

CAT 2016 VARC Slot 1 Question Paper with Solutions

Time Allowed :3 Hours	Maximum Marks :300	Total questions :100
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. **Duration of Section:** 40 Minutes
2. **Total Number of Questions:** 22 Questions (as per latest pattern, may vary slightly)
3. **Section Covered:** Quantitative Aptitude (QA)
4. **Type of Questions:**
 - Multiple Choice Questions (MCQs)
 - Type In The Answer (TITA) Questions – No options given, answer to be typed in
5. **Marking Scheme:**
 - +3 marks for each correct answer
 - -1 mark for each incorrect MCQ
 - No negative marking for TITA questions
6. **Syllabus Coverage:** Arithmetic, Algebra, Geometry, Number System, Modern Math, and Mensuration
7. **Skills Tested:** Numerical ability, analytical thinking, and problem-solving

1. Arrange the sentences A, B, C, and D to form a logical sequence between sentences 1 and 6.

1. Amount of published information available varies widely by industry.

A. Unfortunately for the researcher, many industries do not meet these criteria, and there may be little published information available.

B. Generally, the problem the researcher will face in using published data for analysing an economically meaningful industry is that they are too broad or too arranged to fit the industry.

C. However, it is always possible to gain some important information about an industry from published sources and these sources should be aggressively pursued.

D. Larger the industry, the older it is, and the slower the rate of technological change, better is the available published information.

6. If a researcher starts a searching for data with this reality in mind, the uselessness of broad data will be better recognized and the tendency to give up will be avoided.

Solution:

Step 1: Sentence 2 introduces the topic that the amount of published information varies by industry. The next sentence should logically explain or elaborate on this variation.

Step 2: Sentence D explains why the information varies, stating that larger, older industries with slower technological change have better published information. This makes D the logical continuation of sentence 2.

Step 3: Sentence B discusses the problem researchers face with published data being too broad or misaligned, connecting to D by elaborating on the challenges due to industry characteristics.

Step 4: Sentence A continues the idea from B, explaining that many industries do not meet the criteria (from D), resulting in limited published information.

Step 5: Sentence C introduces a solution with "however," suggesting that despite the challenges, pursuing published sources is still valuable, leading to sentence 6, which advises researchers to recognize the limitations and persist.

Step 6: The sequence BDAC forms a coherent paragraph: variation (2), reasons for variation (D), problems faced (B), limitation due to criteria (A), solution (C), and advice (6).

Verification: Other options like DABC disrupt the flow (e.g., A after D jumps abruptly to

limitations without explaining the problem), and CDBA starts with a solution prematurely.

Quick Tip

Look for logical flow: start with the cause (D), then the problem (B, A), and finally the solution (C) to connect sentences 1 and 6 smoothly.

2. Arrange the sentences A, B, C, and D to form a logical sequence between sentences 1 and 6.

1. The main source of power in industrial undertaking is electricity.

A. Electricity from water also requires enormous river valley projects involving huge expenditure.

B. In contrast, electricity from atomic power stations will result in a tremendous saving in expenditure.

C. Besides, the mineral resources of the world required for generation of electricity are being rapidly depleted.

D. But the production of electricity needs huge quantities of coal.

6. The installation of atomic plants will help in meeting the shortage of these resources.

Solution:

Step 1: Sentence 4 establishes electricity as the main power source for industries. The next sentence should logically expand on how electricity is produced or the challenges associated with it.

Step 2: Sentence D, starting with "but," introduces a challenge: electricity production requires huge quantities of coal, making it a natural continuation of sentence 4.

Step 3: Sentence A continues the discussion of electricity production methods, mentioning that electricity from water (hydropower) requires costly river valley projects, adding another challenge.

Step 4: Sentence C, starting with "besides," adds another issue: the depletion of mineral resources (like coal) needed for electricity generation, building on D and A.

Step 5: Sentence B, starting with "in contrast," offers a solution by introducing atomic power stations as a cost-saving alternative, leading to sentence 6, which advocates for atomic

plants to address resource shortages.

Step 6: The sequence DABC creates a logical flow: electricity's importance (4), coal consumption issue (D), hydropower cost issue (A), resource depletion (C), atomic power solution (B), and conclusion (6).

Verification: Other sequences like BDAC disrupt the flow (e.g., B's solution appears too early), and CDAB starts with resource depletion without context.

Quick Tip

Identify contrast words like "but," "besides," and "in contrast" to determine the sequence of problem-solution in paragraph arrangement questions.

3. Arrange the sentences A, B, C, and D to form a logical sequence between sentences 1 and 6.

1. Intensity of competition in an industry is neither a matter of coincidence nor bad luck.

A. The collective strength of these forces determines the ultimate profit potential in the industry where profit potential is measured in terms of long run returns on invested capital.

B. Rather, competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors.

C. Not all industries have the same potential.

D. Beyond the behavior of current competitors, there are five basic competitive forces which determine the intensity of competition in an industry.

6. Different industries can sustain different levels of profitability depending upon these forces.

Solution:

Step 1: Sentence 7 introduces the idea that competition in an industry is not random. The next sentence should explain why or how competition arises.

Step 2: Sentence B, starting with "rather," directly refutes the idea of coincidence, stating that competition is rooted in the industry's economic structure, making it a logical follow-up to sentence 7.

Step 3: Sentence D elaborates on B by specifying that competition depends on five basic competitive forces, providing a detailed explanation of the economic structure.

Step 4: Sentence A explains that these forces (from D) determine the industry's profit potential, connecting the competitive forces to profitability.

Step 5: Sentence C states that not all industries have the same potential, setting up sentence 6, which concludes that different industries sustain different profitability levels due to these forces.

Step 6: The sequence BDAC flows logically: competition is not random (7), rooted in economic structure (B), defined by five forces (D), which determine profit potential (A), varying by industry (C), leading to different profitability levels (6).

Verification: Options like DABC place D before B, disrupting the explanation of economic structure, and ABCD starts with profit potential prematurely.

Quick Tip

Use keywords like "rather" and "these forces" to identify the logical progression from general statement to specific details in paragraph arrangement.

4. A number of sentences are given below which, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. However, one of the statements is illogically placed. Choose the illogically placed sentence from among the five given choices so that the remaining four can construct a coherent paragraph.

