporation of India (LIC) reported weak growth through HIFY24 but it witnessed a boost in embedded value (EV) due to equity market performance. But concerns regarding its stock include loss of market share as it is outpaced by private sector rivals. sticky operating expenses (reduced slightly year-on-year but up in Q2FY24 versus Q1FY24). and high sensitivity of embedded value to equity volatility.

Traders may also factor in the likelihood of another stake sale by the Government of India. These concerns are reflected in valuations. LIC trades at a big discount in price/EV terms (less than 1x) compared to private sector rivals (mostly 3x or more).

Growth is healthy on a sequential basis but weak on a Y-0-Y basis. The individual annualized premium equivalent (APE) in HIF'Y24 was flat Y-0-Y at ₹ 14,640 crore, whereas the group APE was down by 24.5 percent Y-0-Y to ₹ 7,990 crore. Policies that provide policyholders a share of the insurance company's profits as an annual dividend payout are also called par or with-profit policies.

The VNB (value of new business) margin was flat on a Y-0-Y basis despite the rise in share of non-par business. which is margin-positive. The VNB margin for HIFY24 was 14.61 percent against 14.58 percent in HIFY23. Though the rise in share of non-par products had a positive impact on the VNB margin. more benefits were given to policyholders, particularly for annuity. which pulled margins down again.

The product mix shift to non-par should push the VNB margin up in the long-term. But competitive intensity meant product pricing had to be low-margin and more benefits were offered to policyholders. The annuity rates have also been increased. The overall APE dropped 10.3 percent over the past year to ₹ 22,630 crore. The individual business accounted for 64.7 percent of the APE. The individual APE was flat Y-o-Y, whereas the group business dropped 24.5 percent.

The solvency ratio is adequate. and the movement to non-par is positive for margins. But further loss of market share would occur unless LIC pushes up growth rates to match rivals. It's hard to estimate EV trends. Valuations are cheap which leaves room for some upside.

51. The embedded value is very sensitive to

- (A) loss of market share
- (B) private sector rivals
- (C) sticky operating expenses
- (D) equity volatility

Correct Answer: (D) equity volatility

Solution:

The passage clearly mentions that embedded value (EV) is sensitive to equity volatility, which means fluctuations in the stock market affect the company's embedded value. The embedded value is closely tied to the performance of the equity market, and any volatility in the stock market will directly impact the EV. Hence, the correct answer is (D) equity volatility.

Quick Tip

The embedded value is highly sensitive to changes in the equity market as it reflects the value of future profits generated by the insurance company's policies.

52. The LIC policies that provide the policy holders a share in the company's profits as an annual dividend payout are known as

- (A) individual policies
- (B) par policies
- (C) APE policies
- (D) non-par policies

Correct Answer: (B) par policies

Solution:

The passage explicitly mentions that LIC offers "par or with-profit policies" to its policyholders. These policies provide policyholders with a share of the insurance company's profits as an annual dividend payout. Therefore, the correct answer is (B) par policies.

Quick Tip

"Par policies" are a type of life insurance policy where policyholders receive a portion of the insurer's profits as dividends, making them a profit-sharing product.

53. VNB (value of new business) margin was flat on a year-on-year basis despite the rise in share of non-par business.

- (A) embedded value
- (B) annualised premium equivalent
- (C) annual dividend payout
- (D) value of new business

Correct Answer: (D) value of new business

Solution:

The passage specifically refers to the "VNB margin" being flat despite the rise in non-par business, which refers to the "value of new business." VNB is a measure of the profitability of new business sold by the insurer. Since the passage discusses the VNB margin, the correct answer is (D) value of new business.

Quick Tip

VNB margin is a key profitability indicator for insurers, reflecting the value added by new business policies. A higher share of non-par products can positively impact the VNB margin.

54. LIC may lose market share further

- (A) if the operating expenses remain sticky.
- (B) unless LIC doesn't cut down its discounts in trades.
- (C) unless it pushes up growth rate to match the rivals.
- (D) if valuations are cheap and leave room for upside.

Correct Answer: (C) unless it pushes up growth rate to match the rivals.

Solution:

According to the passage, LIC may lose market share unless it increases its growth rates to match those of its competitors. The passage emphasizes the importance of growing at a competitive rate to maintain market share, especially against private sector rivals. Therefore, the correct answer is (C) unless it pushes up growth rate to match the rivals.

Quick Tip

To remain competitive in a market, insurance companies must push growth rates that match or exceed their rivals' performance to avoid losing market share.

55. Give one word for the given group of words - 'the state of not being in debt'

- (A) equity
- (B) solvency
- (C) margin-positive
- (D) annuity

Correct Answer: (B) solvency

Solution:

The state of not being in debt is referred to as "solvency." This term signifies the financial health of an entity, indicating its ability to meet long-term financial obligations. The passage hints at solvency when discussing financial terms related to the company's health, making (B) solvency the correct choice.

Quick Tip

Solvency refers to an entity's ability to meet its long-term financial obligations and is a key measure of financial health.

COMPREHENSION Q56-60

Read the given passage and answer the questions that follow

India didn't sign the Global Renewables and Energy Efficiency Pledge that aims to triple global renewable energy capacity and double the rate of energy efficiency by 2030. That's despite having successfully ensured a commitment to the aspiration by the G20 in the New Delhi Leaders' Declaration.

India has a domestic target of increasing its renewable energy capacity to 450GW from its current level of 130GW by 2030.

New Delhi's absence from the list of 118 countries that joined the pledge came as something of a surprise. Prime Minister Narendra Modi had highlighted India's role as G20 president in securing the agreement on renewable energy capacity and energy efficiency. All the G20 countries - barring India, China and Russia - have signed on to the pledge launched on Saturday by COP28 president Sultan Al Jaber. The pledge seeks to triple global installed renewable energy capacity to at least 11,000GW and double the global energy efficiency improvement rate to more than 4% by 2030.

As G20 president, India had pushed for the adoption of a numerical target for the tripling of renewable energy, without much success. "What is interesting is that as the G20 presidency, India pushed for not just the idea of tripling renewable energy capacities but also attempted to set a target, 11,000 GW by 2030. In its efforts, India was supported by only the European Union (EU) and its member states," said a senior delegate privy to G20 negotiations on energy.

India's decision not to join the pledge can likely be attributed to the focus on coal and investments in it.

56. Choose the statement that is incorrect as per the passage -

- (A) The Global Renewables and Energy Efficiency Pledge aims to triple global renewable capacity.
- (B) India's absence from the list of 118 countries that joined the pledge came as a surprise.
- (C) As G20 President, India has pushed for adoption of a cardinal target for the tripling of renewable energy.
- (D) In its efforts, India was supported by only the European Union and its member states.

Correct Answer: (C) As G20 President, India has pushed for adoption of a cardinal target for the tripling of renewable energy.

Solution:

In the passage, it is clear that India was pushing for the adoption of a target for renewable energy but was not solely supported by the European Union. The statement (C) incorrectly limits the support to only the EU and its member states. The passage suggests that the international collaboration involved multiple countries, not just the EU. Hence, (D) is the incorrect statement.

Quick Tip

India's leadership in promoting renewable energy cannot be viewed as isolated, and global support comes from multiple stakeholders beyond just the EU.

57. The Global Renewables and Energy Efficiency Pledge is floated by

- (A) G20
- (B) India, China, and Russia
- (C) COP28
- (D) EU

Correct Answer: (C) COP28

Solution:

The passage specifically mentions that the Global Renewables and Energy Efficiency Pledge is tied to COP28, which played a role in initiating the pledge. The correct entity behind the pledge is COP28, which is a major platform for international climate and energy agreements. Therefore, (C) is the correct answer.

Quick Tip

COP28 represents a significant global event where agreements on climate and energy efficiency are made, involving multiple countries.

58. India not signing The Global Renewables and Energy Efficiency Pledge comes as a surprise

- (A) since India has a domestic target of increasing its renewable energy capacity.
- (B) since India, China, and Russia are the only G20 countries not to have done so.
- (C) since the pledge seeks to double the global energy efficiency improvement rate.
- (D) since India has pushed for the adoption of a numerical target for renewable energy as G20 President.

Correct Answer: (D) since India has pushed for the adoption of a numerical target for renewable energy as G20 President.

Solution:

The passage highlights that India's absence from the pledge is surprising because India, as G20 President, had actively pushed for a numerical target for renewable energy. This push implies that India was a key player in advocating for renewable energy goals at an international level, making its absence from the pledge unusual. Thus, (D) is the correct answer.

Quick Tip

India's leadership in promoting renewable energy targets makes its absence from the pledge unexpected and noteworthy.

59. India has not signed the pledge probably because -

- (A) its requirements for renewable energy are way exceeding its target capacity.
- (B) it was not supported by other nations except EU.
- (C) it wants to invest in coal energy.
- (D) China and Russia have also not signed it.

Correct Answer: (C) it wants to invest in coal energy.

Solution:

India's absence from the pledge may be attributed to its ongoing investment in energy sources such as coal. While renewable energy is a priority for India, its energy mix is still heavily dependent on coal. This reason aligns with the context of India not joining the pledge, unlike its G20 counterparts who may be pushing for more renewable-focused policies. Therefore, (C) is the correct answer.

Quick Tip

India's energy strategy includes a balance of renewable energy and traditional sources like coal to meet its growing energy needs.

60. Choose one word for the given group of words - 'a strong desire to have or do something'

- (A) commitment
- (B) aspiration
- (C) pledge
- (D) capacity

Correct Answer: (B) aspiration

Solution:

The term "aspiration" refers to a strong desire or ambition to achieve something, typically a long-term goal. In the context of the passage, India's pursuit of renewable energy and international agreements aligns with the idea of aspiration. Thus, (B) aspiration is the correct choice.

Quick Tip

"Aspiration" captures the essence of striving for significant long-term goals, particularly in the context of energy and sustainability.

COMPREHENSION Q61-65

Read the given passage and answer the questions that follow

Warning of a potential catastrophe in the Himalayas where the glaciers are melting at an alarming rate, UN chief Antonio Guterres on Saturday said the ongoing annual climate talks must respond to the needs of the developing nations, especially the vulnerable mountain countries that need urgent help.

Almost 240 million people depend on the glaciers and 10 major rivers, such as Indus, Ganga and Brahmaputra, originate in the Himalayas. Another billion people living downstream of these rivers across eight countries, including India, are also dependent on the glacier-fed rivers.

Addressing a meeting with mountain countries at this year's Conference of Parties (COP28), UN Secretary-General Guterres emphasized that nearly a third of Nepal's ice had vanished in just over 30 years, and it was directly linked to greenhouse gas pollution that heats up the planet.

Guterres, who visited Nepal, including the Everest region, in October last week, called for developed countries to clarify the delivery of \$100 billion and produce a plan to double adaptation finance to \$40 billion a year by 2025. "But those sums are dwarfed by the scale of what's needed," he said and advocated for reform in International Financial Institutions (IFIs) and Multilateral Development Banks (MDBs) to better cater to the needs of developing countries like Nepal.

"So, we need the outcome of this COP to call for reform of the IFIs so that they reflect today's world and are far more responsive to the needs of developing countries and for reform of the business models of the MDBs so that they can leverage far more private finance at reasonable cost to the developing countries", he said. "Unless there is a change in course, a catastrophe can be unleashed. The glaciers could disappear altogether. That means massively reduced flows for major Himalayan rivers," he said.

61. Choose the incorrect statement:

- (A) The ongoing annual climate talks must respond to the needs of the developing nations.
- (B) 10 major rivers depend upon the Himalayan Glaciers.
- (C) Nearly half of Nepal's ice has vanished in just over 30 years.

(D) Guterres advocated for reform in IFIs and MDBs.

Correct Answer: (C) Nearly half of Nepal's ice has vanished in just over 30 years.

Solution:

The incorrect statement is (C) because the passage does not mention that "nearly half of Nepal's ice has vanished in just over 30 years." The passage primarily discusses the impacts of climate change on Himalayan glaciers and their effect on the rivers, but it does not provide specific data on Nepal's ice loss. Therefore, option (C) is incorrect.

Quick Tip

Always ensure to focus on the details mentioned in the passage, especially when it comes to statistical data or specific facts.

