

CUET 2023 Environmental Studies Question Paper with Solutions

Time Allowed :60 minutes	Maximum Marks :200	Total Questions :50
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351. The Green Politics (Germany) is known to have the following pillars:

- A. Ecological Wisdom**
- B. Free Trade**
- C. Social Justice**
- D. Grassroot democracy**
- E. Non-violence**

Choose the correct answer from the options given below:

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

Correct Answer: (1) A, B, and E only

Solution: The Green Politics in Germany focuses on ecological wisdom, non-violence, free trade, and social justice. The pillars that align with these principles are A, B, and E. Thus, the correct answer is A, B, and E.

Quick Tip

In questions about political ideologies, focus on understanding the core principles associated with each ideology to identify the correct pillars.

352. Match List I with List II:

LIST I (Author)	LIST II (Book)
A. Barry Commoner	I. Turtle Island
B. Gary Snyder	II. The Poverty of Power
C. Rachel Carson	III. A Place on Earth
D. Wendell Berry	IV. Silent Spring

Choose the correct answer from the options given below:

- (1) A-III, B-IV, C-I, D-II
- (2) A-II, B-III, C-IV, D-I
- (3) A-II, B-I, C-IV, D-III
- (4) A-III, B-I, C-IV, D-II

Correct Answer: (3) A-II, B-I, C-IV, D-III

Solution: Barry Commoner is associated with the book "The Poverty of Power." Gary Snyder is known for "Turtle Island," Rachel Carson is linked to "Silent Spring," and Wendell Berry wrote "A Place on Earth." Thus, the correct matching is A-II, B-I, C-IV, D-III.

Quick Tip

In match-the-following questions, focus on the key facts associated with the authors and their works. Remember the major works they are best known for.

353. A practice of reserving resources for future generations without causing harm to the nature and other components of nature is a part of:

- (1) Deep Ecology
- (2) Shallow Ecology
- (3) Socialist Ecology
- (4) Sustainable Development

Correct Answer: (4) Sustainable Development

Solution: Sustainable development focuses on reserving resources for future generations

while ensuring that we do not harm the environment and its natural components. This aligns with the concept of sustainable development.

Quick Tip

Sustainable development aims to meet the needs of the present without compromising the ability of future generations to meet their own needs.

354. The National award in the name of Amrita Devi Bishnoi is given in the field of:

- (1) Water Conservation
- (2) Wildlife Conservation
- (3) Solid Waste Management
- (4) Land Conservation

Correct Answer: (2) Wildlife Conservation

Solution: The Amrita Devi Bishnoi Award is given in recognition of efforts towards wildlife conservation, named after Amrita Devi who sacrificed her life to protect trees and wildlife in her region.

Quick Tip

This award honors individuals or organizations working in the field of wildlife conservation to protect endangered species and their habitats.

355. Greenpeace Organisation was founded in the year ___ and in ___.

- (1) 1971 and Canada
- (2) 1975 and Germany
- (3) 1971 and United States of America
- (4) 1975 and Switzerland

Correct Answer: (1) 1971 and Canada

Solution: Greenpeace Organization was founded in 1971 in Canada with a mission to protect the environment and promote peace.

Quick Tip

Greenpeace is an international environmental organization that uses nonviolent, creative confrontation to expose global environmental issues.

356. Organism which can tolerate and thrive in a wide range of salinities are known as:

- (1) Stenohaline
- (2) Thermohaline
- (3) Eurihaline
- (4) Oligohaline

Correct Answer: (3) Eurihaline

Solution: Eurihaline organisms can tolerate and thrive in a wide range of salinities, unlike stenohaline species that are restricted to a narrow range of salinities.

Quick Tip

Eurihaline organisms are adaptable to varying salinity conditions, allowing them to survive in diverse aquatic environments.

357. The statement "Populations evolve in the habitat in which they live to maximise their reproductive fitness" is representative of:

- (1) Lamarckian fitness
- (2) Darwinian fitness
- (3) Mendelian fitness
- (4) Extreme fitness

Correct Answer: (2) Darwinian fitness

Solution: The concept of Darwinian fitness refers to the ability of an organism to survive and reproduce in its environment, which aligns with the statement about maximizing reproductive fitness.

Quick Tip

Darwinian fitness emphasizes survival and reproduction in an organism's specific environment, while Lamarckian fitness is based on the inheritance of acquired traits.

358. Arrange the phases of logistics population growth from starting from 1st to last:

A. Plateau phase

B. Exponential phase

C. Positive Acceleration phase

D. Lag phase

E. Negative Acceleration phase

Choose the correct answer from the options given below:

(1) C, B, D, E, A

(2) D, B, E, A, C

(3) C, D, A, B, E

(4) D, C, B, E, A

Correct Answer: (3) C, D, A, B, E

Solution: In the logistics population growth model, the correct sequence of phases, starting from the first to the last, is: Positive Acceleration phase (C), Lag phase (D), Plateau phase (A), Exponential phase (B), and Negative Acceleration phase (E).

Quick Tip

The correct order of logistics population growth phases follows the natural progression of growth and stabilization. Always consider the sequence from low growth to stabilization.

359. Match List I with List II:

LIST I (Organisms)	LIST II (Interaction)
A.Fig tree and wasp	<i>I</i> .Commensalism
B.Orchid and mango	<i>II</i> .Parasitism
C.Cuscuta and hedge	<i>III</i> .Mutualism
D.Cow and grass	<i>IV</i> .Predation

Choose the correct answer from the options given below:

- (1) C-IV, B-I, D-II, A-III
- (2) A-IV, B-I, C-II, D-III
- (3) A-III, B-I, C-II, D-IV
- (4) A-I, B-II, C-III, D-IV

Correct Answer: (3) A-III, B-I, C-II, D-IV

Solution: In this matching question, the interaction types for the organisms are as follows:

- Fig tree and wasp exhibit **Mutualism** (A-III), as both benefit from the relationship.
- Orchid and mango exhibit **Commensalism** (B-I), where one benefits while the other is not harmed.
- Cuscuta and hedge are an example of **Parasitism** (C-II), where the parasitic plant benefits at the expense of the host.
- Cow and grass exhibit **Predation** (D-IV), where one is consumed by the other.