A. It is turning off the tap.

B. And with no consensus of the exit policy, the government is damned if it supports loss-making units and damned if it doesn't.

C. The private sector did the same in the past because securing legal sanction for closure was virtually impossible.

D. After sûrement years of funding the losses of public sector companies, the government is doing the unthinkable.

E. Private sector and public sector companies act in a similar fashion when in crisis.

Solution:

Step 1: The paragraph should discuss the government's actions regarding public sector companies and form a coherent narrative. We need to identify the sentence that disrupts this coherence.

Step 2: Sentence D introduces the topic: the government is doing something drastic (the unthinkable) after funding losses of public sector companies. This sets the stage.

Step 3: Sentence A specifies the unthinkable action: "turning off the tap" (stopping funding), logically following D.

Step 4: Sentence C explains that the private sector faced similar issues in the past due to closure difficulties, providing historical context to the government's action.

Step 5: Sentence B concludes by discussing the government's dilemma due to lack of consensus on exit policy, wrapping up the paragraph.

Step 6: Sentence E, which states that private and public sector companies act similarly in crises, is too general and does not fit the specific narrative about the government's actions and its consequences. It disrupts the flow of D-A-C-B, which focuses on the government's funding decision and its implications.

Verification: The sequence D-A-C-B forms a coherent paragraph: government's drastic action (D), what the action is (A), historical context (C), and current dilemma (B). E introduces an unrelated comparison.

Quick Tip

In odd-sentence-out questions, look for the sentence that is too broad or unrelated to the specific narrative formed by the other sentences.

5. A number of sentences are given below which, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. However, one of the statements is illogically placed. Choose the illogically placed sentence from among the five given choices so that the remaining four can construct a coherent paragraph.

A. Trade protocols were signed, the dollar as the medium of exchange was ignored, trade was denominated in rupees and the exchange rate between the two countries was to be fixed outside the ambit of free markets.

- B. A young India, some years after independence fashioning her foreign policy of nonalignment, found it prudent to stay close to the former Soviet Union.
- C. Therefore it led to the escalation of cold war between Soviet Union and the U.S.A.
- D. Once upon a time there was a superpower named Soviet Union that attracted nations apprehensive of the global aspirations of the other superpower, the U.S.A.
- E. One way of doing this was to evolve a bilateral relations in trade that could be called upon provide a buffer against the arm-twisting by the U.S.A

Solution:

Step 1: The paragraph should narrate India's relationship with the Soviet Union post-independence, focusing on trade and foreign policy. We need to find the sentence that does not fit this narrative.

Step 2: Sentence D sets the context by introducing the Soviet Union as a superpower attracting nations wary of the U.S.A., a logical starting point.

Step 3: Sentence B follows, explaining India's choice to align closely with the Soviet Union due to its nonalignment policy.

Step 4: Sentence E elaborates on how India achieved this closeness through bilateral trade relations to counter U.S. influence.

Step 5: Sentence A details the specifics of these trade protocols (e.g., using rupees, fixed exchange rates), concluding the narrative.

Step 6: Sentence C, which mentions the escalation of the Cold War, is irrelevant to the paragraph's focus on India's strategic trade relationship with the Soviet Union. It introduces a global consequence that does not connect to the specific narrative of D-B-E-A.

Verification: The sequence D-B-E-A forms a coherent paragraph: Soviet Union's role (D), India's alignment (B), method via trade (E), and trade details (A). C disrupts this by shifting focus to the Cold War.

Quick Tip

The odd sentence often shifts the topic (e.g., from India's policy to global politics) and doesn't contribute to the main narrative.

6. A number of sentences are given below which, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. However, one of the statements is illogically placed. Choose the illogically placed sentence from among the five given choices so that the remaining four can construct a coherent paragraph.

- A. There are also a larger number of Lebanese restaurants in Paris than there are in other European capital cities
- B. French Cordon Bleu cuisine is very expensive
- C. The number of French tourists eating in New York burger restaurants is very low
- D. Junk food is actually has high nutritional value when eaten in moderation
- E. There are an unusually large number of American tourists in Paris who eat at burger joints

Solution:

Step 1: The paragraph should describe an encounter with a young American and his perspective, forming a personal narrative. We need to identify the sentence that disrupts this coherence.

Step 2: Sentence C introduces the encounter: a young American visiting to discuss a book, setting the scene.

Step 3: Sentence D provides background about the American, identifying him as the son of an alcoholic vagrant, adding context to his identity.

Step 4: Sentence B shares what he said: his generation believes it has no future, giving insight into his perspective.

Step 5: Sentence A concludes with the narrator's reaction, noting familiarity with such sentiments, wrapping up the interaction.

Step 6: Sentence E, which broadly discusses alcohol's impact on the family, is too general and shifts focus from the specific encounter to a wider issue, disrupting the narrative flow of C-D-B-A.

Verification: The sequence C-D-B-A forms a coherent paragraph: encounter (C), background (D), his statement (B), narrator's reaction (A). E introduces an unrelated theme about alcohol's impact.

Quick Tip

The odd sentence often generalizes a specific narrative (e.g., from a personal encounter to a broad issue like alcoholism).

7. Evidence has been presented that the unconscious mind, still viewed by many psychological scientists as the shadow of a “real” conscious mind, is identifiably more deliberate, action oriented and complex than its conscious counterpart. Furthermore researchers have proven that the mind is incredibly efficient at extracting meaning from stimuli of which one is not consciously aware. The claims above are made on conclusive experimentations in which test subjects who were allowed to sleep during a decision making process made more optimal decisions when compared to the subjects who were given the exact same amount of information but were not allowed to sleep, leading researchers to believe that rationality comes on the way of making a rational decision. Researchers explain that while the conscious mind can only follow strict rules, unconscious mind can handle and integrate a larger amount of information, explaining why it can make better decisions. Even more surprising than this unconscious mind’s ability is that the mental processes that drive such decision making are necessarily minimal and unsophisticated and do not require humongous amount of calories to make us arrive at the best decision whereas using conscious mind for complex decisions burns up a lot of energy, setting in fatigue, forcing the conscious mind to give up and leading to subconscious decisions. Overall, researchers agree that there is no need to have sleepless night pondering over a complex issue to resolve it when it can actually be solved more efficiently by snoring the night away.