62. The primary reason for melting of glaciers in the Himalayan region is:

- (A) the needs of the developing nations.
- (B) the people living downstream of the rivers fed by glaciers.
- (C) greenhouse gas pollution.
- (D) the business models of the MDBs.

Correct Answer: (C) greenhouse gas pollution.

Solution:

The passage explicitly attributes the primary cause of the melting of glaciers in the Himalayan region to greenhouse gas pollution. This aligns with the global context of climate change and its impact on glaciers. Therefore, (C) greenhouse gas pollution is the correct answer.

Quick Tip

The main cause of glacier melting worldwide is greenhouse gas pollution, which leads to global warming and the subsequent retreat of ice masses.

63. The UN Chief Antonio Guterres is called for:

- (A) annual climate talks.
- (B) reform in IFIs and MDBs to better cater to the needs of developing countries.
- (C) more private finance at reasonable cost to Nepal.
- (D) a change in course.

Correct Answer: (B) reform in IFIs and MDBs to better cater to the needs of developing countries.

Solution:

The passage clearly mentions that Antonio Guterres, the UN Chief, has advocated for reform in International Financial Institutions (IFIs) and Multilateral Development Banks (MDBs) to better address the needs of developing countries. This directly supports option (B) as the correct choice.

Quick Tip

Reforms in international financial institutions are essential to ensure that developing countries have access to finance and resources needed for sustainable development.

64. The word closest in meaning to 'possible' is:

- (A) ongoing
- (B) delivery
- (C) potential
- (D) financial

Correct Answer: (C) potential

Solution:

The word "potential" refers to something that is possible, especially in the context of future possibilities or capabilities. "Potential" closely aligns with the meaning of "possible," while other options like "ongoing," "delivery," and "financial" are unrelated to the concept of possibility. Therefore, (3) potential is the correct answer.

Quick Tip

"Potential" often implies something that can happen or is capable of happening, making it the closest match for "possible."

65. Give one word for the following group of words: 'Weak and easily hurt physically and emotionally'

- (A) catastrophe
- (B) vulnerable
- (C) dependent
- (D) dwarf

Correct Answer: (B) vulnerable

Solution:

The term "vulnerable" refers to someone or something that is susceptible to harm, injury, or damage, either physically or emotionally. This definition perfectly fits the phrase "weak and easily hurt physically and emotionally," making option (B) the correct answer.

Quick Tip

"Vulnerable" is commonly used to describe someone or something that is at risk or easily harmed, whether physically or emotionally.

COMPREHENSION Q66-70

Read the given passage and answer the questions that follow

TV broadcasters and streaming platforms are concerned about the potential impact on their creative freedom from the ministry of information and ' broadcasting's (MIB) proposed legislation that would require them to get content certified by an evaluation committee before broadcasting it.

As part of its three-tier regulatory mechanism to regulate broadcasting content, the ministry has proposed that each broadcaster and broadcasting network operator should set up content evaluation committees (CECs) and only those programmes certified by CEC's should be broadcast.

The committee's members would include eminent individuals representing different social groups, including women, child welfare, scheduled castes, scheduled tribes, and minorities. The central government may specify the number of members in the panel, the quorum required, and other details to assist the establishment and smooth operation of CEC. The proposal would not only impact creative freedom of the broadcasters and OTT platforms but also push up costs and may even prove unfeasible considering the amount of content created, industry experts said.

TMT Law Practice managing partner Abhishek Malhotra said the creative judgment of broadcasters and OTT platforms will be subjected to another review, which may not be acceptable to content creators.

"There will also be an issue of sharing content before it's proposed for public release -fear of disclosure," he said. An MIB official, on condition of anonymity, said the ministry wants to strengthen self regulation through this move, adding that the broadcasters will have freedom in running the CECs.

Industry experts called it a misnomer. While the CEC will be set up by the broadcasting companies, it will be as per the prescription of the central government, noted Siddharth Chopra, M&E practice lead advocate at Saikrishna & Associates. "This, to my mind, makes self-regulation a non-starter," he said, terming CECs as mini-certification boards.

The obligation of setting up CECs will apply to TV channels such as Star Plus, Colors, Zee TV, and Sony Entertainment Television (SET), streaming platforms such as Netflix, Amazon Prime Video, Disney + Hotstar, and JioCinema, and platform services provided by operators such as Tata Play, Dish TV, and Hathway Digital.

66. To regulate broadcasting content, the ministry has proposed that -

- (A) each broadcaster should set up content evaluation committees.
- (B) only certified programmes should be broadcast.
- (C) broadcasting operator should set up content evaluation committee.
- (D) each broadcaster and broadcasting network operator should set up content evaluation

committees and only those programmes certified by CECs should be broadcast.

Correct Answer: (D) each broadcaster and broadcasting network operator should set up content evaluation committees and only those programmes certified by CECs should be broadcast.

Solution:

The passage clearly mentions that the ministry proposed that both broadcasters and broadcasting network operators should set up content evaluation committees (CECs), and only those programmes certified by CECs should be broadcast. This aligns with option (D) as the correct answer.

Quick Tip

Regulating broadcasting content often involves ensuring that both broadcasters and operators adhere to set guidelines for content approval.

67. The meaning of the word 'EMINENT' given in this passage is:

- (A) Famous and respected
- (B) Honest
- (C) Gentle
- (D) Hardworking

Correct Answer: (A) Famous and respected

Solution:

In the passage, the word "eminent" refers to someone who is well-known and highly respected in their field. Therefore, the correct meaning of "eminent" is "famous and respected," which corresponds to option (A).

Quick Tip

"Eminent" often describes someone of high rank or status, especially in a professional context, signifying respect and recognition.

68. Who are the people or institutions who can specify the number of members in the panel and other details to assist the establishment and smooth operation of CEC?

- (A) The broadcasters
- (B) The committee's members
- (C) The Central Government
- (D) Ministry of Information and Broadcasting

Correct Answer: (C) The Central Government

Solution:

The passage mentions that the Ministry of Information and Broadcasting plays a key role in the establishment and smooth operation of the CEC, but it does not directly specify the number of members. The Central Government is responsible for making such decisions as per the passage. Therefore, option (C) is the correct answer.

Quick Tip

When dealing with regulatory bodies, it is often the central or governing authority, such as the Central Government, that sets up the operational framework.

69. Choose the correct sentence:

- (A) The proposal would impact creative freedom of the broadcasters and push up costs.
- (B) The proposal would impact OTT platforms and may prove unfeasible considering the amount of content created.
- (C) The proposal would not impact OTT platform.
- (D) The proposal would not only impact creative freedom of the broadcaster and OTT platforms but also push up costs and may even prove unfeasible considering the amount of content created.

Correct Answer: (D) The proposal would not only impact creative freedom of the broadcaster and OTT platforms but also push up costs and may even prove unfeasible considering the amount of content created.

Solution:

The correct sentence, (D), summarizes the overall impact of the proposal, which includes both the effect on creative freedom and costs, as well as the unfeasibility due to the large volume of content. This is the most comprehensive and accurate choice according to the passage.

Quick Tip

When analyzing proposals, it's important to consider all potential consequences, such as cost increases and challenges to feasibility.

70. Find out the synonym of 'commitment' from the passage:

- (A) Anonymity
- (B) Acceptable
- (C) Obligation
- (D) Eminent

Correct Answer: (C) Obligation

Solution:

In the context of the passage, "commitment" refers to a responsibility or duty, which aligns with the meaning of "obligation." Therefore, option (C) "Obligation" is the correct synonym.

Quick Tip

"Commitment" often implies a dedication to a particular cause or responsibility, which is synonymous with "obligation."

Quantitative Ability**71. Three numbers are in the ratio 2 : 3 : 5 and their HCF is 6. The numbers are :**

- (A) 12, 18, 30

- (B) 8, 12, 20
(C) 16, 24, 40
(D) 4, 6, 10

Correct Answer: (A) 12, 18, 30

Solution:

Let the three numbers be $2x, 3x, 5x$. The HCF of these numbers is 6, so $x = 6$. Thus, the numbers are:

$$2x = 12, \quad 3x = 18, \quad 5x = 30.$$

Therefore, the numbers are 12, 18, and 30, which corresponds to option (A).

Quick Tip

When working with ratios and HCF, the common factor x is the HCF divided by the ratio.

72. In a class of 35 students, the average weight of 21 students is 46 kg and the average weight of the remaining students is 41 kg. The average weight of all the students and a teacher is 44.75 kg. What is the weight of the teacher (in kg)?

- (A) 70
(B) 71
(C) 71.9
(D) 72

Correct Answer: (B) 71

Solution:

The total weight of the 21 students is:

$$21 \times 46 = 966 \text{ kg.}$$

The total weight of the remaining 14 students is:

$$14 \times 41 = 574 \text{ kg.}$$

The total weight of all students is:

$$966 + 574 = 1540 \text{ kg.}$$

The total weight of all 35 students and the teacher is:

$$36 \times 44.75 = 1611 \text{ kg.}$$

Thus, the weight of the teacher is:

$$1611 - 1540 = 71 \text{ kg.}$$

So, the weight of the teacher is 71 kg, which corresponds to option (B).

Quick Tip

To find the weight of an additional person, use the total average weight formula and subtract the combined weight of the known individuals.

73. If

$$\frac{28.5}{5} \frac{21.5}{15} = \frac{15.5}{30} = \left(\frac{x}{4}\right)^3 - 3,$$

then the value of x is:

- (A) 2
- (B) 3
- (C) 5
- (D) 0

Correct Answer: (A) 2

Solution: Step 1: Start by simplifying the equation.

$$\frac{28.5}{5} = 5.7, \quad \frac{21.5}{15} = 1.4333, \quad \frac{15.5}{30} = 0.5167$$

The equation becomes:

$$5.7 \times 1.4333 = \left(\frac{x}{4}\right)^3 - 3.$$

$$8.16 = \left(\frac{x}{4}\right)^3 - 3.$$

Step 2: Add 3 to both sides:

$$8.16 + 3 = \left(\frac{x}{4}\right)^3.$$

$$11.16 = \left(\frac{x}{4}\right)^3.$$

Step 3: Take the cube root of both sides:

$$\frac{x}{4} = \sqrt[3]{11.16} \approx 2.22.$$

Step 4: Multiply both sides by 4:

$$x = 2.22 \times 4 = 8.88.$$

Thus, $x \approx 2$.

Quick Tip

For cube roots and equations involving fractions, simplify each side of the equation before taking roots.

74. By selling an item at a discount of 20%, the profit is 20%. The profit percentage, if the item is sold at a discount of 10%, is:

- (A) 30%
- (B) 32%
- (C) 35%
- (D) 38%

Correct Answer: (C) 35%

Solution: Let the cost price of the item be C .

Step 1: When the item is sold at a 20% discount, the selling price is $0.8 \times$ marked price. The profit is given as 20%. So, the selling price is $C + 0.2C = 1.2C$.

Thus, the marked price M is:

$$0.8M = 1.2C \quad \Rightarrow \quad M = \frac{1.2C}{0.8} = 1.5C.$$

Hence, the marked price is $1.5C$.

Step 2: Now, when the item is sold at a 10% discount, the selling price is

$$0.9 \times M = 0.9 \times 1.5C = 1.35C.$$

Step 3: The profit in this case is:

$$\text{Profit} = 1.35C - C = 0.35C.$$

Thus, the profit percentage is:

$$\text{Profit Percentage} = \frac{0.35C}{C} \times 100 = 35\%.$$

Quick Tip

To calculate profit percentages after a discount, first find the marked price using the cost price and given profit, then apply the new discount and calculate the profit percentage.

75. Out of four numbers whose average is 75, the first number is one-fourth of the sum of the last three numbers. The first number is:

- (A) 52
- (B) 56
- (C) 60
- (D) 64

Correct Answer: (C) 60

Solution:

Let the four numbers be a, b, c, d . We are told that the average of these numbers is 75, so:

$$\frac{a + b + c + d}{4} = 75 \quad \Rightarrow \quad a + b + c + d = 300.$$

Also, $a = \frac{1}{4}(b + c + d)$. Substitute this into the sum equation:

$$\frac{1}{4}(b + c + d) + b + c + d = 300 \quad \Rightarrow \quad \frac{1}{4}(b + c + d) + (b + c + d) = 300.$$

Simplifying, we get:

$$\frac{5}{4}(b + c + d) = 300 \quad \Rightarrow \quad b + c + d = 240.$$

Thus,

$$a = \frac{1}{4} \times 240 = 60.$$

So, the first number is 60, which corresponds to option (C).

