

## Unit I

### Objective Type:

1. Which of the following is a biotic component of the environment?

- A) Water    B) Air    C) Plants    D) Soil

2. Abiotic components of the environment include all EXCEPT:

- A) Temperature.    B) Fungi    C) Light    D) Water

3. The lithosphere refers to:

- A) The water layer of Earth    B) The gaseous envelope around Earth  
C) The solid outer part of the Earth    D) The biological component of Earth

4. Which of the following is NOT a natural component of the environment?

- A) Mountains    B) Buildings    C) River. D Forests

5. The hydrosphere includes:

- A) All plants and animals    B) All landforms  
C) All water bodies    D) The ozone layer

6. Biosphere refers to:

- A) Only forests    B) Life-supporting zone of the Earth    C) Uppermost layer of the atmosphere  
D) Deep ocean trenches

7. The main source of energy for the environment is:

- A) Wind    B) Water    C) The Sun    D) Fossil fuels

8. Which of the following is NOT a component of the biosphere?

- A) Humans    B) Birds    C) Rocks    D) Microorganisms

9. Which component of the environment is directly involved in weather and climate?

- A) Lithosphere.    B) Hydrosphere    C) Atmosphere    D) Biosphere

10. Which of the following is the largest ecosystem on Earth?

- A) Forest    B) Grassland    C) Ocean    D) Desert

11. Which of the following is a pioneer species in ecological succession?

- A) Mosses    B) Lichens    C) Ferns    D) Shrubs

12. The pyramid of energy is always:

- A) Upright    B) Inverted    C) Linear    D) Irregular

13. Which cycle involves the movement of water through evaporation, condensation, and precipitation?

- A) Carbon cycle    B) Water cycle    C) Nitrogen cycle    D) Oxygen cycle

**14. An ecosystem is defined as:**

- A) A community of organisms      B) The abiotic environment
- C) A biological community and its physical environment      D) A group of the same species

**15. The rate at which producers in an ecosystem capture energy is called:**

- A) Net productivity    B) Primary productivity    C) Gross productivity    D) Energy flow

**16. What is an ecosystem? Name one natural & one artificial ecosystem.**

**17. What are biotic & abiotic components of an ecosystem. Explain with examples.**

**18. What is meant by producers?**

**19. What are consumers in an ecosystem**

**20. Define decomposers.**

**21. What are food chain & food web?**

**22. Name one herbivore & one carnivore.**

**23. What is ecological succession. Explain two types of ecological succession with examples.**

**24. What are lotic and lentic ecosystem?**

**25. What are aquatic & terrestrial ecosystems? Explain their different types.**

## Unit – II

### **Fill in the Blanks**

**1. Air pollution is caused by the presence of harmful \_\_\_\_\_ in the atmosphere.**

**Answer: substances or pollutants**

**2. \_\_\_\_\_ is a colorless, odorless gas that is poisonous and produced by incomplete combustion.**

**Answer: Carbon monoxide**

**3. The Air Quality Index (AQI) is used to measure the level of \_\_\_\_\_ in the air.**

**Answer: pollution**

**4. Burning of fossil fuels releases large amounts of \_\_\_\_\_ dioxide into the atmosphere.**

**Answer: carbon**

**5. Prolonged exposure to polluted air can lead to diseases like \_\_\_\_\_ and bronchitis.**

**Answer: asthma**

**6. Noiseution affects the \_\_\_\_\_ system of humans.**

**Answer: auditory**

7. Excessive noise can cause stress and high \_\_\_\_\_ pressure

Answer: blood

8. Sounds \_\_\_\_\_ decibels can be harmful to human ears.

Answer: 85

9. Barriers and tree plantations are used to control \_\_\_\_\_ pollution.

Answer: noise

10. Radiation pollution is caused by the emission of \_\_\_\_\_ energy from radioactive substances.

Answer: ionizing

11. Overexposure to UV radiation can lead to \_\_\_\_\_ cancer.

Answer: skin

12. \_\_\_\_\_ power plants are a major source of radiation pollution.