(A) highlight the differences among psychologists regarding the importance of the unconscious mind in making complex decisions.

(B) contrast and compare the workings of the rationality with that of deliberate, action-oriented, and complex decision-making processes.

(C) prove that the unconscious mind is more effective than the conscious mind in complex decision-making.

(D) show that conscious mind is not that undependable as previously thought.

(E) ascertain that using conscious and unconscious minds together yield second-to-none judgements.

Solution:

Step 1: The passage discusses the unconscious mind's abilities, supported by experiments showing better decision-making when subjects sleep, compared to the conscious mind's limitations.

Step 2: The purpose is to demonstrate the unconscious mind's superiority in complex decision-making, as it can handle more information efficiently without fatigue, unlike the conscious mind.

Step 3: Option A is incorrect because the passage does not focus on differences among psychologists but on evidence supporting the unconscious mind.

Step 4: Option B is wrong as it emphasizes rationality versus decision-making processes, not the unconscious versus conscious mind.

Step 5: Option D is incorrect because the passage does not defend the conscious mind's reliability but critiques its limitations.

Step 6: Option E is wrong as the passage does not advocate using both minds together but highlights the unconscious mind's standalone effectiveness.

Verification: Option C aligns with the passage's focus on proving the unconscious mind's effectiveness in complex decisions through experimental evidence.

Quick Tip

Identify the passage's main argument (unconscious mind's superiority) to select the purpose that matches the evidence presented.

8. French cuisine is highly regarded all over the world. Yet in Paris there are more American restaurants selling burgers and fries (which many people now class as junk food) than there are in any other European capital city. Obviously the French are very fond of junk food, and are not too proud to eat it. Which of the following, if true, would most weaken the author's contention?

- (A) There are also a larger number of Lebanese restaurants in Paris than there are in other European capital cities.
- (B) French Cordon Bleu cuisine is very expensive.
- (C) The number of French tourists eating in New York burger restaurants is very low.
- (D) Junk food actually has high nutritional value when eaten in moderation.
- (E) There are an unusually large number of American tourists in Paris who eat at burger joints.

Solution:

Step 1: The author's contention is that the French are fond of junk food, inferred from many American restaurants (e.g., burger joints) in Paris.

Step 2: To weaken this, we need evidence that the French are not the primary consumers of junk food at these restaurants.

Step 3: Option E states that American tourists, not French locals, eat at these burger joints, suggesting the restaurants cater to tourists, not French preferences, thus weakening the contention.

Step 4: Option A (Lebanese restaurants) is irrelevant to junk food consumption.

Step 5: Option B (expensive Cordon Bleu) does not address junk food preferences.

Step 6: Option C (French tourists in New York) is about behavior abroad, not in Paris, so it's less direct.

Step 7: Option D (nutritional value) does not negate the French eating junk food.

Verification: Option E directly undermines the assumption that French people frequent American restaurants.

Quick Tip

To weaken a claim, find an alternative explanation for the evidence (e.g., tourists, not locals, drive restaurant popularity).

9. In research designed to investigate the possibility of animals developing friendship with other, unrelated, members of their species, a group of 29 chimpanzees were reared together for 15 years. At the end of that time the chimps were presented with two

options for obtaining food: press a lever and feed themselves, or press another identical lever and feed themselves, and at the same time deliver food to the chimp next door. (The chimps were able to see each other). The researchers found that the chimps were no more likely to choose the lever that fed a neighbour. The researchers concluded that the chimps had no concept of friendship. However, one critic has suggested that the animals were in an artificial environment from which little can be concluded, and that, at the least, the test ought to have involved the animals being able to touch.

What role do the parts in boldface play in the argument above?

- (A) The first is a position that the critic opposes. The second is a position that the critic supports.
- (B) The first is an observation that supports the researcher's position. The second is an observation that opposes the researcher's position.
- (C) The first is a finding on which the researchers base their conclusion. The second is a suggestion that might cast doubt on that finding.
- (D) The first is an observation that supports the critic's conclusion. The second is the critic's conclusion.
- (E) The first is part of the evidence that the critic disputes. The second is a suggestion that the researchers do not accept.

Solution:

Step 1: The first boldface part states that chimps were no more likely to choose the lever feeding a neighbor, a finding from the research.

Step 2: The researchers use this finding to conclude that chimps lack a concept of friendship.

Step 3: The second boldface part is the critic's suggestion that the artificial environment limits the conclusion's validity and proposes a test with physical touch.

Step 4: Option C correctly identifies the first as the finding supporting the researchers' conclusion and the second as a suggestion casting doubt on that finding.

Step 5: Option A is incorrect because the first is a finding, not a position, and the critic does not oppose it but questions its interpretation.

Step 6: Option B is wrong as the second is a suggestion, not an observation.

Step 7: Option D is incorrect because the first supports the researchers, not the critic, and the

second is not a conclusion.

Step 8: Option E is wrong as the critic does not dispute the evidence itself but its interpretation due to the environment.

Verification: Option C matches the roles: finding (first) and doubt-casting suggestion (second).

Quick Tip

In boldface questions, determine if the part is evidence, conclusion, or a counterpoint, and check how it relates to the main argument.

Passage: (Q10 - Q15)

A conservation problem equally as important as that of soil erosion is the loss of soil fertility. Most agriculture was originally supported by the natural fertility of the soil; and, in areas in which soils were deep and rich in minerals, farming could be carried on for many years without the return of any nutrients to the soil other than those supplied through the natural breakdown of plant and animal wastes. In river basins, such as that of the Nile, annual flooding deposited a rich layer of silt over the soil, thus restoring its fertility. In areas of active volcanism, such as Hawaii, soil fertility has been renewed by the periodic deposition of volcanic ash. In other areas, however, natural fertility has been quickly exhausted. This is true of most forest soils, particularly those in the humid tropics. Because continued cropping in such areas caused a rapid decline in fertility and therefore in crop yields, fertility could be restored only by abandoning the areas and allowing the natural forest vegetation to return. Over a period of time, the soil surface would be rejuvenated by parent materials, new circulation channels would form deep in the soil, and the deposition of forest debris would restore minerals to the topsoil. Primitive agriculture in such forests was of shifting nature: areas were cleared of trees and the woody material burned to add ash to the soil; after a few years of farming, the plots would be abandoned and new sites cleared. As long as populations were sparse in relation to the area of forestland, such agricultural methods did little harm. They could not, however, support dense populations or produce large quantities of surplus foods.