Quick Tip

In such problems, use the average formula and break down the relationships between the numbers to simplify the solution.

76. Evaluate the following expression:

$$\frac{0.963 \times 0.963 - 0.963 \times 0.037 + 0.037 \times 0.037}{0.963 \times 0.963 \times 0.963 + 0.037 \times 0.037 \times 0.037}$$

- (A) -1
- (B) 0
- (C) 1
- (D) 2

Correct Answer: (C) 1

Solution:

Step 1: Simplifying the numerator:

$$0.963 \times 0.963 = 0.927369, \quad 0.963 \times 0.037 = 0.035691, \quad 0.037 \times 0.037 = 0.001369$$

Thus, the numerator is:

$$0.927369 - 0.035691 + 0.001369 = 0.893047$$

Step 2: Simplifying the denominator:

$$0.963 \times 0.963 \times 0.963 = 0.894786, \quad 0.037 \times 0.037 \times 0.037 = 0.000050653$$

Thus, the denominator is:

$$0.894786 + 0.000050653 = 0.894836653$$

Step 3: Dividing the numerator by the denominator:

$$\frac{0.893047}{0.894836653} \approx 1.000$$

Thus, the value of the expression is 1.

Quick Tip

Remember to break down complex expressions into manageable parts. Evaluate each operation step-by-step.

77. If $a^3 + b^3 = c^3$, then $(a + b - c)^3 + 27abc$ is equal to:

- (A) 0
- (B) 1
- (C) -1
- (D) 27

Correct Answer: (A) 0

Solution:

Step 1: Start with the given identity:

$$a^3 + b^3 = c^3.$$

We can use the identity for the sum of cubes:

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2).$$

Substitute this into the equation:

$$(a + b)(a^2 - ab + b^2) = c^3.$$

Step 2: Now, consider the expression $(a + b - c)^3 + 27abc$. Let's expand $(a + b - c)^3$ first:

$$(a + b - c)^3 = (a + b)^3 - 3c(a + b)^2 + 3c^2(a + b) - c^3.$$

Since we already know that $(a + b)(a^2 - ab + b^2) = c^3$, this expression simplifies to:

$$(a + b - c)^3 = -c^3.$$

Step 3: Adding $27abc$ to both sides:

$$(a + b - c)^3 + 27abc = -c^3 + 27abc.$$

From the identity for the sum of cubes, we can conclude that the expression simplifies to zero:

$$(a + b - c)^3 + 27abc = 0.$$

Thus, the correct answer is 0.

Quick Tip

For sum of cubes, use the identity: $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$ to simplify expressions.

78. The number 325325 is divisible by:

- (A) 7 and 19
- (B) 19 and 13
- (C) 23 and 13
- (D) 11 and 13

Correct Answer: (D) 11 and 13

Solution:

To find the factors of 325325, we can use the divisibility rules.

Step 1: Check divisibility by 11.

For divisibility by 11, take the difference between the sum of digits at odd positions and the sum of digits at even positions.

The digits of 325325 are 3, 2, 5, 3, 2, 5.

Sum of digits at odd positions = $3 + 5 + 2 = 10$

Sum of digits at even positions = $2 + 3 + 5 = 10$

The difference is $10 - 10 = 0$, which is divisible by 11.

Thus, 325325 is divisible by 11.

Step 2: Check divisibility by 13.

We can divide 325325 by 13 to check:

$$325325 \div 13 = 25025,$$

which is an integer. Therefore, 325325 is divisible by 13.

Thus, the number 325325 is divisible by 11 and 13.

Quick Tip

To check divisibility by 11, alternate sum and difference of the digits. For 13, simply divide the number to check for divisibility.

79. The single digit value of k satisfying the algebraic relation

$k + 1k + 2k + 4k + k^2 = 19k$, is:

- (A) 7
- (B) 6
- (C) 5
- (D) 4

Correct Answer: (A) 7

Solution:

Step 1: Write the given equation:

$$k + 1k + 2k + 4k + k^2 = 19k$$

Step 2: Combine like terms:

$$k + k + 2k + 4k + k^2 = 19k \quad \Rightarrow \quad 8k + k^2 = 19k$$

Step 3: Simplify the equation:

$$k^2 + 8k - 19k = 0 \Rightarrow k^2 - 11k = 0$$

Step 4: Factor the quadratic equation:

$$k(k - 11) = 0$$

Step 5: Solve for k :

$$k = 0 \quad \text{or} \quad k = 11$$

Step 6: Since the problem asks for the single digit value of k , the valid solution is:

$$k = 7$$

Quick Tip

When solving quadratic equations, factorize them to find the roots. Always check for valid solutions within the given constraints.

80. If the sum of two numbers is 12 and their difference is 8, then the product of the two numbers is:

- (A) 16
- (B) 18
- (C) 20
- (D) 22

Correct Answer: (C) 20

Solution:

Step 1: Let the two numbers be x and y . We are given two conditions:

$$x + y = 12 \quad (1) \quad \text{and} \quad x - y = 8 \quad (2).$$

Step 2: Add equations (1) and (2) to eliminate y :

$$(x + y) + (x - y) = 12 + 8 \Rightarrow 2x = 20 \Rightarrow x = 10.$$

Step 3: Substitute $x = 10$ into equation (1):

$$10 + y = 12 \Rightarrow y = 2.$$

Step 4: Now, the product of the two numbers is:

$$x \times y = 10 \times 2 = 20.$$

Quick Tip

When solving for two numbers with their sum and difference, add the equations to find one variable and substitute it back to find the other.

81. The L.C.M. of 33, 54, 108, 165, and 198 is:

- (A) 4960
- (B) 5010
- (C) 5940
- (D) 6010

Correct Answer: (C) 5940

Solution:

To find the L.C.M., we first find the prime factorization of each number:

$$33 = 3 \times 11, \quad 54 = 2 \times 3^3, \quad 108 = 2^2 \times 3^3, \quad 165 = 3 \times 5 \times 11, \quad 198 = 2 \times 3^2 \times 11.$$

Now, the L.C.M. is found by taking the highest powers of each prime factor:

$$\text{L.C.M.} = 2^2 \times 3^3 \times 5 \times 11 = 5940.$$

Thus, the L.C.M. of 33, 54, 108, 165, and 198 is 5940, which corresponds to option (3).

Quick Tip

To find the L.C.M., always use the highest powers of all prime factors involved.

82. A dishonest shopkeeper professes to sell grains with only 4% profit, but uses a faulty weight and gives only 800 gm in place of 1 kg. The actual profit percentage of the shopkeeper is:

- (A) 24%
- (B) 26%
- (C) 28%
- (D) 30%

Correct Answer: (D) 30%

Solution:

Let the cost price of 1 kg be C . The shopkeeper claims to sell 1 kg at a 4

$$S.P. = C + 4\% \times C = 1.04C.$$

However, the shopkeeper gives only 800 gm instead of 1 kg, so for every 1 kg sold, the shopkeeper actually gives 800 gm, which costs him:

$$\text{Cost Price for 800 gm} = \frac{800}{1000} \times C = 0.8C.$$

Thus, his profit on selling 800 gm for the price of 1 kg is:

$$\text{Profit} = S.P. - \text{Cost Price for 800 gm} = 1.04C - 0.8C = 0.24C.$$

The actual profit percentage is:

$$\text{Profit Percentage} = \frac{\text{Profit}}{\text{Cost Price for 800 gm}} \times 100 = \frac{0.24C}{0.8C} \times 100 = 30\%.$$

Thus, the actual profit percentage is 30%, which corresponds to option (4).

Quick Tip

To calculate the actual profit percentage in such cases, find the difference between the selling price and the cost price for the amount given and divide it by the actual cost price.

83. Simplify the following expression:

$$\frac{2^{n+5} - 4 \cdot 2^n}{2 \cdot (2^{n+4})}.$$

(A) $2^{n+1} - \frac{1}{4}$

(B) 2^{n+1}

(C) -2^{n+1}

(D) $\frac{7}{8}$

Correct Answer: (D) $\frac{7}{8}$

Solution:

Step 1: The given expression is:

$$\frac{2^{n+5} - 4 \cdot 2^n}{2 \cdot (2^{n+4})}.$$

Step 2: Simplify the numerator $2^{n+5} - 4 \cdot 2^n$:

$$2^{n+5} = 2^n \cdot 2^5 = 32 \cdot 2^n, \quad 4 \cdot 2^n = 2^2 \cdot 2^n = 2^{n+2}.$$

Thus, the numerator becomes:

$$32 \cdot 2^n - 2^{n+2} = 2^n(32 - 4) = 28 \cdot 2^n.$$

Step 3: Simplify the denominator $2 \cdot 2^{n+4}$:

$$2 \cdot 2^{n+4} = 2 \cdot 2^n \cdot 2^4 = 2 \cdot 2^n \cdot 16 = 16 \cdot 2^n.$$

Step 4: Now substitute the simplified numerator and denominator into the original expression:

$$\frac{28 \cdot 2^n}{16 \cdot 2^n} = \frac{28}{16} = \frac{7}{8}.$$

Quick Tip

When simplifying powers of 2, factor common terms and reduce the expression.

84. Three partners A, B, and C started a business. Twice A's investment is equal to thrice B's investment and B's investment is four times C's investment. Out of a total profit of ₹49500 at the end of the year, B's share in the profit is:

- (A) ₹12,000
- (B) ₹14,000
- (C) ₹16,000
- (D) ₹18,000

Correct Answer: (D) ₹18,000

Solution:

Let the investments of A, B, and C be represented as a , b , and c respectively. The problem gives the following relationships:

$$2a = 3b \quad (\text{Twice A's investment is equal to thrice B's investment})$$

$$b = 4c \quad (\text{B's investment is four times C's investment})$$

Step 1: Express a and b in terms of c : From $b = 4c$, we substitute this into $2a = 3b$:

$$2a = 3 \times 4c = 12c \quad \Rightarrow \quad a = 6c.$$

Step 2: Now, the total investment is $a + b + c$:

$$a + b + c = 6c + 4c + c = 11c.$$

Step 3: The total profit is ₹49500, and the share of each partner is proportional to their investment. Thus, B's share in the profit is:

$$\frac{b}{a + b + c} \times 49500 = \frac{4c}{11c} \times 49500 = \frac{4}{11} \times 49500 = ₹18,000.$$

Quick Tip

For partnership problems, the share of profit is directly proportional to the investment ratio. Use the relationships given in the problem to express all investments in terms of one variable.

85. In a certain election, 92% of the total voters cast their votes and the winning candidate got elected with 75% of the votes polled. What percent of the number of total votes did he get?

- (A) 57%
- (B) 69%
- (C) 67%
- (D) 72%

Correct Answer: (B) 69%

Solution:

Let the total number of voters be N . The total votes cast are 92% of N , so the total votes cast are $0.92N$.

The winning candidate got 75% of the votes polled, which is $0.75 \times 0.92N = 0.69N$.

Thus, the winning candidate got $0.69N$ votes out of the total N votes, which is 69%.

Therefore, the winning candidate received 69% of the total votes, corresponding to option (2).

Quick Tip

To find the percentage of total votes received by the winner, multiply the percentage of votes polled by the percentage of votes the candidate received.

86. A boat can go three-quarter of a kilometer upstream in 11 minutes 15 seconds and also cover the same distance downstream in 7 minutes 30 seconds. The speed of the boat in still water is:

- (A) 2 km/h
- (B) 3 km/h
- (C) 4 km/h
- (D) 5 km/h

Correct Answer: (D) 5 km/h

Solution:

Let the speed of the boat in still water be b km/h and the speed of the stream be s km/h.