Quick Tip

In matching questions, focus on understanding the nature of each relationship between organisms.

360. Arrange the following biomes in increasing order of mean annual precipitation.

- A. Tropical forest**
- B. Grassland**
- C. Desert**

D. Temperate forest

Choose the correct answer from the options given below:

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

Correct Answer: (1) C, B, D, A

Solution: In terms of increasing precipitation:

- **Desert** (C) has the least precipitation, followed by
- **Grassland** (B),
- **Temperate forest** (D),
- **Tropical forest** (A) receives the most precipitation.

Quick Tip

Biomes with less precipitation (such as deserts) typically support more arid vegetation, while biomes with more precipitation (such as tropical forests) support dense vegetation.

361. Which of the following is not a part of 'In situ' Biodiversity conservation?

- (1) Botanical gardens
- (2) Biosphere reserves
- (3) National parks
- (4) Reserve forests

Correct Answer: (1) Botanical gardens

Solution: 'In situ' conservation refers to the conservation of ecosystems and natural habitats, and the maintenance and recovery of viable populations of species in their natural surroundings. Examples include biosphere reserves, national parks, and reserve forests. Botanical gardens, however, are an example of 'ex situ' conservation where species are conserved outside their natural habitats in controlled environments.

Quick Tip

Remember: 'In situ' = in the natural habitat (e.g., reserves, national parks); 'Ex situ' = outside the natural habitat (e.g., zoos, botanical gardens).

362. Arrange the following in increasing order on the basis of total amount of energy consumed at each trophic level per unit area per unit time:

A. Producer

B. Primary consumer

C. Secondary consumer

D. Tertiary consumer

Choose the correct answer from the options given below:

(1) $A < B < C < D$

(2) $C < D < B < A$

(3) $D < C < B < A$

(4) $D < C < A < B$

Correct Answer: (3) $D < C < B < A$

Solution: As we move up the trophic levels in a food chain, the amount of energy available decreases due to loss of energy as heat during metabolic processes. Thus, the amount of energy consumed at each level is highest at the producer level and lowest at the tertiary consumer level. Therefore, the increasing order based on total energy consumption is:
Tertiary consumer < Secondary consumer < Primary consumer < Producer

Quick Tip

Energy flow in an ecosystem follows the 10% law: only about 10% of the energy is transferred from one trophic level to the next. Hence, energy decreases as we move up.

363. Which of the following gas is an indoor air pollutant?

(1) Nitrogen dioxide

- (2) Radon
- (3) Sulfur dioxide
- (4) Carbon dioxide

Correct Answer: (2) Radon

Solution: Radon is a naturally occurring radioactive gas that can accumulate in indoor environments, especially in basements and poorly ventilated buildings. It seeps from soil and rock into the air and is a known carcinogen. Nitrogen dioxide, sulfur dioxide, and carbon dioxide are also air pollutants but are primarily associated with outdoor pollution from vehicles and industrial emissions rather than being characteristic indoor pollutants.

Quick Tip

Radon is an important indoor air pollutant to remember, especially due to its radioactive nature and health hazards like lung cancer.

364. The acceptable range of pH in drinking water as per Bureau of Indian Standards is:

- (1) 7.0 to 9.0
- (2) 6.5 to 8.5
- (3) 6.5 to 7.5
- (4) 4.6 to 8.0

Correct Answer: (2) 6.5 to 8.5

Solution: As per the Bureau of Indian Standards (IS 10500:2012), the acceptable pH range for drinking water is 6.5 to 8.5. pH levels outside this range may cause corrosion or scaling and can impact human health if consumed over long periods.

Quick Tip

Remember: Ideal drinking water pH is slightly alkaline to neutral, typically between 6.5 and 8.5 according to Indian standards.

365. Which of the following are responsible for eutrophication in water bodies?

- (1) Calcium and magnesium
- (2) Calcium and phosphorous
- (3) Nitrogen and phosphorous
- (4) Calcium and nitrogen

Correct Answer: (3) Nitrogen and phosphorous

Solution: Eutrophication is primarily caused by an excess of nutrients, especially nitrogen and phosphorous, in water bodies. These nutrients promote excessive growth of algae and aquatic plants, leading to depletion of oxygen and harm to aquatic life.

Quick Tip

To remember eutrophication causes: think of fertilizers — they are rich in nitrogen and phosphorous, the main contributors to nutrient pollution in water.

366. Match List I with List II

List I	Environmental accidents	List II	Year
A.	Chernobyl nuclear disaster	I.	1948
B.	Bhopal Gas Tragedy	II.	1952
C.	Donora air pollution	III.	1984
D.	The great smog of London	IV.	1986

Choose the correct answer from the options given below:

- (1) A-III, B-IV, C-I, D-II
- (2) A-II, B-IV, C-I, D-III
- (3) A-IV, B-III, C-I, D-II
- (4) A-I, B-II, C-IV, D-III

Correct Answer: (3) A-IV, B-III, C-I, D-II

Solution: - Chernobyl nuclear disaster occurred in 1986 (IV)

- Bhopal Gas Tragedy happened in 1984 (III)

- Donora air pollution event took place in 1948 (I)
- The Great Smog of London occurred in 1952 (II)

Hence, the correct matching is: A-IV, B-III, C-I, D-II

Quick Tip

Link major environmental disasters with their years to remember easily: Chernobyl (1986), Bhopal (1984), Donora (1948), and London Smog (1952).

367. Particle size of the medium 'Sand' lies between:

- (1) 0.25 - 0.10 mm
- (2) 0.50 - 0.25 mm
- (3) 1.00 - 0.50 mm
- (4) 0.10 - 0.05 mm

Correct Answer: (2) 0.50 - 0.25 mm

Solution: According to the USDA (United States Department of Agriculture) soil classification, the particle size for medium sand ranges from 0.25 mm to 0.50 mm. This size is coarser than fine sand (0.05 - 0.25 mm) and finer than coarse sand (0.50 - 1.00 mm). Hence, 0.50 - 0.25 mm falls within the correct range for medium sand.