Starting with the most easily depleted soils, which were also the easiest to farm, the practice of using various fertilizers was developed. The earliest fertilizers were organic manures, but later, larger yields were obtained by adding balanced combinations of those nutrients (e.g. potassium, nitrogen, phosphorus and calcium) that crop plants require in greatest quantity. Because high yields are essential, most modern agriculture depends upon the continued addition of chemical fertilizers to the soil. Usually these substances are added in mineral form, but nitrogen is often added as urea, an organic compound.

Early in agricultural history, it was found that the practice of growing the same crop year after year in a particular plot of ground not only caused undesirable changes in the physical structure of the soil, but also drained the soil of its nutrients. The practice of crop rotation was discovered to be a useful way to maintain the condition of the soil, and also to prevent the buildup of those insects and other plant pests that are attracted to a particular kind of crop. In rotation systems, a grain crop is often grown the first year, followed by a leafy vegetable crop in the second year, and pasture crop in the third. The last usually contains legumes (e.g. clover, alfalfa), because such plants can restore nitrogen to the soil through the action of bacteria that live in nodules on their roots.

In irrigation agriculture, in which water is brought in to supply the needs of crops in an area with insufficient rainfall, a particular soil-management problem that develops is the salinization (concentration of salts) of the surface soil. This most commonly results from inadequate drainage of the irrigated land; because the water cannot flow freely, it evaporates, and the salts dissolved in the water are left on the surface of the soil. Even though the water does not contain a large concentration of dissolved salts, the accumulation over the years can be significant enough to make the soil unsuitable for crop production. Effective drainage solves the problem; in many cases, drainage canals must be constructed, and drainage tiles must be laid beneath the surface of the soil. Drainage also requires the availability of an excess of water to flush the salts from the surface soil. In certain heavy soils with poor drainage, this problem can be quite severe; for example, large areas of formerly irrigated land in the Indus basin, in the Tigris Euphrates region, in the Nile Basin, and in the Western United States, have been seriously damaged by salinization.

10. The areas most prone to salinization are

(A) those irrigated with well-water.

- (B) those in which crop rotation is not practiced.
- (C) sub-tropical forests.
- (D) flat land irrigated from reservoirs.

Correct Answer: (D)

Solution:

Step 1: The passage states that salinization occurs in irrigated lands with inadequate drainage, where water evaporates, leaving salts on the soil surface.

Step 2: It highlights severe cases in flat lands like the Indus, Tigris-Euphrates, Nile basins, and the Western U.S., often irrigated from reservoirs.

Step 3: Option D (flat land irrigated from reservoirs) matches the passage's description of areas prone to salinization due to poor drainage.

Step 4: Option A (well-water) is not mentioned as a specific cause of salinization.

Step 5: Option B (no crop rotation) is unrelated to salinization in the passage.

Step 6: Option C (sub-tropical forests) refers to areas with exhausted fertility, not salinization.

Verification: Flat lands with reservoir irrigation align with the passage's examples of salinization-prone areas.

Quick Tip

Focus on specific details in the passage (e.g., flat lands, reservoirs) to identify conditions linked to the problem described.

11. The most appropriate title to this passage is

- (A) Problems of soil erosion
- (B) Agriculture in Volcanic islands
- (C) The importance of chemical fertilizers
- (D) Causes of and remedies of soil-infertility

Correct Answer: (D)

Solution:

Step 1: The passage discusses the loss of soil fertility as a key conservation problem, comparable to soil erosion.

Step 2: It explains causes like natural fertility exhaustion (e.g., in humid tropical forests) and salinization in irrigated lands.

Step 3: It also describes remedies like crop rotation, organic manures, chemical fertilizers, and drainage systems to restore fertility.

Step 4: Option D (Causes of and remedies of soil-infertility) captures both the causes (exhaustion, salinization) and remedies (fertilizers, drainage) discussed.

Step 5: Option A (soil erosion) is mentioned but not the main focus.

Step 6: Option B (volcanic islands) is a minor example, not the central theme.

Step 7: Option C (chemical fertilizers) covers only one remedy, not the full scope.

Verification: Option D best summarizes the passage's focus on soil infertility's causes and solutions.

Quick Tip

Choose a title that encompasses both the problem (causes) and solutions discussed in the passage, not just a single aspect.

12. Natural fertility exhausts most quickly in

- (A) river valley lands
- (B) humid tropical forests
- (C) volcanic areas
- (D) lands near urban areas

Correct Answer: (B)

Solution:

Step 1: The passage states that natural fertility is quickly exhausted in most forest soils, particularly in humid tropical forests.

Step 2: It explains that continued cropping in these areas leads to rapid fertility decline, requiring abandonment for natural restoration.

Step 3: Option B (humid tropical forests) directly matches the passage's emphasis on rapid fertility exhaustion in these regions.

Step 4: Option A (river valley lands) is incorrect as the passage cites the Nile's annual flooding as restoring fertility.

Step 5: Option C (volcanic areas) is wrong because volcanic ash renews fertility, as seen in Hawaii.

Step 6: Option D (lands near urban areas) is not mentioned in the passage.

Verification: Humid tropical forests are explicitly identified as losing fertility fastest.

Quick Tip

Pinpoint the specific region or condition highlighted in the passage for fertility loss to avoid distractors like volcanic areas.

13. The factor that can restore fertility to the soil not mentioned in the passage is

- (A) alluvium brought by rivers
- (B) bacterial action
- (C) fertilizer fixation through lightning
- (D) organic manure

Correct Answer: (C)

Solution:

Step 1: The passage lists factors restoring soil fertility: natural breakdown of plant/animal wastes, river silt (alluvium), volcanic ash, forest debris, organic manures, and chemical fertilizers.

Step 2: Option A (alluvium) is mentioned (e.g., Nile's silt deposits).

Step 3: Option B (bacterial action) is implied in the natural breakdown of wastes, which involves bacteria.

Step 4: Option D (organic manure) is explicitly mentioned as an early fertilizer.

Step 5: Option C (fertilizer fixation through lightning) is not mentioned anywhere in the passage.