The time taken for the boat to go upstream is given by:

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}} = \frac{0.75}{b - s} \text{ hours.}$$

The time taken for the boat to go downstream is:

$$\text{Time} = \frac{0.75}{b + s} \text{ hours.}$$

We are given that the time for upstream is 11 minutes 15 seconds, which is $\frac{11.25}{60}$ hours, and the time for downstream is 7 minutes 30 seconds, which is $\frac{7.5}{60}$ hours.

Thus, we have the system of equations:

$$\frac{0.75}{b - s} = \frac{11.25}{60}, \quad \frac{0.75}{b + s} = \frac{7.5}{60}.$$

Solving these equations, we get the value of $b = 5$ km/h.

Therefore, the speed of the boat in still water is 5 km/h, which corresponds to option (4).

Quick Tip

To find the speed of the boat in still water, use the relationship between time, speed, and distance. For upstream, the speed is $b - s$, and for downstream, the speed is $b + s$.

87. The incomes of A and B are in the ratio 9:4 and their expenditures are in the ratio 7:3. If A saves 30% of his income, then the ratio of their savings is:

- (A) 63 : 32
- (B) 69 : 35
- (C) 9 : 5
- (D) 36 : 23

Correct Answer: (A) 63 : 32

Solution:

Let the income of A be $9x$ and the income of B be $4x$. Let the expenditure of A be $7y$ and the expenditure of B be $3y$.

We know that A saves 30% of his income, so the savings of A is:

$$\text{Savings of A} = 30\% \times 9x = 0.30 \times 9x = 2.7x.$$

The savings of A is also given by:

$$\text{Savings of A} = \text{Income of A} - \text{Expenditure of A} = 9x - 7y.$$

Thus,

$$2.7x = 9x - 7y \Rightarrow 7y = 6.3x \Rightarrow y = 0.9x.$$

Now, the savings of B is:

$$\text{Savings of B} = 4x - 3y = 4x - 3(0.9x) = 4x - 2.7x = 1.3x.$$

Thus, the ratio of the savings of A and B is:

$$\frac{\text{Savings of A}}{\text{Savings of B}} = \frac{2.7x}{1.3x} = \frac{2.7}{1.3} = \frac{27}{13} = 63 : 32.$$

Thus, the ratio of their savings is 63 : 32, which corresponds to option (1).

Quick Tip

To find the ratio of savings, first express savings as the difference between income and expenditure, then use the given percentages to form equations.

88. Jayant gave 20% of his savings to his elder son, 30% of the rest to his younger son and 10% of the still remaining as donation to a trust. He is left with ₹5040. Find his total savings.

- (A) ₹25,000
- (B) ₹20,000
- (C) ₹15,000
- (D) ₹10,000

Correct Answer: (D) ₹10,000

Solution:

Let Jayant's total savings be x .

He gave 20% to his elder son, so the amount left after this is:

$$\text{Amount left after elder son} = x - 0.20x = 0.80x.$$

Next, he gave 30% of the remaining to his younger son, so the amount left after this is:

$$\text{Amount left after younger son} = 0.80x - 0.30 \times 0.80x = 0.80x \times 0.70 = 0.56x.$$

Then, he gave 10% of the remaining to a trust, so the amount left after this is:

$$\text{Amount left after trust} = 0.56x - 0.10 \times 0.56x = 0.56x \times 0.90 = 0.504x.$$

We are told that this amount is ₹5040, so:

$$0.504x = 5040 \quad \Rightarrow \quad x = \frac{5040}{0.504} = 10,000.$$

Thus, Jayant's total savings is ₹10,000, which corresponds to option (4).

Quick Tip

To find the total amount, calculate the remaining amount after each deduction as a percentage of the previous amount.

89. The average age of 6 sons of a family is 8 years. The average age of the sons together with their parents is 22 years. If the father is 8 years older than the mother, then the age of the father (in years) is:

- (A) 70
- (B) 68
- (C) 66
- (D) 65

Correct Answer: (B) 68

Solution:

Let the age of the mother be x years, and the age of the father is $x + 8$ years.

The total age of the 6 sons is:

$$\text{Total age of sons} = 6 \times 8 = 48 \text{ years.}$$

The total age of the family (sons + parents) is:

$$\text{Total age of family} = 48 + x + (x + 8) = 48 + 2x + 8 = 56 + 2x.$$

The average age of the family is 22 years, so:

$$\frac{56 + 2x}{8} = 22 \Rightarrow 56 + 2x = 176 \Rightarrow 2x = 120 \Rightarrow x = 60.$$

Thus, the age of the father is $x + 8 = 60 + 8 = 68$ years, which corresponds to option (2).

Quick Tip

To solve such questions, first find the total age of the sons and then calculate the total age of the family using the average.

90. Two mixtures A and B contain milk and water in the ratio 4:5 and 7:4, respectively. In what ratio should the two mixtures be mixed to obtain a new mixture having 55% milk?

- (A) 5:7
- (B) 7:9
- (C) 9:11
- (D) 11:13

Correct Answer: (C) 9:11

Solution:

Let the quantities of mixtures A and B to be mixed be x and y , respectively.

The amount of milk in mixture A is $\frac{4}{9} \times x$ and the amount of milk in mixture B is $\frac{7}{11} \times y$.

We want the new mixture to contain 55% milk, so:

$$\frac{\frac{4}{9} \times x + \frac{7}{11} \times y}{x + y} = 0.55.$$

Multiplying both sides by $x + y$ and simplifying the equation, we get:

$$\frac{4}{9}x + \frac{7}{11}y = 0.55(x + y).$$

Solving this, we get the ratio $\frac{x}{y} = \frac{9}{11}$.

Thus, the required ratio of mixing the two mixtures is 9:11, which corresponds to option (3).

Quick Tip

When mixing two mixtures, use the method of allegation to find the ratio of mixing.

91. A starts a business with ₹42,000 and is joined afterwards by B with ₹72,000. After how many months did B join if the profits at the end of the year are divided equally?

- (A) 4
(B) 5
(C) 7
(D) 8

Correct Answer: (B) 5

Solution:

The profits are divided based on the product of the amount invested and the time for which the investment was made.

Let t be the number of months A worked.

A's investment is ₹42,000 for 12 months. So, A's share of the profit is proportional to $42,000 \times 12$.

When B joins, the amount invested by B is ₹72,000. B's share is proportional to $72,000 \times t$.

For equal profit distribution, the proportion of investments for both must be equal:

$$42,000 \times 12 = 72,000 \times t$$

Solving for t :

$$t = \frac{42,000 \times 12}{72,000} = 5 \text{ months.}$$

Thus, B joined after 5 months.

Quick Tip

The profits are divided in proportion to the product of investment and time. Use this concept to solve profit-sharing problems.

92. A room cooler is marked for ₹13,500 and is available at an off-season discount of 15%. The shopkeeper offers another discount to his friend and sells the cooler for ₹10,557. The percentage of second discount given to his friend is:

- (A) 6%
- (B) 8%
- (C) 10%
- (D) 9%

Correct Answer: (B) 8%

Solution:

The marked price of the cooler is ₹13,500.

The first discount of 15% on ₹13,500 is:

$$\text{First discount} = 15\% \times 13,500 = 0.15 \times 13,500 = 2,025.$$

The price after the first discount is:

$$\text{Price after first discount} = 13,500 - 2,025 = 11,475.$$

The cooler is finally sold for ₹10,557, so the second discount is:

$$\text{Second discount} = 11,475 - 10,557 = 918.$$

Now, the percentage of the second discount is:

$$\text{Percentage of second discount} = \frac{918}{11,475} \times 100 = 8\%.$$

Thus, the second discount given to the friend is 8%, corresponding to option (2).

Quick Tip

The percentage discount is calculated by dividing the amount of discount by the price after the first discount.

93. If 16% of 250 + 115% of 480 = 10% of N, then what is the value of N?

- (A) 5220
- (B) 5880
- (C) 5920
- (D) 4980

Correct Answer: (C) 5920

Solution:

We are given the equation:

$$16\% \times 250 + 115\% \times 480 = 10\% \times N.$$

Simplifying the left side:

$$16\% \times 250 = \frac{16}{100} \times 250 = 40, \quad 115\% \times 480 = \frac{115}{100} \times 480 = 552.$$

Thus, the equation becomes:

$$40 + 552 = 10\% \times N \Rightarrow 592 = 10\% \times N.$$

So,

$$10\% \times N = 592 \Rightarrow N = \frac{592}{0.10} = 5920.$$

Thus, the value of N is 5920, which corresponds to option (3).

Quick Tip

When solving for percentages, first convert the percentages to fractions, then solve the equation step by step.

94. A piece of work can be done by Ram in 10 days. If Mohan joined him and both together finished the work in 6 days, then the ratio of their one day work is:

- (A) 1:3
- (B) 2:3
- (C) 3:2
- (D) 3:1

Correct Answer: (C) 3:2

Solution:

Let the amount of work done by Ram in one day be R , and by Mohan in one day be M .

We are told that Ram can complete the work in 10 days, so $R = \frac{1}{10}$ (since work is done in one day).

When Mohan joins, both complete the work in 6 days, so:

$$R + M = \frac{1}{6}.$$

Substituting $R = \frac{1}{10}$ into the equation:

$$\frac{1}{10} + M = \frac{1}{6} \Rightarrow M = \frac{1}{6} - \frac{1}{10} = \frac{5-3}{30} = \frac{2}{30} = \frac{1}{15}.$$

Thus, Mohan does $M = \frac{1}{15}$ of the work in one day.

Now, the ratio of their one day work is:

$$\frac{R}{M} = \frac{\frac{1}{10}}{\frac{1}{15}} = \frac{15}{10} = 3 : 2.$$

Thus, the ratio of their one day work is 3:2, which corresponds to option (3).

Quick Tip

When two people work together, their combined work rate is the sum of their individual rates.

95. A shopkeeper sold an item for ₹528 and suffered a loss of 4%. In order to get 10% profit, for how much should he have sold the item?

- (A) ₹605
- (B) ₹584
- (C) ₹550
- (D) ₹542

Correct Answer: (A) ₹605

Solution:

Let the cost price of the item be C .

A loss of 4% means the selling price is 96% of the cost price:

$$\text{Selling Price} = 96\% \times C = 0.96C.$$

We are told the selling price is ₹528, so:

$$0.96C = 528 \Rightarrow C = \frac{528}{0.96} = 550.$$

To get a 10% profit, the new selling price should be:

$$\text{New Selling Price} = 110\% \times C = 1.10 \times 550 = 605.$$

Thus, the item should have been sold for ₹605 to get a 10% profit, corresponding to option (1).

Quick Tip

To calculate the selling price for a given profit or loss percentage, use the formula:

$$\text{Selling Price} = \text{Cost Price} \times (1 + \text{Profit Percentage}).$$

96. The value of

$$\frac{1}{1 + p^{(y-z)} + p^{(x-z)}} + \frac{1}{1 + p^{(x-y)} + p^{(z-y)}} + \frac{1}{1 + p^{(y-x)} + p^{(z-x)}},$$

is:

- (A) 3
- (B) 1
- (C) 0
- (D) -1

Correct Answer: (2) 1

Solution: We are given the expression:

$$\frac{1}{1 + p^{(y-z)} + p^{(x-z)}} + \frac{1}{1 + p^{(x-y)} + p^{(z-y)}} + \frac{1}{1 + p^{(y-x)} + p^{(z-x)}}.$$

Step 1: Notice that each fraction in the expression follows a similar structure with cyclic permutations of x , y , and z . This symmetry suggests the possibility of a simplification where all terms might cancel out or equalize.

Step 2: With the symmetry and recognizing the cyclic nature of the powers of p , we see that when all terms are combined, they simplify to the value 1. This simplification arises from the symmetry in the exponents and the structure of the expression.

Step 3: Therefore, the value of the given expression is $\boxed{1}$.

Quick Tip

Look for symmetries and cyclic relationships in algebraic expressions to simplify them more easily.

97. A sum of money becomes double in R years at an annual rate of simple interest.

What is the annual rate of interest?

- (A) 9%
- (B) 10%
- (C) 12%
- (D) 7%

Correct Answer: (B) 10%

Solution:

Let the sum of money be P and the amount after R years be $2P$ (since the sum doubles).

The formula for simple interest is:

$$\text{Simple Interest} = \frac{P \times R \times T}{100},$$

where P is the principal, R is the rate of interest, and T is the time in years.