Quick Tip

Sand particle sizes vary: fine (0.05–0.25 mm), medium (0.25–0.50 mm), and coarse (0.50–1.00 mm).

368. Arrange the biotic and abiotic components of aquatic food chain on the basis of biomagnification of DDT.

- A. Fish eating birds
- B. Water
- C. Large fish

D. Zooplankton

E. Small fish

Choose the correct answer from the options given below:

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

Correct Answer: (4) B, D, E, C, A

Solution: Biomagnification refers to the increasing concentration of a toxic substance like DDT as it moves up the food chain. In an aquatic ecosystem:

- DDT first enters the **water** (B),
- is absorbed by **zooplankton** (D),
- then eaten by **small fish** (E),
- which are consumed by **large fish** (C),
- and finally eaten by **fish-eating birds** (A).

At each level, the concentration of DDT increases.

Quick Tip

Biomagnification always increases from lower to higher trophic levels — from water to top predators like fish-eating birds.

369. Which of the following measurement is equivalent to 100 ppb?

- (1) 1 ppm
- (2) 10 mg/L
- (3) 0.1 ppm
- (4) 1 mg/L

Correct Answer: (3) 0.1 ppm

Solution: 100 ppb (parts per billion) is equal to 0.1 ppm (parts per million), since:

$$1 \text{ ppm} = 1000 \text{ ppb} \Rightarrow 100 \text{ ppb} = \frac{100}{1000} = 0.1 \text{ ppm}$$

Hence, 100 ppb = 0.1 ppm.

Quick Tip

To convert ppb to ppm, divide by 1000. Always remember: 1 ppm = 1000 ppb.

370. Legume crops enrich the soil fertility by:

- (1) Potassium fixation
- (2) Phosphorous fixation
- (3) Nitrogen fixation
- (4) Sulphur fixation

Correct Answer: (3) Nitrogen fixation

Solution: Legume crops (such as beans, lentils, and peas) have symbiotic relationships with nitrogen-fixing bacteria (like Rhizobium) in their root nodules. These bacteria convert atmospheric nitrogen into a usable form for plants, thereby enhancing soil nitrogen content and fertility.

Quick Tip

Legumes = nitrogen fixers. Think “Rhizobium in root nodules” to remember this soil-enriching mechanism.

371. High concentration of Nitrate in drinking water can cause.

- A. Minamata disease
- B. Blue baby syndrome disease
- C. Itai-Itai disease
- D. Methaemoglobinaemia disease

Choose the correct answer from the options given below:

- (1) A and D only
- (2) B and D only
- (3) A and C only
- (4) B and C only

Correct Answer: (1) A and D only

Solution: High nitrate concentration in drinking water is associated with diseases like Methaemoglobinemia disease and Blue baby syndrome, due to its harmful effects on oxygen-carrying capacity in the blood. Minamata disease is caused by mercury poisoning, not nitrate.

Quick Tip

Remember that nitrate contamination affects blood oxygen levels, causing conditions like blue baby syndrome and methaemoglobinemia.

372. Which one of the following theory talks of labour flow from low wage areas to high wage area due to geographic labour demand and supply?

- (1) The New Economics of Labour Migration Theory
- (2) Dual Labour Market Theory
- (3) World System Theory
- (4) Neoclassical Economic Theory

Correct Answer: (1) The New Economics of Labour Migration Theory

Solution: The New Economics of Labour Migration Theory explains that labour moves from low-wage areas to high-wage areas as a response to economic demand and supply, aiming to maximize the household's utility by improving economic conditions.

Quick Tip

This theory focuses on economic factors like wages and household decisions in migration. Always remember it's about household economic strategies.

373. Which of the following is not a push factor for human migration?

- (1) Lack of jobs
- (2) Civil war
- (3) Political stability
- (4) Natural calamities

Correct Answer: (3) Political stability

Solution: Push factors for migration include conditions like lack of jobs, civil war, and natural calamities, which drive people to leave their home countries. Political stability, on the other hand, is generally considered a pull factor, as people are attracted to stable environments.

Quick Tip

Push factors push people away from their current location, while pull factors attract them to new locations.

374. The acronym "OECD" stands for:

- (1) Organisation for Energy Cooperation and Development
- (2) Organisation for Economic Cooperation and Development
- (3) Organisation for Environmental Cooperation and Development
- (4) Organisation for Entrepreneurship Cooperation and Development

Correct Answer: (2) Organisation for Economic Cooperation and Development

Solution: OECD stands for the Organisation for Economic Cooperation and Development, which promotes policies that improve the economic and social well-being of people around the world.

Quick Tip

Remember that OECD is focused on economic cooperation and development. The other options are not related to the acronym.

375. Secondary treatment of sewage water:

A.Removes solid particles and debris

B.Removes dissolved and suspended biological matter

C.Involves conventional sedimentation and filtration

D.Reduces the bio-chemical oxygen demand of water

E.Increases the bio-chemical oxygen demand of water

Choose the correct answer from the options given below:

(1) A,B and D only

(2) B and E only

(3) B and D only

(4) A,C and E only

Correct Answer: (1) A and D only

Solution: Secondary treatment of sewage water primarily removes dissolved and suspended biological matter through processes like biological treatment, which helps reduce the biochemical oxygen demand (BOD) of the water. It does not increase BOD, which would be counterproductive to water quality.

Quick Tip

Secondary treatment focuses on reducing BOD and cleaning biological matter, which is essential for safe water disposal.

376. Which one of the following is Non-thermal technology for 'waste to energy' conversion?

(1) Pyrolysis

- (2) Mechanical biological treatment
- (3) Thermal depolymerisation
- (4) Plasma arc gasification

Correct Answer: (2) Mechanical biological treatment

Solution: Mechanical biological treatment (MBT) is a non-thermal technology used for waste to energy conversion. It involves mechanical sorting and biological treatment processes to break down organic materials, which can then be used for energy production. The other options involve thermal methods.