Step 6: Lightning can fix nitrogen in the soil, but the passage does not reference this process.

Verification: Option C is the only factor not discussed in the passage.

Quick Tip

Eliminate options explicitly or implicitly mentioned in the passage to find the one not covered.

14. Crop rotation helps to I. increase the farmer's seasonal income. II. preserve soil condition. III. desalinize the soil. IV. destroy pests.

- (A) I, II, III IV
- (B) I, II IV only
- (C) II IV only
- (D) II, III IV only

Correct Answer: (C)

Solution:

Step 1: The passage mentions crop rotation as a remedy for soil infertility but does not detail its specific benefits.

Step 2: Generally, crop rotation is known to preserve soil condition (II) by maintaining nutrient balance and to destroy pests (IV) by disrupting their life cycles.

Step 3: Desalinization (III) is addressed in the passage through drainage and flushing, not crop rotation.

Step 4: Increasing seasonal income (I) is not a direct benefit of crop rotation mentioned in the passage or generally associated with it.

Step 5: Thus, only II (preserve soil condition) and IV (destroy pests) are correct.

Step 6: Option C (II IV only) matches these benefits.

Verification: Options including I or III are incorrect based on the passage and standard agricultural knowledge.

Quick Tip

Use general knowledge to supplement passage information for questions about well-known concepts like crop rotation.

15. One of the characteristics of agricultural land in Nile basin is

- (A) it contains a lot of bacteria.
- (B) it consists of heavy soil with poor drainage properties.
- (C) the Nile water contains an excess of salts.
- (D) it contains nutritive minerals.

Correct Answer: (B)

Solution:

Step 1: The passage states that in certain heavy soils with poor drainage, like those in the Nile basin, salinization is severe due to water evaporation leaving salts.

Step 2: Option B (heavy soil with poor drainage) directly matches this description.

Step 3: Option A (bacteria) is not mentioned as a characteristic of Nile basin soil.

Step 4: Option C (excess salts in Nile water) is incorrect; the passage implies salts accumulate from irrigation, not that Nile water inherently contains excess salts.

Step 5: Option D (nutritive minerals) is true due to silt deposits, but the question asks for a characteristic linked to salinization, making B more specific.

Verification: The passage explicitly links the Nile basin to heavy soils with poor drainage causing salinization.

Quick Tip

Focus on characteristics tied to the passage's context (e.g., salinization) rather than general traits like nutritive minerals.

Passage: (Q16 - Q20)

Scientism has left humanity in our technical mastery of inanimate nature, but improvised us in our quest for an answer to the riddle of the universe and of our existence in it. Scientism has done worse than that with respect to our status as social beings, that is, to our life with our fellow human beings. The quest for the technical mastery of social life, comparable to our mastery over nature, did not find scientism at a loss for an answer: reason suggested that physical nature and social life were fundamentally alike and therefore proposed identical

methods for their domination. Since reason in the form of causality reveals itself most plainly in nature, nature became the model for the social world and the natural sciences the image of what the social sciences one day would be. According to scientism, there was only one truth, the truth of science, and by knowing it, humanity would know all. This was, however, a fallacious argument, its universal acceptance initiated an intellectual movement and a political technique which retarded, rather than furthered, human mastery of the social world. The analogy between the natural and social worlds is mistaken for two reasons. On the one hand human action is unable to model the social world with the same degree of technical perfection that is possible in the natural world. On the other hand, the very notion that physical nature is the embodiment of reason from which the analogy between natural and social worlds derives, is invalidated by modern scientific thought itself.

Physical nature, as seen by the practitioner of science consists of a multitude of isolated facts over which human action has complete control. We know that water boils at a temperature of 212 degrees Fahrenheit and, by exposing water to this temperature, we can make it boil at will. All practical knowledge of physical nature and all control over it are essentially of the same kind.

Scientism proposed that the same kind of knowledge and of control held true for the social world. The search for a single cause, in the social sciences, was but a faithful copy of the method of the physical sciences. Yet in the social sphere, the logical coherence of the natural sciences finds no adequate object and there is no single cause by the creation of which one can create a certain effect at will. Any single cause in the social sphere can entail an indefinite number of different effects, and the same effect can spring from an indefinite number of different effects, and the same effect can spring from an indefinite number of different causes.

16. The author's attitude towards the application of scientism to the social sciences is best described as one of

- (A) committed scrutiny
- (B) dismissal
- (C) criticism
- (D) approval

Correct Answer: (C)

Solution:

Step 1: The passage argues that applying scientism (using physical science methods) to social sciences is flawed, as social phenomena cannot be controlled like physical ones.

Step 2: The author calls scientism’s approach a “fallacious argument” that “retarded” progress, indicating a negative stance.

Step 3: Option C (criticism) aligns with the author’s negative evaluation of scientism’s application.

Step 4: Option A (committed scrutiny) suggests a neutral analysis, but the author is explicitly critical.

Step 5: Option B (dismissal) is too strong; the author critiques but does not completely reject scientism.

Step 6: Option D (approval) is opposite to the author’s view.

Verification: The passage’s tone and arguments clearly criticize scientism’s application to social sciences.

Quick Tip

Look for strong evaluative words (e.g., “fallacious,” “retarded”) to gauge the author’s attitude in reading comprehension questions.

17. According to the author, causes and effects in the social world are

- (A) unrelated to each other
- (B) difficult to identify or predict
- (C) subject to manipulation at will
- (D) reducible to a single cause for each effect

Correct Answer: (B)

Solution:

Step 1: The passage states that in the social sphere, a single cause can lead to multiple effects, and the same effect can arise from multiple causes, unlike the predictable causality in physical sciences.

Step 2: This suggests that causes and effects in the social world are complex and difficult to predict or identify precisely.

Step 3: Option B (difficult to identify or predict) matches this description.

Step 4: Option A (unrelated) is incorrect as the passage acknowledges relationships, just not singular ones.

Step 5: Option C (manipulation at will) is wrong; the passage says social effects cannot be controlled like physical ones.

Step 6: Option D (single cause) contradicts the passage's emphasis on multiple causes and effects.

Verification: The passage's focus on the complexity of social causality supports option B.

Quick Tip

In social science passages, look for statements about complexity or unpredictability to identify key differences from physical sciences.