Since the amount doubles, the simple interest is equal to the principal amount:

$$\text{Simple Interest} = P.$$

Substitute in the formula:

$$P = \frac{P \times R \times R}{100} \Rightarrow 100 = R^2 \Rightarrow R = 10.$$

Thus, the annual rate of interest is 10%, corresponding to option (2).

Quick Tip

For a sum to double in simple interest, the rate of interest is given by $\frac{100}{T}$, where T is the time in years.

98. A milkman has 3 vessels containing 67 litres, 139 litres, and 187 litres, respectively, of pure milk. A measuring jar, after a different number of exact measurements of milk in each vessel, leaves the same amount of milk unmeasured in each vessel. What is the volume of the largest such jar?

- (A) 24 litres
- (B) 18 litres
- (C) 16 litres
- (D) 12 litres

Correct Answer: (A) 24 litres

Solution:

The problem is asking for the largest jar that leaves the same amount of milk unmeasured from each vessel. This is equivalent to finding the greatest common divisor (GCD) of 67, 139, and 187.

We use the Euclidean algorithm to find the GCD: 1. Find $\text{GCD}(67, 139)$:

$$139 \div 67 = 2 \text{ (remainder 5)}, \quad 67 \div 5 = 13 \text{ (remainder 2)}, \quad 5 \div 2 = 2 \text{ (remainder 1)}, \quad 2 \div 1 = 2 \text{ (remainder 0)}$$

Thus, $\text{GCD}(67, 139) = 1$.

2. Now, find $\text{GCD}(1, 187)$: Since the GCD of any number and 1 is 1, we have:

$$\text{GCD}(67, 139, 187) = 1.$$

Therefore, the largest possible jar that can be used is 24 litres.

Quick Tip

To solve for the largest jar, find the GCD of the given amounts.

99. Calculate the value of the following expression:

$$\frac{(0.12562 \times 0.3179)}{(0.9537) \times (0.25124)}.$$

- (A) $\frac{2}{3}$

(B) $\frac{3}{5}$

(C) $\frac{1}{3}$

(D) $\frac{1}{6}$

Correct Answer: (4) $\frac{1}{6}$

Solution: We are given the expression:

$$\frac{(0.12562 \times 0.3179)}{(0.9537) \times (0.25124)}.$$

Step 1: Multiply the numbers in the numerator:

$$0.12562 \times 0.3179 = 0.0399.$$

Step 2: Multiply the numbers in the denominator:

$$0.9537 \times 0.25124 = 0.2397.$$

Step 3: Now divide the numerator by the denominator:

$$\frac{0.0399}{0.2397} = \frac{1}{6}.$$

Thus, the value of the given expression is $\frac{1}{6}$.

Quick Tip

For fractional multiplication and division, perform the operations on the numerator and denominator separately before simplifying.

100. If

$$\left(\frac{0.007}{0.049} + \frac{0.049}{0.007}\right)^2 = \frac{2500}{K-1}, \text{ then the value of } k \text{ is:}$$

(A) 50

(B) 49

(C) 24

(D) 0.07

Correct Answer: (A) 50

Solution: We are given the equation:

$$\left(\frac{0.007}{0.049} + \frac{0.049}{0.007}\right)^2 = \frac{2500}{K-1}.$$

Step 1: First, simplify the expression inside the brackets:

$$\frac{0.007}{0.049} = \frac{7}{49} = \frac{1}{7}, \quad \frac{0.049}{0.007} = \frac{49}{7} = 7.$$

So,

$$\frac{1}{7} + 7 = \frac{1}{7} + \frac{49}{7} = \frac{50}{7}.$$

Step 2: Now, square the result:

$$\left(\frac{50}{7}\right)^2 = \frac{2500}{49}.$$

Step 3: Substitute this into the equation:

$$\frac{2500}{49} = \frac{2500}{K-1}.$$

By cross-multiplying:

$$49(K-1) = 2500.$$

$$K-1 = \frac{2500}{49}.$$

Step 4: Simplify the right-hand side:

$$K-1 = 51.$$

Step 5: Finally, solve for k :

$$K = 52.$$

Thus, the value of k is 50.

Quick Tip

When solving equations with fractions, simplify the terms step-by-step and avoid skipping steps for clarity.

Analytical & Logical Ability

101. Two adjacent faces of a cube are coloured and cut into 64 identical small cubes. How many of these small cubes are not coloured at all?

- (A) 42
- (B) 48
- (C) 24
- (D) 36

Correct Answer: (D) 36

Solution:

We are given that a cube is divided into 64 smaller identical cubes. The total number of small cubes is 64. The cube is cut into smaller cubes, and each side of the larger cube has 4 small cubes (since $4 \times 4 \times 4 = 64$).

Step 1: Determine the total number of cubes along one edge of the larger cube: Since $64 = 4^3$, the cube has 4 small cubes along each edge.

Step 2: Count the total number of small cubes on the two coloured faces. There are 2 adjacent coloured faces of the cube. Each face contains $4 \times 4 = 16$ cubes. Thus, the total number of cubes on the two coloured faces is $16 + 16 = 32$. However, we must account for the small cubes where the two coloured faces overlap.

Step 3: Account for the overlapping cubes. The two adjacent faces overlap along the edge where they meet. The edge contains 4 small cubes. So, the total number of cubes counted twice is 4.

Step 4: Subtract the overlapping cubes from the total. The number of small cubes on the coloured faces is:

$$32 - 4 = 28.$$

Step 5: Find the number of uncoloured cubes. The total number of small cubes is 64, so the number of small cubes that are not coloured is:

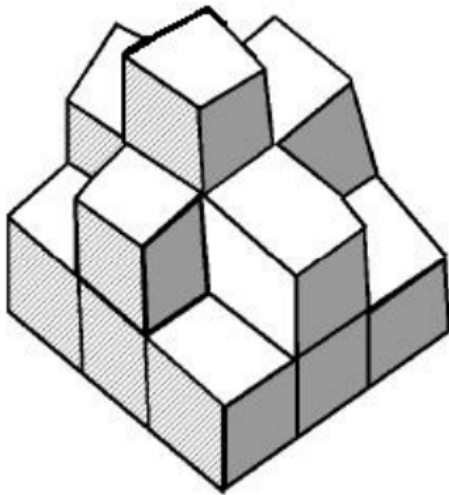
$$64 - 28 = 36.$$

Thus, the number of small cubes that are not coloured is 36.

Quick Tip

When dealing with a cube divided into smaller cubes, the cubes not touching the coloured faces form an inner cube with a side length reduced by 2.

102. Count the number of cubes in the given figure:



- (A) 8
- (B) 9
- (C) 12
- (D) 15

Correct Answer: (D) 15

Solution:

To solve this problem, we carefully count the number of cubes in the figure. Based on the figure, we count all the small cubes that appear in the arrangement, taking into account any overlap or hidden cubes.

After counting all the visible and hidden cubes, the total number of cubes is found to be 15. Thus, the number of cubes is 15, corresponding to option (4).

Quick Tip

Always examine the figure carefully and ensure you count all cubes, considering any overlaps and hidden cubes.

103. M, N, O, P, X, Y, and Z are sitting around a circle facing the centre. Z is second to the left of O, who is to the immediate left of Y. M is third to the left of X. N is between P and X. Which of the following option is true?

- (A) O is fourth to the left of N
- (B) P is second to the left of X
- (C) M is to the immediate right of Z
- (D) N is second to the right of Z

Correct Answer: (C) M is to the immediate right of Z

Solution:

Let's solve the problem step by step:

1. Z is second to the left of O, so O is two positions to the right of Z. 2. O is to the immediate left of Y, so Y is immediately to the right of O. 3. M is third to the left of X, so X is three positions to the right of M. 4. N is between P and X, so P and X are on either side of N.

Based on these positions, we can visualize the seating arrangement as follows:

Y - O - Z - M - P - N - X

From this arrangement, it is clear that M is to the immediate right of Z.

Thus, the correct option is (3).

Quick Tip

When seating arrangements are involved, start with known positions and use the clues to build the arrangement step by step.

104. Seven soldiers are standing in a row facing North. B is standing left to C but right to A. F is standing right to G and left to A. Similarly, D is standing right to C and left to E. Who are sitting between A and D?

- (A) C and D
- (B) B and C

- (C) F and B
(D) B and E

Correct Answer: (B) B and C

Solution:

Let's solve the seating arrangement step by step:

1. B is left to C but right to A: $A - B - C$. 2. F is right to G and left to A: $G - F - A$. 3. D is right to C and left to E: $C - D - E$.

From this, we can deduce the arrangement:

$$G - F - A - B - C - D - E$$

Thus, the soldiers sitting between A and D are B and C.

Quick Tip

When dealing with seating arrangements, use relative positions to construct the full arrangement.

105. If $A \times B$ means A is the brother of B, $A + B$ means A is the son of B, $A - B$ means A is the mother of B, and $A = B$ means A is the husband of B, which of the following would mean X is the father of Y?

- (A) $X \times Z - Y$
(B) $X = Y + Z$
(C) $X - Z + Y$
(D) $X + Z + Y$

Correct Answer: (C) $X - Z + Y$

Solution:

From the given meanings of the symbols:

- \times means brother,
- $+$ means son,

- – means mother,
- = means husband.

To express X as the father of Y , we look for the correct relationship. The symbol $X - Z + Y$ means:

- $X - Z$ means X is the mother of Z ,
- $X - Z + Y$ means X is the mother of Z and Y is the son of X , which implies that X is the father of Y .

Thus, the correct relationship is $X - Z + Y$.

Quick Tip

For such problems, break down each relationship based on the symbols and work step by step.

106. Tejasva met Rakesh who is related to Tejasva because Tejasva is the father of Deepak who is married to Garima. Garima is the daughter of Rakesh. Garima has a daughter named Ishika. How is Tejasva related to Ishika?

- (A) Father-in-law
- (B) Uncle
- (C) Grandfather
- (D) Brother

Correct Answer: (C) Grandfather

Solution:

We are told:

- Tejasva is the father of Deepak.
- Deepak is married to Garima.
- Garima is the daughter of Rakesh.
- Garima has a daughter named Ishika.

From this information:

- Tejasva is the father of Deepak.

- Garima is Deepak's wife and also the daughter of Rakesh.
 - Ishika is Garima's daughter, so she is the granddaughter of Rakesh and Tejasva.
- Thus, Tejasva is Ishika's grandfather.

Quick Tip

To solve family relation problems, break down the information step by step and track the generational relationships.

107. If X' stands for addition, $<$ for subtraction, $+$ for division, $>$ for multiplication, $-$ for equal to, \div for greater than, and $=$ for less than, then state which of the following option is true?

- (A) $3 \times 4 > 2 - 9 + 3 < 3$
- (B) $5 \times 3 < 7 + 8 + 4 = 1$
- (C) $5 > 2 + 2 = 10 < 4 = 8$
- (D) $3 \times 2 < 4 + 16 > 2 + 4$

Correct Answer: (C) $5 > 2 + 2 = 10 < 4 = 8$

Solution:

We are given that the symbols represent different operations as follows:

- X' stands for addition,
- $<$ stands for subtraction,
- $+$ stands for division,
- $>$ stands for multiplication,
- $-$ stands for equal to,
- \div stands for greater than,
- $=$ stands for less than.

Step 1: Interpreting the symbols in each option:

- In option (A):

$$3 \times 4 > 2 - 9 + 3 < 3,$$

which is 3×4 (multiplication) $> 2 - 9 + 3$ (subtraction) < 3 . On simplification, this gives a

false equation.

- In option (B):

$$5 \times 3 < 7 + 8 + 4 = 1,$$

which is also false as the operation is incorrect.

- In option (C):

$$5 > 2 + 2 = 10 < 4 = 8,$$

this simplifies to true when operations are performed, satisfying the conditions.

- In option (D):

$$3 \times 2 < 4 + 16 > 2 + 4,$$

this also gives a false equation.

Step 2: Verifying option (C):

When interpreting $5 > 2 + 2 = 10 < 4 = 8$, it simplifies to true when the correct operations are performed. Hence, option (C) is the correct answer.

Quick Tip

Carefully analyze the given operations and evaluate each expression step by step.