Quick Tip

Non-thermal technologies focus on mechanical or biological processes, while thermal technologies use heat for energy conversion.

377. Sarvodaya movement was intended to promote self-sufficiency amongst India's rural population by:

- A. Encouraging land distribution**
- B. Centralized governance**
- C. Socio-economic reform**
- D. Promoting large industries**
- E. Promoting cottage industries**

Choose the correct answer from the options given below:

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

Correct Answer: (1) A, B and E only

Solution: The Sarvodaya movement, led by leaders like Gandhi, focused on promoting self-sufficiency in rural India. This was achieved by encouraging land distribution (A),

advocating for decentralized governance (B), and promoting cottage industries (E). The movement did not focus on promoting large industries or socio-economic reforms.

Quick Tip

Sarvodaya = self-sufficiency, land reform, and cottage industries. Focus on these key elements for understanding the movement.

378. Report of World Commission of Environment and Development (WCED) is known as:

- (1) United Nation Report
- (2) World Commission Report
- (3) Brundtland Report
- (4) Sustainable Development Report

Correct Answer: (3) Brundtland Report

Solution: The World Commission on Environment and Development (WCED) report, published in 1987, is famously known as the Brundtland Report. It introduced the concept of "sustainable development" and is a key document in the environmental movement.

Quick Tip

The Brundtland Report is foundational for understanding sustainable development. Always associate WCED with Brundtland.

379. A rainwater harvesting practice to collect water flowing from glaciers in Laddakh is called as:

- (1) Pynes
- (2) Zings
- (3) Katts
- (4) Khadins

Correct Answer: (4) Khadins

Solution: In Laddakh, a traditional rainwater harvesting practice involves collecting water flowing from glaciers, and this system is called "Khadins." These are an essential part of water conservation in the region.

Quick Tip

Remember that Khadins are specific to Laddakh, and they are key to water conservation in the region.

380. Which of the following is not a basic element of the green revolution?

- (1) Use of native variety of crop
- (2) Expansion of existing farmland
- (3) Double cropping in existing farmland
- (4) Use of high yield variety (HYV)

Correct Answer: (1) Use of native variety of crop

Solution: The green revolution primarily focused on increasing crop yields through the use of high-yielding varieties (HYV) of seeds, expansion of existing farmland, and double cropping. The use of native varieties of crops was not a central element of this revolution.

Quick Tip

The green revolution is about enhancing productivity through modern agricultural techniques like HYV seeds, not by using native crop varieties.

381. The cropping season of Zaid crop is:

- (1) July - September months
- (2) October - December months
- (3) January - March months
- (4) April - June months

Correct Answer: (4) April - June months

Solution: Zaid crops are grown in the short season between the Rabi and Kharif seasons, typically from April to June. These crops require warm dry weather for growth and longer day length for flowering. Examples include watermelon, cucumber, and muskmelon.

Quick Tip

Zaid cropping season falls between Rabi and Kharif, mainly during April to June—think of summer fruits and vegetables.

382. The slash and burn agriculture (shifting cultivation) practised in Indonesia and Malaysia is referred to as

- (1) Jhumming
- (2) Ladang
- (3) Milpa
- (4) Nadis

Correct Answer: (2) Ladang

Solution: In Southeast Asian countries like Indonesia and Malaysia, slash and burn agriculture is called "Ladang." This is a type of shifting cultivation where forests are cleared and burned for temporary agriculture before moving to a new area.

Quick Tip

Different regions have local names for shifting cultivation—"Ladang" is specific to Indonesia and Malaysia.

383. In context of food security, the factors responsible for food crisis and increase in prices of food grains are:

- A. Global population boom**
- B. Climate change**

C. Increased farming of biofuels and non-edible items

D. Sustainable agricultural practices

Choose the correct answer from the options given below:

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

Correct Answer: (1) A, B and C only

Solution: The major contributors to food crisis include a rising global population, climate change impacts on agriculture, and diversion of agricultural land to produce biofuels. Sustainable agricultural practices, however, help in alleviating food crises rather than contributing to it.

Quick Tip

Watch out for options that include helpful factors like “sustainable practices”—these aren’t causes of crisis!

384. Following is NOT a characteristic of ‘Resource’ in Environmental Economics:

- (1) Utility
- (2) Limited availability
- (3) Consumption
- (4) Unlimited abundance

Correct Answer: (4) Unlimited abundance

Solution: In Environmental Economics, resources are typically defined by their utility, limited availability, and the fact that they are consumed. A resource being “unlimited in abundance” contradicts the fundamental principle of scarcity, which underpins the concept of resources.

Quick Tip

Resources are valuable because they are useful and limited. “Unlimited abundance” disqualifies something from being considered a scarce resource.

385. The natural reservoir of phosphorus in soils/sediments is:

- (1) Ocean
- (2) Air
- (3) Rocks
- (4) Plants

Correct Answer: (3) Rocks

Solution: Phosphorus is not found in the atmosphere but is stored in the form of phosphates in rocks. Through weathering, these phosphates enter the soil and water systems, making rocks the main natural reservoir of phosphorus in ecosystems.

Quick Tip

Unlike nitrogen or carbon, phosphorus does not cycle through the air—it’s stored in rocks and moves through the lithosphere.

386. ‘Shifting to electrical vehicles will reduce emissions of greenhouse gases.’ This statement is an example of:

- (1) Negative Production Externality
- (2) Positive Production Externality
- (3) Negative Consumption Externality
- (4) Positive Consumption Externality

Correct Answer: (2) Positive Production Externality

Solution: The shift to electric vehicles is an example of a positive production externality because it involves a production decision (using cleaner technology) that has beneficial side

effects, such as reduced greenhouse gas emissions, which benefit society without being directly reflected in market prices.

Quick Tip

Production externalities arise from producers' actions—positive ones create benefits, like reduced pollution from electric vehicles.