18. Which of the following statements about scientism is best supported by the passage?

- (A) Scientism provides the basis for mastery of the social world
- (B) Scientism is only superficially concerned with cause-and-effect relationships
- (C) Scientism is poorly suited to explain social behaviour
- (D) Scientism is no longer applicable to the study of the natural sciences

Correct Answer: (C)

Solution:

Step 1: The passage criticizes scientism's attempt to apply physical science methods to social sciences, stating it "retarded" progress due to the flawed analogy between natural and social worlds.

Step 2: It argues that social phenomena lack the singular causality of physical sciences, making scientism unsuitable for explaining social behavior.

Step 3: Option C (poorly suited to explain social behaviour) aligns with this critique.

Step 4: Option A (mastery of social world) is incorrect as the passage denies scientism's effectiveness.

Step 5: Option B (superficially concerned) is wrong; scientism seeks causality but fails due to complexity.

Step 6: Option D (not applicable to natural sciences) is irrelevant as the passage focuses on social sciences.

Verification: Option C captures the passage’s argument about scientism’s inadequacy for social behavior.

Quick Tip

Choose the option that reflects the passage’s critique of a method’s limitations in a specific context (social sciences).

19. As used in the passage, the term ‘scientism’ can best be defined as

- (A) belief that the methods of the physical sciences can be applied to all fields of enquiry
- (B) faith that human beings can master their own physical limitations
- (C) desire to keep the social sciences separate from the physical sciences
- (D) opinion that scientists must take moral responsibility for their actions

Correct Answer: (A)

Solution:

Step 1: The passage defines scientism as the belief that physical nature and social life are fundamentally alike, proposing that physical science methods (causality) can dominate both.

Step 2: It states there is “only one truth, the truth of science,” applicable to all fields, including social sciences.

Step 3: Option A (methods of physical sciences applied to all fields) matches this definition.

Step 4: Option B (mastering physical limitations) is unrelated to the passage’s focus.

Step 5: Option C (separating sciences) contradicts scientism’s aim to unify methods.

Step 6: Option D (moral responsibility) is not mentioned in the passage.

Verification: Option A accurately reflects scientism’s core belief as described.

Quick Tip

For definition questions, look for the passage's explicit description of the term's application across fields.

20. In the passage, the author is most concerned with doing which of the following?

- (A) Upholding the primacy of reason over superstition
- (B) Attacking a particular approach to the social sciences
- (C) Describing a method for achieving control over human social behaviour
- (D) Demonstrating the superiority of the social sciences over the natural sciences

Correct Answer: (B)

Solution:

Step 1: The passage critiques scientism's application of physical science methods to social sciences, calling it a "fallacious argument" that hindered progress.

Step 2: The author's main concern is to challenge this specific approach, highlighting its flaws in explaining social behavior.

Step 3: Option B (attacking a particular approach to social sciences) aligns with this focus.

Step 4: Option A (reason over superstition) is irrelevant as superstition is not discussed.

Step 5: Option C (control over social behaviour) is incorrect; the passage denies such control is possible.

Step 6: Option D (superiority of social sciences) is wrong as the passage does not compare sciences' superiority.

Verification: Option B captures the author's critical focus on scientism's misapplication.

Quick Tip

Identify the author's primary action (e.g., critiquing) and target (e.g., scientism) to determine the passage's main concern.

21. The passage is most likely directed towards an audience of

- (A) geologists

- (B) astronauts
- (C) meteorologists interested in weather prediction
- (D) person with little technical knowledge of astronomy

Correct Answer: (D)

Solution:

Step 1: The passage explains Earth's motions (rotation, precession, nutation, orbit) using simple analogies (e.g., a spinning top, dumb-bell) and non-technical language.

Step 2: This suggests it targets readers without specialized astronomical knowledge.

Step 3: Option D (persons with little technical knowledge of astronomy) matches this approach.

Step 4: Option A (geologists) is incorrect as the passage focuses on astronomy, not geology.

Step 5: Option B (astronauts) implies technical expertise, which the passage avoids.

Step 6: Option C (meteorologists) is irrelevant as weather prediction is not discussed.

Verification: The passage's simple explanations indicate it's for a general audience, supporting option D.

Quick Tip

Simple language and everyday analogies suggest a passage is aimed at non-experts in the subject.

22. Which of the following best describes the main subject of the passage?

- (A) The various types of the Earth's motions
- (B) Past changes in the Earth's position
- (C) The moon's gravitational effect on the Earth
- (D) Oddities of the Earth's rotation of its axis

Correct Answer: (A)

Solution:

Step 1: The passage begins by stating that an observer could see the Earth engaged in various motions, then describes rotation, precession, nutation, and orbital motion.

Step 2: The main focus is on these different types of motions, not just one aspect.

Step 3: Option A (various types of Earth's motions) captures this comprehensive focus.

Step 4: Option B (past changes) is incorrect as the passage discusses current motions, not historical changes.

Step 5: Option C (moon's effect) is too narrow, covering only part of the discussion.

Step 6: Option D (rotation oddities) focuses only on one motion, not the variety.

Verification: Option A aligns with the passage's broad coverage of Earth's motions.

Quick Tip

The main subject is often introduced in the opening sentence and elaborated throughout the passage.

23. The passage indicates that a single cycle of which of the following motions is completed in the shortest period of time?

- (A) Nutation
- (B) Precession
- (C) The Earth's rotation on its axis
- (D) The movement around the hub of the Milky Way

Correct Answer: (C)

Solution:

Step 1: The passage lists time periods for Earth's motions: rotation on its axis (day and night, 24 hours), precession (25,800 years), nutation (18.6 years), and Milky Way orbit (200 million years).

Step 2: Comparing these, rotation on the axis (24 hours) is the shortest cycle.

Step 3: Option C (Earth's rotation on its axis) matches this.

Step 4: Option A (nutation, 18.6 years) is much longer.

Step 5: Option B (precession, 25,800 years) is even longer.

Step 6: Option D (Milky Way orbit, 200 million years) is the longest.

Verification: Rotation's 24-hour cycle is clearly the shortest period mentioned.

Quick Tip

Compare time periods directly from the passage to identify the shortest cycle in time-based questions.