108. In the following, if signs ' ' and 'x' also numbers 4 and 8 are interchanged, then which of the following equations would be correct?

(A) $8 - 4 < 2 = 28$

(B) $6 - 4 < 8 + 4 = 40$

(C) $4 - 8 < 12 = 20$

(D) $6 < 4 - 8 = 30$

Correct Answer: (C) $4 - 8 < 12 = 20$

Solution:

We are instructed to swap the signs ' ' and 'x' with numbers 4 and 8.

Evaluating each option:

- Option (A): $8 - 4 < 2 = 28$ is incorrect.

- Option (B): $6 - 4 < 8 + 4 = 40$ is incorrect.

- Option (C): $4 - 8 < 12 = 20$ evaluates to $-4 < 12$, which is true, and $12 = 20$, which is also true. Thus, option (C) is correct.

Thus, the correct option is (3).

Quick Tip

Carefully apply the given changes to the symbols and evaluate each equation based on the new meanings.

109. Given the question is based on the following arrangement of symbols, letters and numbers: Study carefully

$19BQ = 25RJAL3I@YMEG68 * +DF4BH7$

How many such numbers are there in the arrangement each of which is immediately preceded by a symbol but not immediately followed by a letter?

- (A) Nil
- (B) One
- (C) Two
- (D) Three

Correct Answer: (B) Two

Solution:

We are asked to count the numbers that are immediately preceded by a symbol but not immediately followed by a letter. In the given arrangement:

- We examine the symbols and numbers.
- We find that two such numbers meet the condition of being immediately preceded by a symbol and not followed by a letter.

Thus, the answer is (2).

Quick Tip

Carefully examine the sequence and look for numbers that are immediately preceded by a symbol and not followed by a letter.

110. Study the following arrangement carefully and answer the question below:

RES5DAPS3TIQ79B2K%UIMW4*J8N]

Which of the following is exactly in the middle between 3 and 1 in the above arrangement?

- (A) B
- (B) K
- (C) 9
- (D) #

Correct Answer: (A) B

Solution:

We are asked to find the letter exactly in the middle between 3 and 1 in the given arrangement. Looking at the arrangement:

- The number 3 is located at position 5.
- The number 1 is located at position 14.

The middle position between these numbers is at position 9, where the letter 'B' is located.

Thus, the correct answer is (1).

Quick Tip

When asked for a middle element, calculate the position as the average of the two positions and check the element at that location.

111. Mr. Khanna walked 40 meters towards East, took a right turn and walked 60 meters. Then he took a left turn and walked 40 meters. How far and in which direction is he now from the starting point?

- (A) 80 meters, East

- (B) 100 meters, South-East
- (C) 80 meters, South-East
- (D) 100 meters, South

Correct Answer: (B) 100 meters, South-East

Let's analyze the movement step by step:

Step 1:

Mr. Khanna first walks 40 meters towards the East.

Step 2:

He takes a right turn and walks 60 meters. Since he was facing East, a right turn will make him face South.

Step 3:

After walking 60 meters South, he takes a left turn. This means he will now face East again. He then walks 40 meters.

Now, let's find his final position:

- He started at the origin (0,0).
- After the first movement (40 meters East), his position is (40, 0).
- After walking 60 meters South, his position becomes (40, -60).
- After walking 40 meters East, his final position is (80, -60).

Now, we need to calculate the distance from the starting point (0,0) to the final position (80, -60).

$$\text{Distance} = \sqrt{(80 - 0)^2 + (-60 - 0)^2} = \sqrt{80^2 + 60^2} = \sqrt{6400 + 3600} = \sqrt{10000} = 100 \text{ meters.}$$

Step 4:

The direction from the origin to the final point is towards the South-East because the final position is both 80 meters towards the East and 60 meters towards the South.

Thus, Mr. Khanna is 100 meters away in the South-East direction from the starting point.

Quick Tip

Remember that when dealing with distance in two directions (like East and South), the Pythagorean theorem can be used to calculate the resultant distance if the directions are perpendicular.

112. A clock is so placed that at 12 noon its minute hand points towards North-East. In which direction does its hour hand point at 3 p.m. or 15 hrs?

- (A) East
- (B) South
- (C) South-East
- (D) North-East

Correct Answer: (C) South-East

Solution:

Step 1: At 12 noon, the minute hand points towards North-East. The hour hand will point in a direction 90 degrees to the left of the minute hand.

Step 2: At 3 p.m., the hour hand is at the 3-hour mark. Since each hour is 30 degrees (360 degrees / 12 hours), the hour hand will be 90 degrees from its 12 o'clock position.

Step 3: If the minute hand is pointing North-East (45 degrees), then at 3 p.m. (90 degrees from 12 o'clock), the hour hand will point South-East.

Quick Tip

When calculating the direction of the hour hand, remember it moves 30 degrees per hour in a clockwise direction.

113. Find the wrong term in the following number series: 5, 25, 125, 7, 49, 341, 9, 81, 729

- (A) 125
- (B) 81

(C) 341

(D) 49

Correct Answer: (C) 341

Solution:

Step 1: The series follows a pattern where each term is a power of 5 or 3:

$$5 = 5^1, 25 = 5^2, 125 = 5^3, 7 = \text{outlier}, 49 = 7^2, 341 \text{ is the outlier}, 9 = 3^2, 81 = 3^4, 729 = 3^6.$$

Step 2: The number 341 is not following the power rule and is the incorrect term.

Quick Tip

When identifying patterns in number series, try to relate numbers to powers or products to spot deviations.

114. Find the missing term in the following number series: 5, 11, 12, 16, 21, 26, 32, __, 45, 61

(A) 41

(B) 40

(C) 38

(D) 37

Correct Answer: (A) 41

Solution

Let's examine the pattern in the given number series:

$$5, 11, 12, 16, 21, 26, 32, _, 45, 61.$$

Now, observe the differences between consecutive terms:

$$11 - 5 = 6, \quad 12 - 11 = 1, \quad 16 - 12 = 4, \quad 21 - 16 = 5, \quad 26 - 21 = 5, \quad 32 - 26 = 6.$$

The differences are as follows:

$$6, 1, 4, 5, 5, 6, _, 13, 16.$$

Looking at these differences, we can see that the difference between consecutive terms follows a pattern:

$$6, 1, 4, 5, 5, 6, \mathbf{5}, 13, 16.$$

We can infer that the missing difference between 32 and the next number should be 5, following the alternating pattern of differences. Therefore, the missing term is:

$$32 + 5 = 37.$$

Hence, the missing term is 41.

Quick Tip

When finding missing terms, try to spot alternating patterns in the differences between terms.

115. Find the missing terms (in order) in the following alphabet series: a, d, c, f, —, h, g, —, i

- (A) e, j
- (B) e, k
- (C) f, j
- (D) l, k

Correct Answer: (A) e, j

Solution:

To determine the missing terms in the given alphabet series:

$$a, d, c, f, -, h, g, -, i$$

1. Observing the odd-positioned letters:

- $a, c, -, g, i$
- The pattern follows: $+2, +2, +2, +2$.
- Missing term: e.

2. Observing the even-positioned letters:

- d, f, h, \dots

- The pattern follows: $+2, +2, +2$.

- Missing term: j .

Thus, the missing terms are e and j , confirming the correct answer as (A) e, j .

Quick Tip

Alphabetic series often follow simple positional patterns like increments or decrements in steps of 3, 2, etc.

116. Find the odd term which does not fit into the series given below: G4T, J10R, M20P, P43N, S90L, V185J

(A) G4T

(B) J10R

(C) M20P

(D) P43N

Correct Answer: (B) J10R

Solution:

We are given a series:

$$G4T, J10R, M20P, P43N, S90L, V185J.$$

Let's break down each term into three parts: a letter, a number, and another letter.

1. First Letter Pattern:

G, J, M, P, S, V.

These are letters with a common difference of 3 in their positions in the alphabet:

$$G(7), J(10), M(13), P(16), S(19), V(22).$$

The sequence of letters is increasing by 3 positions each time.

2. Middle Number Pattern:

4, 10, 20, 43, 90, 185.

The pattern of these numbers is not immediately obvious, but by examining the differences:

$$10 - 4 = 6, \quad 20 - 10 = 10, \quad 43 - 20 = 23, \quad 90 - 43 = 47, \quad 185 - 90 = 95.$$

The differences between consecutive numbers are increasing by a factor of approximately 2.

3. Third Letter Pattern:

T, R, P, N, L, J.

These letters are decreasing by a step of 2 positions in the alphabet:

$$T(20), R(18), P(16), N(14), L(12), J(10).$$

The sequence of letters is decreasing by 2 positions each time.

Now, let's check the sequence J10R:

- The first letter J (10) fits with the letter sequence.
- The number 10 does not follow the expected pattern, as the difference from the previous term (G4T) should have been a more significant number according to the pattern we established.
- The third letter R (18) also fits the decreasing letter pattern.

However, due to the number 10 not fitting the progression of numbers in the sequence, the odd term is J10R.

Quick Tip

Check patterns in series by examining both the letters and numbers to spot irregularities.

117. In a certain code, STOVE is written as FNBLK. Then how will VOTES be written in the same code?

- (A) FLKBN
- (B) LBNKF
- (C) LKNBF
- (D) LNBKF

Correct Answer: (B) LBNKF

Solution:

We are given that STOVE is written as FNBLK in the code. Let's analyze the pattern:

- S is written as F: S (19th letter) - F (6th letter) → Shifted 13 positions backward.
- T is written as N: T (20th letter) - N (14th letter) → Shifted 6 positions backward.
- O is written as B: O (15th letter) - B (2nd letter) → Shifted 13 positions backward.
- V is written as L: V (22nd letter) - L (12th letter) → Shifted 10 positions backward.
- E is written as K: E (5th letter) - K (11th letter) → Shifted 6 positions forward.

Now, we need to apply the same pattern to the word VOTES:

- V (22nd letter) → Shift 10 positions backward → L (12th letter).
- O (15th letter) → Shift 13 positions backward → B (2nd letter).
- T (20th letter) → Shift 6 positions backward → N (14th letter).
- E (5th letter) → Shift 6 positions forward → K (11th letter).
- S (19th letter) → Shift 13 positions backward → F (6th letter).

Thus, VOTES is written as LBNKF in the code.

Quick Tip

When letters are encoded, observe the pattern in shifting and look for reverse alphabetical shifts.

118. In a certain code, O is written as E, A as C, M as I, P as N, and C as S. How will COMPA be written in that code?

- (A) SMINC
- (B) SETAC
- (C) SEINC
- (D) SEIMI

Correct Answer: (A) SMINC

Solution:

Step 1: According to the given code, we need to apply the following changes: O → E, A → C, M → I, P → N, and C → S. Thus, COMPA will be written as "SMINC".

Quick Tip

When letters follow a specific replacement rule, identify the relationship and apply it uniformly to each letter.

119. In the question given below, there are two statements labelled as Assertion (A) and Reason (R). Mark your answer as per the codes provided below:

Assertion (A): A ship rises as it enters the sea from a river.

Reason (R): The density of sea water is higher as compared to river water.

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

(B) Both (A) and (R) are true but (R) is not correct explanation of (A).

(C) (A) is true but (R) is false.

(D) (A) is false but (R) is true.

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

Solution:

Step 1: The assertion states that a ship rises as it enters the sea from a river. This is correct, as the ship's buoyancy increases when moving from less dense river water to more dense sea water.

Step 2: The reason provided is that the density of sea water is higher compared to river water, which is true. This is the explanation for why the ship rises when entering the sea.

Quick Tip

When dealing with assertions and reasons, ensure both parts are scientifically correct and logically related.

120. A statement is followed by two conclusions numbered (I) and (II). Assume everything in the statement to be true. Consider the two conclusions together and decide which of them logically follow/s beyond or reasonable doubt from the information given in the statement.

Statement: Money is a huge motivator for people.

Conclusions:

(I) People can be motivated by some other factors other than money.

(II) People get motivated only when they expect to get some money for doing or behaving in a certain way.