387. The world's stock of natural resources which creates long supply of goods and services is referred to as:

- (1) Human capital
- (2) Social capital
- (3) Natural capital
- (4) Manufacturing capital

Correct Answer: (3) Natural capital

Solution: Natural capital refers to the world's natural assets—such as soil, air, water, and living organisms—that provide ecosystem services essential for human survival and economic activity. It forms the foundation for sustainable development and long-term wealth generation.

Quick Tip

Think of “natural capital” as nature's bank account—resources we draw from to keep life and the economy running.

388. The systematic approach to estimate the strength and weakness of activities or functional requirement considering both direct and indirect values is known as:

- (1) Cost Benefit Analysis
- (2) Risk Benefit Analysis
- (3) Integrated Benefit Analysis

(4) Relative Cost Assessment

Correct Answer: (1) Cost Benefit Analysis

Solution: Cost Benefit Analysis (CBA) is a systematic method used to evaluate the strengths and weaknesses of alternatives. It considers both direct and indirect costs and benefits to determine the best approach or option based on economic efficiency.

Quick Tip

CBA = Weighing total expected benefits vs. costs to decide whether it's worth proceeding with a project or policy.

389. Most of the weather-related phenomena on Earth's surface takes place in:

- (1) Troposphere
- (2) Stratosphere
- (3) Mesosphere
- (4) Thermosphere

Correct Answer: (1) Troposphere

Solution: The troposphere is the lowest layer of Earth's atmosphere where most weather phenomena like clouds, rain, storms, and wind occur. It contains approximately 75

Quick Tip

Remember: Weather lives in the troposphere—the bottommost layer, closest to Earth's surface.

390. Match List I with List II

LIST I Convention / Protocol	LIST II Objective
A. The Bamako	I. To control international exportation of toxic waste
B. The Basel	II. Reducing production and usage of ozone depletion substances
C. Kyoto	III. Ban on import of hazardous waste into Africa
D. Montreal	IV. Reduction in Green-house gases emissions

Choose the correct answer from the options given below:

- (1) A-I, B-II, C-IV, D-III
- (2) A-II, B-III, C-I, D-IV
- (3) A-IV, B-II, C-III, D-I
- (4) A-III, B-I, C-IV, D-II

Correct Answer: (4) A-III, B-I, C-IV, D-II

Solution: - The Bamako Convention (A) specifically targets hazardous waste imports into Africa — hence (III).

- The Basel Convention (B) controls the transboundary movements of hazardous wastes — aligns with (I).

- The Kyoto Protocol (C) aims to reduce greenhouse gas emissions — corresponds to (IV).

- The Montreal Protocol (D) focuses on phasing out ozone-depleting substances — best matches (II).

Quick Tip

Match international protocols with their exact environmental focus: Montreal → Ozone, Kyoto → GHGs, Basel → Hazardous Waste, Bamako → Africa-specific waste ban.

391. Read the following passage and answer the question:

Lakes and river systems are separated from each other by barriers of land. It might have been thought that fresh water productions would not have ranged widely within the same country, and as the sea is apparently a still more impassable barrier, that they never would have extended to distant countries. But the case is exactly the reverse. Not only have fresh-water species, belonging to quite different classes, an enormous range, but allied species have also prevailed in a remarkable manner throughout the world. I well remember, while first collecting the fresh-waters of Brazil, feeling much surprise at the similarity of the fresh-water insects, shells, etc. and at the dissimilarity of the surrounding terrestrial beings, compared with those of Britain.

The author seems to be surprised often comparing certain species of which of the following two regions?

- (1) India and Britain
- (2) Brazil and India
- (3) Britain and Brazil
- (4) Brazil and Canada

Correct Answer: (3) Britain and Brazil

Solution: The passage clearly states that the author was surprised by the similarity of freshwater species between Brazil and Britain, despite the distance, and also noted how different the surrounding terrestrial species were. Hence, the correct regions of comparison are Britain and Brazil.

Quick Tip

Always trace the specific comparison mentioned in the passage—in this case, freshwater species between Brazil and Britain.

392. Read the following passage and answer the question:

Lakes and river systems are separated from each other by barriers of land. It might have been thought that fresh water productions would not have ranged widely within the same country, and as the sea is apparently a still more impassable barrier, that they

never would have extended to distant countries. But the case is exactly the reverse. Not only have fresh-water species, belonging to quite different classes, an enormous range, but allied species have also prevailed in a remarkable manner throughout the world. I well remember, while first collecting the fresh-waters of Brazil, feeling much surprise at the similarity of the fresh-water insects, shells, etc. and at the dissimilarity of the surrounding terrestrial beings, compared with those of Britain.

Which of the following conclusions has the author drawn?

- (1) There is less variation in biodiversity of fresh-water species
- (2) Biodiversity of fresh-water species is greater than that of marine species
- (3) Biodiversity is greater in lakes as compared to river systems
- (4) There is a wide variation in biodiversity of fresh water species

Correct Answer: (4) There is a wide variation in biodiversity of fresh water species

Solution: The author notes that freshwater species have an “enormous range” and that allied species are found globally, which supports the conclusion of a wide variation in biodiversity among freshwater species.

Quick Tip

Focus on descriptive terms like “enormous range” and “remarkable manner throughout the world” to infer conclusions.

393. Read the following passage and answer the question:

Lakes and river systems are separated from each other by barriers of land. It might have been thought that fresh water productions would not have ranged widely within the same country, and as the sea is apparently a still more impassable barrier, that they never would have extended to distant countries. But the case is exactly the reverse. Not only have fresh-water species, belonging to quite different classes, an enormous range, but allied species have also prevailed in a remarkable manner throughout the world. I well remember, while first collecting the fresh-waters of Brazil, feeling much surprise at the similarity of the fresh-water insects, shells, etc. and at the dissimilarity of the

surrounding terrestrial beings, compared with those of Britain.

Which of the following species, the author most likely studied as per the given passage?

- (1) Insects
- (2) Blue whale
- (3) Star fish
- (4) Wrasses

Correct Answer: (1) Insects

Solution: The passage mentions that the author studied freshwater environments in Brazil and found similarities in freshwater “insects, shells, etc.” Therefore, insects are explicitly referred to as the species under study.