24. Which of the following techniques does the author use in order to make the descriptions of motion clear? I. Comparison with familiar objects.

II. Reference of geometric forms.

III. Allusions to the works of other authors.

(a) I only

(b) II only

(c) I and II only

(d) II and III only

Solution:

To determine which techniques the author uses to explain the motion of the Earth, we need to carefully analyze the passage for the presence of each described technique. Let's break it down step by step:

1. Comparison with familiar objects (I):

- The author compares the Earth's wobble due to precession to an "ill-spin top". This comparison uses a familiar object, the spinning top, which most readers can visualize, thereby helping to clarify the concept of the Earth's wobble.

- This comparison allows the reader to imagine the Earth's motion more clearly because they can relate to the spinning top, which is a simple and commonly known object.

Since this comparison is explicitly mentioned in the passage, technique I is used.

2. Reference to geometric forms (II):

- The passage mentions the "ellipse" that the Earth follows in its journey around the Sun. The description explicitly refers to the "geometric shape" of the Earth's orbit, calling it an "ellipse". It also talks about the Earth's axis wobbling in a cone, which is a "geometrical shape".

- Additionally, the shape of the Earth's path is explained using a "mathematical/geometry-based" perspective, giving the reader a clear visualization of the

Earth's movement.

As this reference to geometric forms is clearly present, technique II is also used.

3. Allusions to the works of other authors (III): - The passage does not reference or allude to any works of other authors. There is no mention of any external figures, ideas, or theories from other sources. The description is entirely based on scientific facts and visualizations about the Earth's motion.

Therefore, technique III is not used.

Conclusion:

- The passage uses comparison with familiar objects (like the ill-spin top) and reference to geometric forms (like the ellipse and cone) to explain the Earth's motion.
- Since technique III is not mentioned, the correct answer is (c) I and II only.

Quick Tip

In questions about literary techniques or explanations in scientific passages, always look for comparisons to everyday objects and references to shapes or structures. These techniques help simplify complex ideas and make them more relatable to the reader.

Passage: Q25 - Q28

The connective tissues are heterogeneous group of tissues derived from the mesenchyme, a meshwork of stellate cells that develop in the middle layer of the early embryo. They have the general function of maintaining the structural integrity of organs, and providing cohesion and internal support for the body as a whole. The connective tissues include several types of fibrous tissue that vary only in their density and cellularity, as well as more specialized variants ranging from adipose tissue through cartilage to bone. The cells that are responsible for the specific function of an organ are referred to as its parenchyma, while the delicate fibrous meshwork that binds the cells together into functional units, the fibrous partitions or septa that enclose aggregations of functional units, and the dense fibrous capsule that encloses the whole organ, collectively make up its connective-tissue framework, or stroma. Blood vessels, both large and small, course through connective tissues, which is therefore closely associated with the nourishment of tissues and organs throughout the body. All nutrient materials and waste products exchanged between the organs and the blood must

traverse peri-vascular spaces occupied by connective tissue. One of the important functions of the connective – tissue cells is to maintain conditions in the extra-cellular spaces that favour this exchange

Some organs are suspended from the wall of a body cavity by thin sheets of connective tissues called mesenteries; others are embedded in adipose tissue a form of a connective tissue in which the cells are specialized for the synthesis and storage of energy-rich reserves of fat, or lipid. The entire body is supported from within by a skeleton composed of bone, a type of connective tissue endowed with great resistance to stress owing to its highly ordered, laminated structure and to its hardness, which results from deposition of mineral salts in its fibres and amorphous matrix. The individual bones of the skeleton are held firmly together by ligaments, and muscles are attached to bone by tendons, both of which are examples of dense connective tissue in which many fibre bundles are associated in parallel array to provide great tensile strength. At joints, the articular surfaces of the bones are covered with cartilage, a connective tissue with an abundant intercellular substance that gives it a firm consistency well adopted to permit smooth gliding movements between the opposed surfaces. The synovial membrane, which lines the margins of the joint cavity and lubricates and nourishes the joint surfaces, is also a form of connective tissue.

25. The passage has most probably been taken from a book on

- (A) neurology
- (B) nutrition
- (C) physiology
- (D) calisthenics

Correct Answer: (C)

Solution:

Step 1: The passage describes connective tissues (e.g., mesenteries, cartilage, ligaments) and their roles in supporting organs, bones, and joints in the body.

Step 2: This focus on bodily structures and their functions aligns with physiology, the study of how living organisms function.

Step 3: Option C (physiology) matches this description.

Step 4: Option A (neurology) is incorrect as the passage does not discuss the nervous

system.

Step 5: Option B (nutrition) is wrong as nutrient exchange is mentioned but not the main focus.

Step 6: Option D (calisthenics) relates to exercise, not tissue functions.

Verification: The detailed description of connective tissues' roles points to physiology.

Quick Tip

Match the passage's content to the field studying the described systems (e.g., body tissues = physiology).

26. Mesenteries are

- (A) adipose tissue in which some organs are embedded
- (B) referred to as parenchyma, and are responsible for specific functions of an organ
- (C) thin sheets from which some organs are suspended
- (D) cells through which blood flows

Correct Answer: (C)

Solution:

Step 1: The passage defines mesenteries as “thin sheets of connective tissues” from which some organs are suspended.

Step 2: Option C (thin sheets from which some organs are suspended) directly matches this definition.

Step 3: Option A (adipose tissue) is incorrect; adipose tissue is a different type of connective tissue for fat storage.

Step 4: Option B (parenchyma) is wrong as parenchyma refers to functional organ tissue, not connective tissue.

Step 5: Option D (cells for blood flow) is incorrect; blood flow occurs through peri-vascular spaces, not mesenteries.

Verification: The passage's explicit definition of mesenteries supports option C.

Quick Tip

Use the passage's exact wording for definitions to avoid confusion with related but distinct terms.

27. Through peri-vascular spaces exchange takes place between

- (A) blood and organs
- (B) cells and embryo
- (C) nutrients and waste products
- (D) septa and stroma

Correct Answer: (A)

Solution:

Step 1: The passage states that “all nutrient materials and waste products exchanged between the organs and the blood must traverse peri-vascular spaces.”

Step 2: This indicates that peri-vascular spaces facilitate exchange between blood and organs.

Step 3: Option A (blood and organs) matches this description.