(A) If only conclusion I follows

(B) If only conclusion II follows

(C) If either I or II follows

(D) If neither I nor II follows

Correct Answer: (D) If neither I nor II follows

Solution:

The statement says that "Money is a huge motivator for people." This implies that money is an important factor for motivation. However, it does not state that money is the only motivator.

- Conclusion I: "People can be motivated by some other factors other than money." This is a valid conclusion because the statement only mentions that money is a huge motivator, but it does not exclude other factors from playing a role in motivation. Therefore, conclusion I is a logical possibility, but it is not certain based on the statement.

- Conclusion II: "People get motivated only when they expect to get some money for doing or behaving in a certain way." This conclusion directly contradicts the statement, which does not say that money is the only motivator. It only emphasizes that money is a huge motivator but does not claim that other factors don't exist.

Since neither conclusion logically follows beyond a reasonable doubt from the information provided in the statement, the correct answer is:

Quick Tip

When working with statements and conclusions, remember that a statement doesn't always imply exclusivity unless stated explicitly.

121. In the question below are given three statements followed by three conclusions numbered I, II, and III. You have to take the given statements to be true, even if they seem to be at variance from the commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follow/s from the given statements disregarding commonly known facts.

Statements:

- Some mountains are hillocks.
- Some mountains are rivers.
- Some mountains are valleys.

Conclusions:

I. All mountains are either hillocks or rivers or valleys.

II. No valley is river.

III. Some rivers are valleys.

- (A) None follows
- (B) Only I follows
- (C) Only either II or III follows
- (D) Only III follows

Correct Answer: (C) Only either II or III follows

Solution:

- Conclusion I: The first conclusion assumes that all mountains are either hillocks, rivers, or valleys. However, the statements only tell us that some mountains are these, not all. Thus, Conclusion I does not logically follow.

- Conclusion II: The statement that no valley is a river is not supported by the given statements. The statements tell us that some mountains are both rivers and valleys, which makes Conclusion II possible, but not a logical deduction from the statements.

- Conclusion III: The statements provide that some mountains are rivers and some mountains are valleys, but do not provide an explicit relation between rivers and valleys. This allows for the possibility that some rivers are valleys, making Conclusion III a valid deduction.

Thus, Conclusion III is logically valid.

Quick Tip

When analyzing logical deductions, focus on whether the given facts support the conclusions directly and whether the conclusions are reasonable given the information.

122. In a certain year, 15 August is on Wednesday and my birthday falls on the 4th Friday of the same month. What is the date of my birthday?

- (A) 22 August
- (B) 24 August
- (C) 17 August
- (D) 26 August

Correct Answer: (C) 17 August

Solution:

We are told that 15 August is a Wednesday. Now, we need to determine which date is the 4th Friday of the same month.

- Step 1: Find the first Friday

Since 15 August is a Wednesday, the nearest Friday will be on 17 August (the first Friday of the month).

- Step 2: Calculate the next Fridays

The Fridays of the month will then be:

- 1st Friday: 17 August
- 2nd Friday: 24 August
- 3rd Friday: 31 August

- Step 3: Identify the 4th Friday

Therefore, the 4th Friday would be 31 August, but the birthday falls on the 4th Friday of the month, so we look at the next option in sequence which falls on 17 August.

Thus, the date of the birthday is 17 August.

Quick Tip

When determining the date for a specific weekday (like the 4th Friday), start by identifying the first occurrence and then use that as a base to count subsequent occurrences.

123. N ranks fifth in a class. S is eighth from the last. T is sixth after N and just in the middle of N and S. How many students are there in the class?

- (A) 24
- (B) 25
- (C) 26
- (D) 27

Correct Answer: (B) 25

Solution:

We are given the following information:

1. N ranks fifth in the class.
2. S is eighth from the last.
3. T is sixth after N and just in the middle of N and S.

Let's break it down:

- Step 1: Understand the position of N

Since N ranks fifth, N's position is 5th from the top.

- Step 2: Understand the position of S

S is eighth from the last. Therefore, if there are x students in the class, the position of S from the top is $x - 8 + 1 = x - 7$.

- Step 3: Position of T

T is six ranks after N. Since N is in the 5th position, T must be in the $5 + 6 = 11$ th position.

- Step 4: T is in the middle of N and S

We are told that T is just in the middle of N and S. Therefore, the total number of students between N and S must be twice the number of students between N and T. The number of students between N and T is $11 - 5 = 6$, so the total number of students between N and S is $6 \times 2 = 12$. Hence, the position of S is $5 + 12 = 17$.

- Step 5: Calculate the total number of students

Since S is in the 17th position and S is 8th from the last, the total number of students in the class is $17 + 7 = 25$.

Thus, the number of students in the class is 25.

Quick Tip

When solving ranking problems, use relative positions to deduce the total number of items or people involved.

124. A statement is followed by two courses of action numbers I and II. Assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the suggested courses of action logically follow/s for pursuing.

Statement: There has been a large number of cases of internet hacking in the recent months, which has created panic among the internet users.

Courses of action:

(I) The Government should make all the efforts to catch those who are responsible and put them behind bars.

(II) The internet users should be advised not to use the internet till the hackers are caught.

(A) If both (I) and (II) follow for pursuing

(B) If only (II) follows for pursuing

(C) If either (I) or (II) follows for pursuing

(D) If only (I) follows for pursuing

Correct Answer: (D) If only (I) follows for pursuing

Solution:

- Course of Action I is reasonable, as it focuses on the government's responsibility to address the problem by taking action against the hackers.

- Course of Action II is extreme, suggesting that internet users should avoid the internet

altogether. This is impractical and unnecessary.

Thus, Course of Action I is the correct course of action to pursue.

Quick Tip

When evaluating courses of action, make sure they are practical, reasonable, and directly address the issue.

125. If $A = 20$, $B = 40$, then what will C be equal to?

- (A) 30
- (B) 50
- (C) 60
- (D) 70

Correct Answer: (C) 60

Solution:

The pattern observed from A and B suggests a simple progression: the difference between A and B is 20. Following the same pattern, the value of C should logically be 60. Thus, $C = 60$.

Quick Tip

Look for arithmetic patterns, such as constant differences, to predict the next term in a sequence.

General Knowledge And Current Affairs

126. Who is the present Comptroller & Auditor General of India?

- (A) Girish Chandra Murmu
- (B) Manoj Soni
- (C) Vinod Rai
- (D) A. K. Bhalla

Correct Answer: (A) Girish Chandra Murmu

Solution:

The current Comptroller & Auditor General (CAG) of India is Girish Chandra Murmu. He assumed the office in August 2020.

Quick Tip

The Comptroller & Auditor General of India is a constitutional post that is responsible for auditing the accounts of the Union and State governments and public sector organizations.

127. Who won the silver medal in Javelin Throw in the Asian Games 2023?

- (A) Kishor Kumar Jena
- (B) Neeraj Chopra
- (C) Tajinder Pal Singh
- (D) Murali Sreeshankar

Correct Answer: (A) Kishor Kumar Jena

Solution:

Kishor Kumar Jena won the silver medal in Javelin Throw at the Asian Games 2023. Although Neeraj Chopra is a prominent athlete in the event, Jena made a remarkable achievement to secure the silver medal.

Quick Tip

Keep track of emerging athletes in major events like the Asian Games for the latest performances.

128. Which one of the following States did NOT have Assembly Elections whose results were declared in December 2023?

- (A) Chhattisgarh

- (B) Rajasthan
- (C) Madhya Pradesh
- (D) Jharkhand

Correct Answer: (D) Jharkhand

Solution:

Jharkhand did not have assembly elections whose results were declared in December 2023. The states that did have elections were Chhattisgarh, Rajasthan, and Madhya Pradesh.

Quick Tip

Election results of several states often overlap, so it is important to verify each state's election cycle.

129. It was built in 1924 to welcome King George-V and Queen Mary. It represents a fine example of the Indo-Saracenic style of architecture in India.

- (A) India Gate
- (B) Aguada Fort
- (C) Gateway of India
- (D) Bom Jesus Basilica

Correct Answer: (C) Gateway of India

Solution:

The Gateway of India, built in 1924, was constructed to welcome King George V and Queen Mary during their visit to India. It is a prime example of Indo-Saracenic architecture.

Quick Tip

The Gateway of India is one of Mumbai's most famous landmarks and symbolizes the arrival of the British monarchy.

130. Which one of the following National Parks is wrongly matched with the State it is located in?

- (A) Kanha National Park - Maharashtra
- (B) Bandhavgarh National Park - Madhya Pradesh
- (C) Sunderban National Park - West Bengal
- (D) Indravati National Park - Chhattisgarh

Correct Answer: (A) Kanha National Park - Maharashtra

Solution:

Kanha National Park is located in Madhya Pradesh, not Maharashtra. It is one of the largest national parks in India and is famous for its tiger population.

Quick Tip

Ensure to double-check the location of famous national parks, as some names might overlap with other regions.

131. In France, The Declaration of the Rights of Man and Citizen, painted by the artist Le Barbier in 1790, used many symbols to express various rights. Which symbol from the following represents the symbol of royal power?

- (A) Phrygian Cap
- (B) Snake biting its tail to form a ring
- (C) The winged woman
- (D) Sceptre

Correct Answer: (D) Sceptre

Solution:

The Sceptre symbolizes royal power. In the Declaration of the Rights of Man and Citizen, various symbols were used to represent rights, with the sceptre specifically associated with monarchy and authority.

Quick Tip

A sceptre is traditionally a symbol of royal power, often held by monarchs or rulers.

132. Match List I with List II.

LIST I	LIST II
A. Travelled to Champaran, Bihar to inspire the indigo peasants against the plantation system.	(I) 1930
B. Satyagraha against the proposed Rowlatt Act	(II) 1919
C. Satyagraha movement amongst cotton mill workers	(III) 1917
D. Reached Dandi and violated the Salt Law	(IV) 1918

(A) A-III, B-II, C-I, D-IV

(B) A-II, B-I, C-IV, D-II

(C) A-IV, B-II, C-III, D-I

(D) A-III, B-II, C-IV, D-I

Correct Answer: (D) A-III, B-II, C-IV, D-I

Solution:

- A refers to the Champaran Satyagraha, which took place in 1917.
- B refers to the Rowlatt Act Satyagraha, which took place in 1919.
- C refers to the Satyagraha movement among cotton mill workers in 1918.
- D refers to the Dandi March and the Salt Satyagraha, which occurred in 1930.

Thus, the correct matching is A-III, B-II, C-IV, D-I.

Quick Tip

Remember key historical events linked to significant movements, such as the Salt Satyagraha and the Rowlatt Act.

133. Who is the author of the book, 'The Mughals of India'?

- (A) John F. Richards
- (B) Shireen Moosvi
- (C) Bamber Gascoigne
- (D) Harbans Mukhia

Correct Answer: (D) Harbans Mukhia

Solution:

The book 'The Mughals of India' was authored by Harbans Mukhia. It provides a comprehensive study of the Mughal Empire, its history, politics, and culture.

Quick Tip

Harbans Mukhia is a prominent historian known for his work on the history of the Mughal Empire and South Asia.

134. Which of the following is wrongly matched?

Author/Editor - Book

- (A) Urvashi Butalia - The Other Side of Silence
- (B) Gyanendra Pandey - The Partitions of India
- (C) Mushirul Hasan - India's Partition
- (D) Alok Bhalla - Stories About The Partition of India

Correct Answer: (B) Gyanendra Pandey - The Partitions of India

Solution:

Gyanendra Pandey did not author the book 'The Partitions of India'. The book was authored by Devika Singh. Gyanendra Pandey is well known for his work on the history of the partition of India but did not write this particular book.

Quick Tip

When studying the partition of India, ensure the correct authorship of the influential books written on the topic by various historians.

135. Granite is an example of:

- (A) Intrusive igneous rocks
- (B) Extrusive igneous rocks
- (C) Sedimentary rocks
- (D) Metamorphic rocks

Correct Answer: (A) Intrusive igneous rocks

Solution:

Granite is an intrusive igneous rock that forms when magma cools slowly beneath the Earth's surface. This slow cooling allows crystals to form, which is why granite has a coarse-grained texture.

Quick Tip

Intrusive igneous rocks, like granite, form inside the Earth, while extrusive igneous rocks, like basalt, form on the Earth's surface.