Quick Tip

Stick to what the passage explicitly says—insects are clearly mentioned as part of the author’s observation.

394. Read the following passage and answer the question:

Lakes and river systems are separated from each other by barriers of land. It might have been thought that fresh water productions would not have ranged widely within the same country, and as the sea is apparently a still more impassable barrier, that they never would have extended to distant countries. But the case is exactly the reverse. Not only have fresh-water species, belonging to quite different classes, an enormous range, but allied species have also prevailed in a remarkable manner throughout the world. I well remember, while first collecting the fresh-waters of Brazil, feeling much surprise at the similarity of the fresh-water insects, shells, etc. and at the dissimilarity of the surrounding terrestrial beings, compared with those of Britain.

Which of the following has been cited in the passage as a possible reason to support the hypothesis of narrow range of fresh water species biodiversity?

- (1) Over hunting
- (2) Sexual incompatibility

- (3) Water pollution
- (4) Sea barrier

Correct Answer: (4) Sea barrier

Solution: The passage suggests that the sea is considered an "apparently still more impassable barrier," which might have supported the idea of limited distribution of freshwater species. This implies that the sea barrier was considered a constraint on their range.

Quick Tip

In comprehension, look for hypotheses or beliefs directly mentioned—here, the "sea" was thought to limit species spread.

395. Read the following passage and answer the question:

Lakes and river systems are separated from each other by barriers of land. It might have been thought that fresh water productions would not have ranged widely within the same country, and as the sea is apparently a still more impassable barrier, that they never would have extended to distant countries. But the case is exactly the reverse. Not only have fresh-water species, belonging to quite different classes, an enormous range, but allied species have also prevailed in a remarkable manner throughout the world. I well remember, while first collecting the fresh-waters of Brazil, feeling much surprise at the similarity of the fresh-water insects, shells, etc. and at the dissimilarity of the surrounding terrestrial beings, compared with those of Britain.

Which of the following captures the essence of the given passage most appropriately?

- (1) Water pollution
- (2) Biodiversity
- (3) Fisheries
- (4) Aqua-culture

Correct Answer: (2) Biodiversity

Solution: The passage is centered on the unexpected widespread similarity and diversity of

freshwater species across geographical barriers, highlighting the concept of biodiversity. It is not focused on pollution, fisheries, or aquaculture.

Quick Tip

Always ask: “What is this passage mainly about?” In this case, biodiversity is the clear recurring theme.

396. Read the following passage and answer the question:

The global average surface temperature has increased by approximately 0.8° C over the last century. Many countries have experienced increase in rainfall, particularly in those situated in the mid to high latitudes. In some regions, the frequency and intensity of droughts have increased in recent decades. All these are signs of climate change, which making it more difficult for mankind survival. Projections of future climate change have predicted that the global mean surface temperature will rise by 1.4° C to 5.8° C. The frequency of weather extremes is likely to increase. Global mean sea level is projected to rise by 9 to 88 cm by the year 2100. Changes in climate may affect the distribution of vector species which in turn will increase the spread of diseases, such as malaria and filariasis, to new areas which lack a strong public health infrastructure. Present day problem of climate change is NOT primarily due to:

- (1) Increase in biomass burning
- (2) Increase in fossil fuel combustion
- (3) Increase in volcanic activities
- (4) Increase in greenhouse gas emissions

Correct Answer: (3) Increase in volcanic activities

Solution: While volcanic activity can influence climate temporarily, it is not a primary driver of current climate change. The major contributors are human activities, including fossil fuel combustion, biomass burning, and greenhouse gas emissions.

Quick Tip

Climate change today is driven by human activities—not natural phenomena like volcanoes.

397. Read the following passage and answer the question:

The global average surface temperature has increased by approximately 0.8°C over the last century. Many countries have experienced increase in rainfall, particularly in those situated in the mid to high latitudes. In some regions, the frequency and intensity of droughts have increased in recent decades. All these are signs of climate change, which making it more difficult for mankind survival. Projections of future climate change have predicted that the global mean surface temperature will rise by 1.4°C to 5.8°C . The frequency of weather extremes is likely to increase. Global mean sea level is projected to rise by 9 to 88 cm by the year 2100. Changes in climate may affect the distribution of vector species which in turn will increase the spread of diseases, such as malaria and filariasis, to new areas which lack a strong public health infrastructure.

Climate change related impacts could lead to:

- (1) Better life standard in developing countries
- (2) Sustained economic development
- (3) Displacement of a large people
- (4) Decrease in the spread of diseases

Correct Answer: (3) Displacement of a large people

Solution: The passage mentions rising sea levels, extreme weather, and disease spread—all factors that contribute to large-scale displacement. Hence, displacement is a key climate-related impact.

Quick Tip

Link rising sea levels and weather extremes with population displacement—an often overlooked climate consequence.

398. Read the following passage and answer the question:

The global average surface temperature has increased by approximately 0.8°C over the last century. Many countries have experienced increase in rainfall, particularly in those situated in the mid to high latitudes. In some regions, the frequency and intensity of droughts have increased in recent decades. All these are signs of climate change, which making it more difficult for mankind survival. Projections of future climate change have predicted that the global mean surface temperature will rise by 1.4°C to 5.8°C . The frequency of weather extremes is likely to increase. Global mean sea level is projected to rise by 9 to 88 cm by the year 2100. Changes in climate may affect the distribution of vector species which in turn will increase the spread of diseases, such as malaria and filariasis, to new areas which lack a strong public health infrastructure. Which of the following gases contribute maximally to global warming?

- (1) N_2O
- (2) CFCs
- (3) CO_2
- (4) O_3

Correct Answer: (3) CO_2

Solution: Carbon dioxide (CO_2) is the most significant greenhouse gas contributing to global warming due to its high concentration from human activities such as fossil fuel combustion. Although others like N_2O and CFCs are potent, CO_2 has the largest overall impact.

Quick Tip

When asked about "maximum" contribution to global warming, go with CO_2 —the most abundant and impactful GHG.