Step 4: Option B (cells and embryo) is incorrect as embryos are not mentioned.

Step 5: Option C (nutrients and waste products) is misleading; these are exchanged, but the passage specifies between blood and organs.

Step 6: Option D (septa and stroma) is wrong as these are structural tissues, not involved in exchange.

Verification: The passage's focus on blood-organ exchange in peri-vascular spaces supports option A.

Quick Tip

Carefully note the entities involved in the process described (e.g., blood and organs) rather than the items exchanged.

28. Some instances of connective tissues are I. Cartilage II. Stroma III. Lipid IV. Synovia

- (A) I, II, III IV
- (B) I, III IV only
- (C) I, II, IV only
- (D) I and II only

Correct Answer: (C)

Solution:

Step 1: The passage mentions cartilage, ligaments, tendons, adipose tissue, and synovial membrane as examples of connective tissues.

Step 2: Cartilage (I) is explicitly listed as a connective tissue covering joint surfaces.

Step 3: Stroma (II) is implied as a connective tissue supporting organ functions, as per general biological knowledge.

Step 4: Synovia (IV) refers to the synovial membrane, explicitly called a connective tissue in the passage.

Step 5: Lipid (III) is incorrect; adipose tissue stores lipids, but lipid itself is not a tissue.

Step 6: Option C (I, II, IV only) includes cartilage, stroma, and synovia, excluding lipid.

Verification: The passage and biological knowledge confirm cartilage, stroma, and synovia as connective tissues.

Quick Tip

Distinguish between tissues (e.g., cartilage, synovia) and substances (e.g., lipid) when identifying examples.

29. In his study of suicide, Durkheim's main purpose was

- (A) to document that suicide can be explained without reference to the individual
- (B) to provide an explanation of the variation in the rate of suicide across societies
- (C) to categorize various types of suicides
- (D) to document that social behavior can be explained by social rather than psychological factors

Correct Answer: (A)

Solution:

Step 1: The passage states that Durkheim’s study aimed to show that suicide, an “allegedly individualistic” act, can be explained without reference to individuals, using social factors.

Step 2: Option A directly matches this purpose: documenting that suicide can be explained without individual reference.

Step 3: Option B (variation across societies) is a byproduct, not the main purpose.

Step 4: Option C (categorizing suicides) is a method used, not the primary goal.

Step 5: Option D (social vs. psychological factors) is related but less specific than A, which focuses on suicide explicitly.

Verification: The passage emphasizes explaining suicide via social factors, aligning with option A.

Quick Tip

The main purpose is often tied to the study’s unique contribution (e.g., social explanation of suicide) stated early in the passage.

30. Single adults not heavily involved with family life are more likely to commit suicide.

Durkheim categorized this as

- (A) anomic suicide
- (B) altruistic suicide
- (C) egoistic suicide
- (D) Both (B) and (C)

Correct Answer: (C)

Solution:

Step 1: The passage defines egoistic suicide as occurring when individuals lack sufficient social ties, using single adults not involved with family life as an example.

Step 2: Option C (egoistic suicide) matches this definition.

Step 3: Option A (anomic suicide) relates to disrupted social regulation, like economic crises, not lack of ties.

Step 4: Option B (altruistic suicide) occurs with excessive social integration, opposite to the scenario.

Step 5: Option D (both B and C) is incorrect as only egoistic suicide applies.

Verification: The passage explicitly links single adults' lack of ties to egoistic suicide.

Quick Tip

Match the scenario (e.g., lack of social ties) to the specific suicide type defined in the passage.

31. According to Durkheim, suicide rates within a social entity can be explained in terms of

- (A) absence of social ties
- (B) disruption of social regulation
- (C) nature of social integration
- (D) All of the above

Correct Answer: (D)

Solution:

Step 1: The passage describes three types of suicide: egoistic (due to absence of social ties), anomic (due to disrupted social regulation), and altruistic (due to excessive social integration).

Step 2: These factors collectively explain suicide rates within social entities.

Step 3: Option A (absence of social ties) covers egoistic suicide.

Step 4: Option B (disruption of social regulation) covers anomic suicide.

Step 5: Option C (nature of social integration) covers altruistic suicide (excessive integration).

Step 6: Option D (all of the above) includes all three factors mentioned in the passage.

Verification: All three factors are explicitly linked to suicide rates in the passage.

Quick Tip

When options list components of a theory, check if the passage includes all as explanations for the phenomenon.

32. Basing himself on his own indicators, Durkheim was

- (A) right on some counts, not others
- (B) vindicated on all counts
- (C) wrong but did not realize that he was right
- (D) substantially correct but formally wrong

Correct Answer: (B)

Solution:

Step 1: The passage states that Durkheim was successful on all three of his contentions: social behavior explained by social factors, suicide affected by integration/regulation, and sociology's scientific validity.

Step 2: Option B (vindicated on all counts) matches this statement.

Step 3: Option A (right on some counts) is incorrect as the passage claims success on all counts.

Step 4: Option C (wrong but thought right) contradicts the passage's claim of success.

Step 5: Option D (substantially correct but formally wrong) is not supported; the passage does not mention formal errors.

Verification: The passage explicitly states Durkheim's success on all indicators, supporting option B.

Quick Tip

Look for the passage's evaluation of the researcher's success (e.g., "successful on all counts") to confirm the answer.

33. To support his contentions, Durkheim relied on the following indicators

- (A) social behaviour is explicable predominantly through social factors

- (B) suicide is contingent upon the degree of regulation and interaction
- (C) recognizing sociology is to acknowledge that society is susceptible to scientific investigation
- (D) All of the above

Correct Answer: (D)

Solution:

Step 1: The passage lists Durkheim's three contentions supported by indicators: (1) social behavior explained by social factors, (2) suicide affected by integration/regulation, and (3) sociology's scientific validity.

Step 2: Option A matches contention (1).

Step 3: Option B matches contention (2).

Step 4: Option C matches contention (3).

Step 5: Option D (all of the above) includes all three indicators listed in the passage.

Step 6: The passage confirms Durkheim used all these indicators to support his study.

Verification: Option D encompasses all contentions explicitly mentioned.

Quick Tip

When asked about supporting points, ensure all listed options are directly stated in the passage's summary of the argument.