

GUJARAT TECHNOLOGICAL UNIVERSITY

DI -1 SEMESTER – OLD PAPER – W21 TO W23 – QUESTION BANK(English)

Subject Name & Code:

Environment and Sustainability- 4300003

Unit 1: Ecosystem

Repeated Questions:

1. **Define the terms: 'Ecology' and 'Ecosystem'.**
 - Appeared in: W21 (Q1a, 02 marks)
2. **Explain food chain. / Explain food chain using diagram.**
 - Appeared in: W21 (Q2a, 03 marks), W23 (Q1a, 04 marks)
3. **Explain: Carbon cycle.**
 - Appeared in: W21 (Q2c, 04 marks), W23 (Q1b, 07 marks)
4. **Draw and explain the hydrologic cycle.**
 - Appeared in: W21 (Q2c, 04 marks)
5. **Explain factors affecting ecosystem.**
 - Appeared in: W21 (Q2a, 03 marks)
6. **Explain ecological footprint.**
 - Appeared in: W23 (Q1a, 03 marks)
7. **Explain Eltonian pyramid. / Write short note: Ecological pyramid.**
 - Appeared in: S22 (Q1a, 03 marks), W23 (Q1b, 04 marks)

Other Important Questions:

- What is biodiversity? Give its types.
 - Appeared in: W21 (Q2b, 03 marks)
- Explain Eco-system with its classification and component.
 - Appeared in: W23 (Q1c, 07 marks)
- Describe the forest ecosystem state and explain the effects of deforestation and suggest the methods to conserve forest ecosystem.
 - Appeared in: S22 (Q1c, 07 marks)
- What are the Bio-geochemical cycle? Describe any two cycle of them.

- Appeared in: S22 (Q1c, 07 marks)
- Explain Nitrogen cycle.
 - Appeared in: W23 (Q1c, 07 marks)
- When ecological overshoot occurs? Explain with reasons.
 - Appeared in: W23 (Q1a, 03 marks)
- Describe global ecological overshoot.
 - Appeared in: S22 (Q1b, 04 marks)
- What is carrying capacity of earth?
 - Appeared in: W23 (Q1d, 03 marks)
- How food web relates to food chain?
 - Appeared in: W23 (Q1e, 04 marks)
- Classify aquatic ecosystem. Explain marine ecosystem.
 - Appeared in: W23 (Q1c, 07 marks)

Unit 2: Pollution and its types

Repeated Questions:

1. **Define the terms: ‘Pollution’ and ‘Pollutant’. / Define pollution and its source. Explain the classification of pollutants.**
 - Appeared in: W21 (Q1b, 02 marks), S22 (Q2a, 03 marks), W23 (Q2c, 07 marks)
2. **What is noise pollution? What is unit of intensity of sound? / Write effect on noise pollution. / Enlist the types of environmental pollution and give the effects of noise pollution.**
 - Appeared in: W21 (Q1c, 02 marks), S22 (Q2a, 03 marks), W21 (Q2d, 04 marks)
3. **What is solid waste management? Give its objectives. / Describe solid waste management. / Explain in brief “Solid waste Management”.**
 - Appeared in: W21 (Q1d, 02 marks), S22 (Q2c, 07 marks), W23 (Q5b, 04 marks)
4. **What is e-waste? Give effects of e-waste on environment and humans. / What is E-waste ? Write impact of E-waste on environment and human health. How to recycle E-waste ? / Explain E-waste classification and effects.**
 - Appeared in: W21 (Q3a, 03 marks), S22 (Q2c, 07 marks), W23 (Q2b, 04 marks)
5. **Distinguish BOD and COD. / Explain (1) BOD (2) COD**
 - Appeared in: W23 (Q2a, 03 marks), W23 (Q2a, 03 marks)
6. **List the waste water quality parameter.**
 - Appeared in: W23 (Q2a, 03 marks)
7. **Explain Recycle of E waste.**
 - Appeared in: W23 (Q2b, 04 marks)

Other Important Questions:

- What is water pollution ? Write list of main water pollutant ?
 - Appeared in: S22 (Q2b, 04 marks)
- Explain short note on gravity settling chamber equipment to control air pollution.
 - Appeared in: S22 (Q2b, 04 marks)
- Enlist equipment’s used to control air pollution and explain any one.
 - Appeared in: W21 (Q2d, 04 marks)
- Explain Electrostatic precipitators.
 - Appeared in: W23 (Q2c, 07 marks)
- What is plastic waste? Give effects of plastic waste.
 - Appeared in: W21 (Q3a, 03 marks)
- Give main sources of solid waste.