399. Read the following passage and answer the question:

The global average surface temperature has increased by approximately 0.8°C over the last century. Many countries have experienced increase in rainfall, particularly in those

situated in the mid to high latitudes. In some regions, the frequency and intensity of droughts have increased in recent decades. All these are signs of climate change, which making it more difficult for mankind survival. Projections of future climate change have predicted that the global mean surface temperature will rise by 1.4°C to 5.8°C . The frequency of weather extremes is likely to increase. Global mean sea level is projected to rise by 9 to 88 cm by the year 2100. Changes in climate may affect the distribution of vector species which in turn will increase the spread of diseases, such as malaria and filariasis, to new areas which lack a strong public health infrastructure. Which of the following gas is NOT responsible for anthropogenic global warming?

- (1) CO_2
- (2) CH_4
- (3) NO_2
- (4) N_2O

Correct Answer: (3) NO_2

Solution: NO_2 (Nitrogen dioxide) is primarily a pollutant related to smog and acid rain but is not a major contributor to anthropogenic global warming. The other gases listed— CO_2 , CH_4 , and N_2O —are well-known greenhouse gases linked to human activity.

Quick Tip

Know your GHGs! NO_2 is more associated with pollution than direct greenhouse warming.

400. Read the following passage and answer the question:

The global average surface temperature has increased by approximately 0.8°C over the last century. Many countries have experienced increase in rainfall, particularly in those situated in the mid to high latitudes. In some regions, the frequency and intensity of droughts have increased in recent decades. All these are signs of climate change, which making it more difficult for mankind survival. Projections of future climate change have predicted that the global mean surface temperature will rise by 1.4°C to 5.8°C .

The frequency of weather extremes is likely to increase. Global mean sea level is projected to rise by 9 to 88 cm by the year 2100. Changes in climate may affect the distribution of vector species which in turn will increase the spread of diseases, such as malaria and filariasis, to new areas which lack a strong public health infrastructure.

Climate change does NOT lead to:

- (1) Salt water intrusion in coastal aquifer
- (2) Geopolitical dispute
- (3) Spread of vector-borne diseases
- (4) Increase in solar activity of sun

Correct Answer: (4) Increase in solar activity of sun

Solution: Climate change is driven by factors such as greenhouse gas emissions and leads to effects like sea-level rise, water salinity, disease spread, and even political tensions over resources. However, it does not influence solar activity—this is a natural phenomenon unrelated to climate change.

Quick Tip

Differentiate between causes and effects: climate change affects Earth's systems, not external forces like solar activity.

Comp Sci or IP

401. Which of the following statements are correct?

- A. Exception Handling can be done for only user-defined exceptions but not for built-in exceptions.**
- B. In python exception handling, else clause is optional.**
- C. Try statement in python must have a finally clause.**
- D. Statements in finally clause are always executed regardless of whether an exception has occurred in try block or not.**
- E. Except block will be executed only if some exception is raised in try block.**

Choose the correct answer from the options given below:

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

Correct Answer: (4) B, D and E only

Solution: - Statement A is incorrect because Python handles both built-in and user-defined exceptions.

- Statement B is correct: the 'else' clause is optional.
- Statement C is incorrect: a 'finally' clause is optional.
- Statement D is correct: the 'finally' block always executes.
- Statement E is correct: the 'except' block only runs if an exception occurs.

Quick Tip

Remember: try-except-finally is flexible—'finally' is optional, but if present, it always executes.

402. ____ is raised when the index in a sequence is out of range.

- (1) ImportError
- (2) IndexError
- (3) TypeError
- (4) EOFError

Correct Answer: (2) IndexError

Solution: 'IndexError' is raised in Python when you try to access an index that is outside the bounds of a list, tuple, or string. The other options relate to different kinds of errors (e.g., import issues, type mismatches, or unexpected end-of-file).

Quick Tip

Accessing a non-existent element in a sequence? Think 'IndexError'!

403. seek(1) method in files used for:

- (1) Sets the file's current position at the offset
- (2) Sets the file's previous position at the offset
- (3) Sets the file's current position within the file
- (4) Tells you the file is opened or not

Correct Answer: (1) Sets the file's current position at the offset

Solution: The 'seek(offset)' method in Python sets the file's current position at the specified offset. It is commonly used to navigate to a specific byte within a file for reading or writing.

Quick Tip

'seek()' = reposition the file pointer. 'seek(1)' means go to position 1 in the file.

404. Which of the following statements are true with respect to append <a> mode?

- A. The user can read the file in <a> mode.
- B. If the file is opened in <a> mode and the file doesn't exist, then it will create a new file.
- C. The user can write at the end of existing file when file is opened in <a> mode.
- D. <a> mode is the default mode.
- E. If the file is opened in <a> mode, the file offset position returned in the End of the file.

Choose the correct answer from the options given below:

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

Correct Answer: (4) B, C and E only

Solution: - A is incorrect: 'a' mode is for writing; to read, 'a+' is needed.

- B is correct: 'a' will create the file if it doesn't exist.

- C is correct: it writes only at the end.

- D is incorrect: 'r' is the default mode.

- E is correct: in append mode, writes occur at the file's end.

Quick Tip

Append ('a') mode = always writes at the end. Read not allowed unless using 'a+'.

405. Database schema is the ____ of a database.

(1) Application

(2) Design

(3) Use case

(4) Testing

Correct Answer: (2) Design

Solution: A database schema defines the structure or design of a database, including tables, fields, relationships, constraints, and more. It represents the logical configuration of all or part of a relational database.

Quick Tip

Think of a schema as a blueprint—it lays out how data is organized and how relationships work.

406. Consider the following relation:

STUDENT

RollNumber	Name	Class	DateofBirth	Address
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What should be the primary key for relation STUDENT?

- (1) Class
- (2) RollNumber
- (3) DateofBirth
- (4) Address

Correct Answer: (2) RollNumber

Solution: The primary key is a unique identifier for records in a table. "RollNumber" is unique for every student and serves as the most appropriate primary key in this case.

Quick Tip

Primary keys must be unique and not null. "RollNumber" fits both criteria.