Answer: Nuclear

13. A \_\_\_\_\_ is used to detect radiation levels.

Answer: Geiger counter

14. Radiation can damage living cells and cause \_\_\_\_\_ mutations.

Answer: genetic

#### Multiple Choice Questions (MCQs)

1. Which of the following is a major cause of air pollution in cities?

- A. Use of electric cars
- B. Industrial emissions
- C. Organic farming
- D. Forest conservation

Answer: B. Industrial emissions

2. Which gas is primarily responsible for acid rain?

- A. Carbon dioxide
- B. Oxygen
- C. Sulphur dioxide
- D. Nitrogen

Answer: C. Sulphur dioxide

3. Which of the following is NOT a greenhouse gas?

- A. Carbon dioxide
- B. Methane
- C. Oxygen
- D. Nitrous oxide

Answer: C. Oxygen

4. Which pollutant is most harmful to the human respiratory system?

- A. Water vapor
- B. Particulate Matter (PM2.5)
- C. Nitrogen
- D. Helium

Answer: B. Particulate Matter (PM2.5)

5. Which device is used in factories to reduce air pollution?

- A. Air conditioner
- B. Solar panel
- C. Electrostatic precipitator
- D. Fan

Answer: C. Electrostatic precipitator

6. Which of the following is a source of ionizing radiation?
- A. Mobile phones
  - B. X-ray machines
  - C. Microwaves
  - D. Visible light

Answer: B. X-ray machines

7. Radiation pollution is mainly caused by:
- A. Sound waves
  - B. Light waves
  - C. Nuclear activities
  - D. Wind energy

Answer: C. Nuclear activities

- 8 . Which radioactive element was responsible for the Chernobyl nuclear disaster?
- A. Uranium-235.
  - B. Carbon-14
  - C. Plutonium-239
  - D. Thorium

Answer: A. Uranium-235

9. Which of the following health issues is NOT caused by radiation exposure?
- A. Cancer
  - B. Skin burns
  - C. Hearing loss
  - D. Genetic disorders

Answer: C. Hearing loss

#### 1 mark Questions

1. Name any two primary air pollutants.
2. What is a secondary pollutant?
3. Give one example of a greenhouse gas.
4. Mention one source of carbon monoxide (CO).
5. What is the full form of CFCs?
6. Name one pollutant responsible for acid rain.
7. Which air pollutant is responsible for the depletion of the ozone layer?
8. State one effect of particulate matter on human health.
9. What does AQI stand for?
10. Name any two pollutants considered in AQI calculation.
11. What is the full form of NAAQS?
12. Which organization in India monitors air quality standards?
13. What is the highest AQI category in terms of health risk?
14. What does the “Bharat Stage” in emission standards refer to?
15. In which year was Bharat Stage VI implemented in India?
16. Which pollutant's emission is significantly reduced by BS-VI vehicles?
17. Name one gaseous pollutant regulated under NAAQS.

#### 2-Mark Questions:

1. Differentiate between primary and secondary air pollutants.
2. List any two sources of sulfur dioxide ( $\text{SO}_2$ ) in the atmosphere.
3. How does nitrogen dioxide ( $\text{NO}_2$ ) affect human health?
4. What are particulate pollutants? Give two examples.
5. Mention two effects of air pollution on the environment.
6. Write two harmful effects of carbon monoxide.
7. Why is ground-level ozone considered a pollutant?
8. Name two diseases caused by air pollution.
9. What are greenhouse gases? Mention any two.

- 10. What is the purpose of the Air Quality Index (AQI)?**
- 11. List any four parameters used in calculating AQI.**
- 12. State two differences between Bharat Stage IV and Bharat Stage VI norms.**
- 13. What are the main objectives of NAAQS?**
- 14. Explain the significance of PM2.5 and PM10 in air quality monitoring.**
- 15. Mention any two improvements introduced in BS-VI vehicles compared to BS-IV.**
- 16. Who sets and revises the NAAQS in India?**
- 17. Give the AQI range for the “Moderate” category**

### Unit III

#### Fill in the Blanks:

1. \_\_\_\_\_ is a bacterial disease caused by drinking contaminated water.

Ans: Cholera

2. The excessive use of \_\_\_\_\_ leads to soil pollution.

Ans: Chemical fertilizers

3. \_\_\_\_\_ is the process of accumulation of nutrients in water bodies, leading to algal bloom.