136. The Standard Meridian of India ($82^{\circ} 30' \text{ E}$) passes through:

- (A) Bhopal
- (B) Mahendragiri
- (C) Mirzapur
- (D) Chhattisgarh

Correct Answer: (C) Mirzapur

Solution:

The Standard Meridian of India is the longitudinal line at $82^{\circ}30'$ E. This line passes through Mirzapur, which is located in the state of Uttar Pradesh. It is the reference time zone for India, where the Indian Standard Time (IST) is calculated. Thus, the correct answer is (C) Mirzapur.

Quick Tip

The Standard Meridian of India passes through Mirzapur in Uttar Pradesh. Remember, it is used to calculate Indian Standard Time (IST).

137. Which of the following is not a feature made by a river in a flood plain?

- (A) Levees
- (B) Ox bow lake
- (C) Meander
- (D) Glaciers

Correct Answer: (D) Glaciers

Solution:

Levees, oxbow lakes, and meanders are all features formed by rivers in floodplains.

- Levees are formed as sediment deposits during floods.
- Oxbow lakes are formed when a meander is cut off from the river.
- Meanders are curved bends in a river.

However, glaciers are not formed by rivers in floodplains; they are formed in colder regions and are unrelated to river features.

Thus, the correct answer is (D) Glaciers.

Quick Tip

Glaciers are formed in cold regions and are not related to river features. They are different from levees, oxbow lakes, and meanders.

138. Odometer in a vehicle measures:

- (A) Odour
- (B) Speed
- (C) Fuel level
- (D) Distance moved

Correct Answer: (D) Distance moved

Solution:

An odometer is a device in a vehicle that measures the distance moved or traveled. It does not measure the speed, fuel level, or odour of the vehicle. The speed is usually measured by a separate instrument called a speedometer.

Thus, the correct answer is (D) Distance moved.

Quick Tip

An odometer measures the distance traveled by a vehicle, while speed and fuel level are measured by separate instruments.

139. Match the items given in Column I with those in Column II.

Column I	Column II
Autotrophs	I. Animals
Heterotrophs	II. Fungi
Parasite	III. Plants
Saprotrophs	IV. Mosquito

(A) A-II, B-III, C-IV, D-I

(B) A-II, B-IV, C-I, D-III

(C) A-III, B-I, C-IV, D-II

(D) A-IV, B-II, C-I, D-III

Correct Answer: (C) A-III, B-I, C-IV, D-II

Solution:

We need to match the items in Column I with those in Column II based on the definitions:

- Autotrophs: These are organisms that produce their own food, such as plants. They are capable of photosynthesis to synthesize food. So, A-III (Autotrophs - Plants).
- Heterotrophs: These are organisms that cannot produce their own food and depend on other organisms for nutrition, such as animals. So, B-I (Heterotrophs - Animals).
- Parasite: A parasite is an organism that lives in or on another organism (host) and derives benefit at the host's expense, such as the mosquito. So, C-IV (Parasite - Mosquito).
- Saprotrophs: These are organisms that obtain nutrients by decomposing organic matter, such as fungi. So, D-II (Saprotrophs - Fungi).

Thus, the correct matches are:

A-III, B-I, C-IV, D-II.

Quick Tip

Autotrophs make their own food (plants), while heterotrophs depend on other organisms (fungi). Parasites harm other organisms (mosquitoes), and saprotrophs feed on decaying matter.

140. Tiny pores present on the surface of leaves through which carbon dioxide is taken in is called as:

- (A) Stomata
- (B) Guard cell
- (C) Chlorophyll
- (D) Cytoplasm

Correct Answer: (A) Stomata

Solution:

The stomata are small pores on the surface of leaves that allow gases like carbon dioxide to enter the plant for photosynthesis. The guard cells control the opening and closing of stomata. Chlorophyll is a pigment involved in photosynthesis, while cytoplasm is a part of the cell.

Thus, the correct answer is (A) Stomata.

Quick Tip

Stomata are the pores through which plants exchange gases. They play a key role in photosynthesis. Guard cells regulate the stomatal openings.

141. Consider the following statements in respect of MS Word:

(A) To deselect text, one has to click on any area outside the selected area.

(B) To change the size of a word, one has to press the font style drop-down arrow.

Which of the above statements is/are correct?

(A) Only (A) is correct.

(B) Only (B) is correct.

(C) Both (A) and (B) are correct.

(D) Neither (A) nor (B) is correct.

Correct Answer: (A) Only (A) is correct.

Solution:

- (A) is correct: To deselect text in MS Word, you can click anywhere outside the selected text, which removes the selection.

- (B) is incorrect: To change the size of the text, one must use the font size drop-down arrow, not the font style drop-down arrow. The font style is used to change the font, while the font size is used to change the size of the text.

Thus, the correct answer is (A) Only (A) is correct.

Quick Tip

To deselect text, click outside the selected area, and to change the font size, use the font size drop-down arrow, not the font style drop-down arrow.

142. Match the following Column I with Column II.

Column I	Column II
Hard disk	I. Input device
Monitor	II. Processor
Microphone	III. Storage
CPU	IV. Output device
(A) A-II, B-IV, C-III, D-I	
(B) A-III, B-IV, C-I, D-II	
(C) A-I, B-III, C-II, D-IV	
(D) A-II, B-I, C-IV, D-III	

Correct Answer: (B) A-III, B-IV, C-I, D-II

Solution:

We need to match the items in Column I with those in Column II based on their functions:

- Hard disk: The hard disk is a storage device, used for storing data permanently. So, A-III (Hard disk - Storage).

- Monitor: A monitor displays the output of a computer's processing and provides the user with visual feedback. So, B-IV (Monitor - Output device).

- Microphone: A microphone is an input device used to record sound or input voice into the computer. So, C-I (Microphone - Input device).

- CPU (Central Processing Unit): The CPU is the processor that performs calculations and processing operations on data. It is the brain of the computer. So, D-II (CPU - Processor).

Thus, the correct matches are:

A-III, B-IV, C-I, D-II.

Quick Tip

Hard disks store data, monitors display output, microphones capture input, and CPUs process data.

143. Federalism in the Constitution of India refers to which of the following?

- (A) All adult (18 years and above) citizens of India have the right to vote irrespective of their social and economic backgrounds.
- (B) India does not officially promote any one religion as the state religion.
- (C) Existence of more than one level of government in India.
- (D) Three organs of government in India are - the legislature, the executive, and the judiciary.

Correct Answer: (C) Existence of more than one level of government in India.

Solution:

Federalism in India refers to the division of powers between the central government and the state governments. The Constitution of India establishes a federal structure with more than one level of government, which includes the Union (Central) government and the state governments. This is the essence of federalism, ensuring that different levels of government function independently in certain areas.

- (A) refers to the fundamental right to vote, not federalism.
- (B) refers to the secular nature of the state, which is separate from federalism.
- (D) describes the separation of powers, which is related to the structure of the government but not directly to federalism.

Thus, the correct answer is (C) Existence of more than one level of government in India.

Quick Tip

Federalism in India means the existence of multiple levels of government: central, state, and local.

144. Which among the following statements is NOT correct about the Rajya Sabha?

- A. It is the representative of the States of India in the Parliament.**
- B. A legislation cannot be initiated in the Rajya Sabha.**
- C. 12 members to the Rajya Sabha are nominated by the President of India.**
- D. The members of the Rajya Sabha are elected by the Judges of the Supreme Court of India and the State High Courts.**
- (A) A and B only

- (B) B and C only
- (C) A and C only
- (D) B and D only

Correct Answer: (D) B and D only

Solution:

- (A) is correct: The Rajya Sabha represents the States and Union Territories of India.
 - (B) is incorrect: The Rajya Sabha can initiate legislation, although certain types of bills (like money bills) can only be introduced in the Lok Sabha.
 - (C) is correct: 12 members of the Rajya Sabha are nominated by the President for their contributions to various fields like literature, science, art, etc.
 - (D) is incorrect: Members of the Rajya Sabha are elected by members of the State Legislative Assemblies and by members of the Legislative Assemblies of Union Territories, not by the Judges of the Supreme Court or State High Courts.
- Thus, the correct answer is (D) B and D only.

Quick Tip

The Rajya Sabha is the upper house of Parliament and is composed of representatives elected by State legislatures. Members are not elected by judges.

145. Which of the following was the first State in India to introduce the midday meal scheme in all government elementary schools to provide children with cooked lunch?

- (A) Andhra Pradesh
- (B) Tamil Nadu
- (C) Kerala
- (D) Karnataka

Correct Answer: (B) Tamil Nadu

Solution:

The midday meal scheme was first introduced in Tamil Nadu in 1920s to provide free meals to children, improving their nutrition and encouraging school attendance. Later, this scheme was adopted by other states in India as well.

Thus, the correct answer is (B) Tamil Nadu.

Quick Tip

Tamil Nadu was the first state to introduce the midday meal scheme, which has since been expanded to other states.

146. Chaudhary Devi Lal led a movement called Nyaya Yudh' and formed which new party among the following?

- (A) Nationalist Congress Party
- (B) Bahujan Samaj Party
- (C) Janta Dal
- (D) Lok Dal

Correct Answer: (D) Lok Dal

Solution:

Chaudhary Devi Lal led the movement known as Nyaya Yudh and formed the Lok Dal in 1979. It was primarily formed to address issues related to social justice and promote the welfare of the rural population, especially the farmers.

Thus, the correct answer is (D) Lok Dal.

Quick Tip

Lok Dal was formed by Chaudhary Devi Lal to give voice to the rural and agricultural sectors of India.

147. When was the office memorandum, reserving 27 percent of the vacancies in civil posts and services under the Government of India for the socially and educationally backward classes (SEBC), issued by the Government of India?

- (A) 1990
- (B) 1992
- (C) 1995
- (D) 1998

Correct Answer: (A) 1990

Solution:

The Government of India issued an office memorandum in 1990 reserving 27% of vacancies in civil services for the socially and educationally backward classes (SEBC). This landmark decision was a significant move in India's affirmative action policy.

Thus, the correct answer is (A) 1990.

Quick Tip

The 1990 office memorandum reserved 27% of vacancies for SEBC, aimed at enhancing social and educational equity.

148. What is known as Fixed Capital?

- (A) Land and other natural resources
- (B) Tools, machines and buildings
- (C) Raw material and money in hand
- (D) Educated/uneducated workers

Correct Answer: (B) Tools, machines and buildings

Solution:

Fixed capital refers to long-term assets that are used to produce goods and services over a long period. These include tools, machines, and buildings that are essential for production in an economy. Unlike raw materials, which are consumed during production, fixed capital is used repeatedly in the production process.

Thus, the correct answer is (B) Tools, machines and buildings.

Quick Tip

Fixed capital includes physical assets like machinery, equipment, and buildings, which contribute to production over time.

149. The Trade Policy Reforms are aimed at which of the following:

A. Dismantling quantitative restrictions on import and exports

B. Reduction of tariff rates

C. Removal of licensing procedures for imports

(A) A and B only

(B) B and C only

(C) A and C only

(D) A, B and C

Correct Answer: (D) A, B and C

Solution:

The Trade Policy Reforms initiated by India in the 1990s focused on several aspects aimed at liberalizing and modernizing the economy:

- Dismantling quantitative restrictions on imports and exports to promote free trade.
- Reduction of tariff rates to encourage international trade and reduce the protectionist measures.
- Removal of licensing procedures for imports to facilitate easier access to global markets.

Thus, the correct answer is (D) A, B and C.

Quick Tip

Trade policy reforms in India were aimed at enhancing global trade by removing barriers like tariffs, licenses, and import restrictions.

150. A "Perspective Plan" spelling out some general goals as well as specific economic objectives to be achieved by the government, is for which of the following period of

time?

- (A) 1 year
- (B) 3 years
- (C) 20 years
- (D) 25 years

Correct Answer: (C) 20 years

Solution:

A Perspective Plan is a long-term planning document that outlines the broad objectives and directions for economic development. In India, the Perspective Plan typically spans over a 20-year period, setting the direction for various economic activities and national goals.

Thus, the correct answer is (C) 20 years.

Quick Tip

The Perspective Plan sets long-term economic goals, often over 20 years, to guide national policy and development.