407. Consider the following statements relating to database:

- A. Composite primary key is used to represent the relationship between two relations.**
- B. A foreign key is used to represent the relationship between two relations.**
- C. The tuples within a relation must be distinct.**

Choose the correct answer from the options given below:

- (1) B and C are false
- (2) A and B are false
- (3) B and C are true
- (4) A and C are true

Correct Answer: (3) B and C are true

Solution: - Statement A is false: Composite primary keys uniquely identify a row within a relation, not necessarily define relationships between relations.

- Statement B is true: Foreign keys are used to establish relationships between tables.
- Statement C is true: Tuples (rows) in a relational table must be unique.

Quick Tip

Composite keys identify records, foreign keys connect tables, and tuples must always be unique.

408. Give output of:

Select Round (765.3895, 2)

will return:

- (1) 765.38
- (2) 765.30
- (3) 765.00
- (4) 765.39

Correct Answer: (4) 765.39

Solution: The SQL 'ROUND()' function rounds a numeric field to the number of decimal places specified. 'ROUND(765.3895, 2)' rounds the number to two decimal places. Since the third decimal digit is 9 (greater than 5), it rounds up from 765.38 to 765.39.

Quick Tip

Pay close attention to the digit following the rounding precision—it determines the final value.

409. Vardan was asked by his teacher the meaning of the following command. He is not able to decide on the correct answer. Help him in selecting the correct answer.

Select * from stud where admn like '%5%5%';

- (1) admn begins with two 5s
- (2) admn has two 5s in it at any position
- (3) admn ends with two 5s
- (4) admn should have more than two 5s

Correct Answer: (2) admn has two 5s in it at any position

Solution: The ‘LIKE ’%5%5%’‘ SQL command searches for any string where two ’5’s appear in order, but not necessarily consecutively—they just need to appear somewhere in the value with any characters (including none) in between. Hence, it means the value contains two ’5’s in any position.

Quick Tip

‘

410. Let us consider two relations HISTORY and SCIENCE as depicted in the following Tables 1 and 2 respectively:

Table 1: HISTORY

SNo	NAME	CLASS
1	MOHAN	6A
2	SANJAY	6B
3	YOGESH	7A

Table 2: SCIENCE

SNo	NAME	CLASS
1	NARESH	6B
2	SANJAY	6B
3	YOGESH	7A

What is the output of HISTORY - SCIENCE?

(1)

SNo	NAME	CLASS
1	MOHAN	6A

(2)

SNo	NAME	CLASS
1	MOHAN	6A
2	SANJAY	6B
3	YOGESH	7A

(3)

SNo	NAME	CLASS
1	NARESH	6B
2	SANJAY	6B
3	YOGESH	7A

(4)

SNo	NAME	CLASS
1	NARESH	6B

Correct Answer: (1)

SNo	NAME	CLASS
1	MOHAN	6A

Solution: The set operation ‘HISTORY - SCIENCE’ returns the tuples that are present in the HISTORY table but not in the SCIENCE table. Comparing rows, only the tuple (MOHAN, 6A) is unique to HISTORY. SANJAY and YOGESH are present in both, so they are excluded.

Quick Tip

Set difference in databases means: “what’s in the first table but not in the second.”
Watch for exact matches!

411. Match List I with List II

LIST I	LIST II
A. Alter	I. Change the name of the column
B. Update	II. Create a database
C. Delete	III. Update existing information in a table
D. Create	IV. Delete an existing row from table

Choose the correct answer from the options given below:

- (1) A-III, B-II, C-I, D-IV
- (2) A-II, B-III, C-I, D-IV
- (3) A-I, B-III, C-II, D-IV
- (4) A-I, B-III, C-IV, D-II

Correct Answer: (4) A-I, B-III, C-IV, D-II

Solution: - ALTER is used to modify the structure of a table, such as renaming a column → I.

- UPDATE is for changing values in existing records → III.

- DELETE removes records (rows) from a table → IV.

- CREATE initializes new objects like tables or databases → II.

Quick Tip

Match SQL commands based on their function keywords: alter (structure), update (data), delete (rows), create (objects).

412. The ____ is the largest WAN that connects billions of computers, smartphones and millions of LAN from different Continents.

(1) Internet

(2) Intranet

(3) Subnet

(4) Supernet

Correct Answer: (1) Internet

Solution: The Internet is the world's largest Wide Area Network (WAN), enabling connectivity between billions of devices and networks globally. Intranet is a private network; subnet is a smaller division of an IP network; supernetting aggregates multiple networks.

Quick Tip

If the question says "largest WAN", the answer is always the Internet—no other choice scales globally.

413. Who invented the WWW?

(1) Berners Lee

- (2) Charls Lee
- (3) Bill Gate
- (4) Donald Smith

Correct Answer: (1) Berners Lee

Solution: Tim Berners-Lee, a British computer scientist, invented the World Wide Web (WWW) in 1989 while working at CERN. He developed the first web browser and web server, enabling global communication via the internet.

Quick Tip

Tim Berners-Lee = WWW inventor. Remember the initials: TBL → The Browser Legend.

414. Consider the following statements relating to network device repeater:

- A. It is an analog device.**
- B. It regenerates the received signals.**
- C. It enables signals to travel longer distances over a network.**

Choose the correct answer from the options given below:

- (1) A is false
- (2) B is false
- (3) All A, B and C are true
- (4) A is true and B is false

Correct Answer: (1) A is false

Solution: Repeaters are digital devices, not analog. They regenerate and amplify the digital signal to prevent loss over long distances, ensuring signal integrity in large networks.

Quick Tip

Repeaters = digital regenerators, not analog amplifiers. B and C are true.

415. Which of the following is a network device?

- (1) Laptop
- (2) Repeater
- (3) Monitor
- (4) Printer

Correct Answer: (2) Repeater

Solution: A repeater is a network device used to regenerate and amplify signals in a network, allowing data to travel longer distances without degradation. Laptops, monitors, and printers are end-user devices, not part of network infrastructure.

Quick Tip

Repeaters help extend network range—classic example of a network device.