Ans: Eutrophication

4. Water having a high BOD value is considered \_\_\_\_\_.

Ans: Polluted

5. Solid waste like plastic and glass are \_\_\_\_\_ pollutants.

Ans: Non-biodegradable

#### True or False:

1. Excessive irrigation can cause soil salinity.

Ans: True

2. Boiling water removes heavy metal pollution.

Ans: False

3. Using organic compost helps reduce soil pollution.

Ans: True

4. Oil spills are a source of soil as well as water pollution.

Ans: True

5. Deforestation helps in reducing soil erosion.

Ans: False

**Multiple Choice Questions (MCQs):**

**1. Which of the following is a major cause of water pollution?**

- a) Wind erosion    b) Industrial waste    c) Solar radiation    d) Earthquakes

**Ans: b) Industrial waste**

**2. Which gas is commonly released from sewage that pollutes water?**

- a) Oxygen    b) Nitrogen    c) Methane    d) Carbon monoxide

**Ans: c) Methane**

**3. Eutrophication in water bodies is caused due to excessive presence of:**

- a) Heavy metal    b) Organic solvents    c) Nutrients like nitrogen and phosphorus    d) Oil

**Ans: c) Nutrients like nitrogen and phosphorus**

**4. Soil pollution is mainly caused by:**

- a) Biodiversity    b) Organic farming    c) Use of pesticides and fertilizers    d) Planting of trees

**Ans: c) Use of pesticides and fertilizers**

**5. Which of the following is a non-biodegradable pollutant in water?**

- a) Sewage    b) Paper waste    c) Plastic    d) Food waste

**Ans: c) Plastic**

**6. Which one of these diseases is caused by drinking polluted water?**

- a) Tuberculosis    b) Malaria    c) Cholera    d) Asthma

**Ans: c) Cholera**

**7. What is the major source of arsenic contamination in groundwater?**

- a) Plastic waste    b) Industrial mining    c) Household waste    d) Oil spills

**Ans: b) Industrial mining**

**8. Which of the following techniques can help reduce soil pollution?**

- a) Slash and burn    b) Composting    c) Deforestation    d) Urbanization

**Ans: b) Composting**

**9. The BOD (Biochemical Oxygen Demand) test is used to measure:**

- a) Toxic chemicals in air    b) Radioactivity in soil    c) Organic pollution in water.    d) Soil salinity

**Ans: c) Organic pollution in water**

**10. The main pollutant from agricultural runoff is:**

- a) Mercury    b) Pesticides and fertilizers    c) Carbon dioxide    d) Ash

**Ans: b) Pesticides and fertilizers**

### **1 Mark Questions**

1. What is biochemical oxygen demand (BOD) ?
2. Define Chemical oxygen demand (COD)?
3. Which heavy metal found in industrial waste pollutes water and causes Minamata disease?
4. Name any one chemical pollutant of water.
5. Name any two water borne diseases.

### **2- Mark Questions**

1. List any two chemical pollutants commonly found in water bodies.
2. How do chemical pollutants enter water bodies? Give two sources.

**Answer:** Through industrial discharge, agricultural runoff (fertilizers & pesticides), and sewage water.

3. Mention two harmful effects of chemical pollutants in water.

**Answer:** Causes health issues like cancer, neurological disorders; harms aquatic life and disrupts ecosystems.

4. Write any two sources of water pollution.
5. What are chemical pollutants? Mention one source of chemical pollutants.
6. What do you mean by biological pollutants of water? Give one example of biological water pollutants.
7. How does heat Water discharge into rivers and lakes affect water?
8. What are the causes of soil pollution?
9. How does soil pollution affect plant growth?
10. List any two effects of soil pollution on the environment.
11. How does soil pollution affect agriculture?
12. Explain how soil pollution indirectly affects human health?

### **UNIT IV**

1. Differentiate between renewable & non – renewable energy.
2. What are different types of renewable energy?
3. Mention any two benefits of renewable energy.
4. Give any two examples of renewable energy.
5. What is the working principle of Plate Flat Collector?
6. What is working principle of solar pond? Mention one application of solar pond.
7. What is working principle of solar water heater? Mention one advantage of solar water heater.
8. Explain the working principle of solar dryer. Mention one advantage of its use.
9. Which state in India is first in solar energy?
10. Which state is known as solar City of India?
11. What is the function of solar dryer?

**NB : Ensure that you thoroughly review all the questions I have provided during the class. For Unit V, you are strictly advised to prepare only the questions discussed and given in class.**