- Appeared in: W21 (Q3b, 03 marks)
- Enlist various methods of solid waste disposal and explain any one.
 - Appeared in: W21 (Q3b, 03 marks)
- Classify e-waste. How e-waste is recycled?
 - Appeared in: W23 (Q1j, 07 marks)
- Which are signs of polluted water? List major sources of water pollution.
 - Appeared in: W23 (Q1i, 04 marks)
- Write a note on: air pollution.
 - Appeared in: W23 (Q1f, 07 marks)
- Explain bad effects of plastic waste on environment.
 - Appeared in: W23 (Q1h, 03 marks)
- Classify solid waste.
 - Appeared in: W23 (Q1k, 04 marks)

Unit 3: Renewable sources of energy

Repeated Questions:

1. **Explain the working principle of horizontal axis wind turbine. / Give the comparison between Horizontal Axis and Vertical Axis wind mills.**
 - Appeared in: S22 (Q3c, 07 marks), W23 (Q3b, 04 marks), W23 (Q1c, 07 marks)
2. **Explain construction and working of Biogas plant with sketch. / Explain working principle of biogas plant.**
 - Appeared in: W23 (Q3c, 07 marks), W23 (Q4b, 04 marks)
3. **Explain the principal and working of solar photovoltaic cell. / State the working of solar cell. / With the use of diagram explain solar photovoltaic System.**
 - Appeared in: S22 (Q3c, 07 marks), W23 (Q3a, 03 marks), W23 (Q1k, 07 marks)
4. **Give a comparison of conventional and Non conventional energy sources. / Comparison of conventional and nonconventional energy source.**
 - Appeared in: S22 (Q3b, 04 marks), W23 (Q5b, 04 marks)
5. **Explain need for renewable energy. / Explain Need of Renewable energy.**
 - Appeared in: S22 (Q3a, 03 marks), W23 (Q4a, 03 marks)

Other Important Questions:

- Give classification of wind turbines and explain horizontal axis wind turbine.
 - Appeared in: S22 (Q3c, 07 marks)
- Write a short note on Geo thermal energy. / Explain in brief (1) Geothermal energy
 - Appeared in: S22 (Q3b, 04 marks), W23 (Q3c, 07 marks)
- Enlist types of solar cells.
 - Appeared in: W21 (Q1e, 02 marks)
- Explain Savonious wind mill with a neat sketch.
 - Appeared in: W21 (Q3d, 04 marks)
- Explain the working of Liquid Flat Plate Collector with a neat sketch.
 - Appeared in: W21 (Q3c, 04 marks)
- Write short note on solar pond.
 - Appeared in: W21 (Q3c, 04 marks)
- List the advantages of flat plate collector.
 - Appeared in: W23 (Q3a, 03 marks)
- What is wind farm? List its advantages.
 - Appeared in: W23 (Q3b, 04 marks)
- Explain in brief (2) Tidal energy. / Write advantages and disadvantages of tidal energy.
 - Appeared in: W23 (Q3c, 07 marks), W23 (Q4a, 03 marks)
- Explain working of natural circulation solar water heater.
 - Appeared in: W23 (Q1l, 04 marks)

Unit 4: Climate Change

Repeated Questions:

1. **Explain Green house effect. / Write a short note on Green House gases. / Explain: (1) Greenhouse effect**
 - Appeared in: S22 (Q4a, 03 marks), S22 (Q4a, 03 marks), W23 (Q4c, 07 marks), W23 (Q5b, 04 marks)
2. **Explain ozone layer depletion. / Give effects of ozone layer depletion.**
 - Appeared in: S22 (Q4b, 04 marks), W23 (Q4b, 04 marks), W23 (Q5a, 03 marks)
3. **Explain climate change. / What is climate change?**
 - Appeared in: W21 (Q1f, 02 marks), W23 (Q4b, 04 marks), W23 (Q4a, 03 marks)
4. **Explain climate change Management. / Write international protocol to prevent climate change management.**
 - Appeared in: S22 (Q4b, 04 marks), W23 (Q4c, 07 marks)
5. **Write short note on global warming. / Give effects of climate change.**
 - Appeared in: W21 (Q5a, 04 marks), W23 (Q4c, 07 marks), W23 (Q4a, 03 marks)

Other Important Questions:

- Explain the term “climate changes and state its causes and effects”
 - Appeared in: S22 (Q4c, 07 marks)
- Discuss Factors affecting climate change.
 - Appeared in: W23 (Q4a, 03 marks)
- Write some of measures to control global warming.
 - Appeared in: W23 (Q4b, 04 marks)
- Which are some important agreements for mitigating climate change at global level?
 - Appeared in: W23 (Q4c, 07 marks)
- What is C.F.C?
 - Appeared in: W21 (Q1g, 02 marks)
- Give effects of ozone layer depletion.
 - Appeared in: W21 (Q4b, 04 marks)

Unit 5: Environmental legislation and sustainable practices

Repeated Questions:

1. **Explain 5R. / Explain the concept of “5R”.**
 - Appeared in: S22 (Q5c, 07 marks), W23 (Q5c, 07 marks), W23 (Q5c, 07 marks)
2. **Explain various methods of rain water harvesting. / Enlist various methods of rainwater harvesting.**
 - Appeared in: S22 (Q5c, 07 marks), W21 (Q1j, 02 marks), W23 (Q5c, 07 marks)
3. **Enlist various Acts related to environment in India and explain any one. / Explain (1) The water Act ,1974 (2) The Environment Act ,1986**
 - Appeared in: W21 (Q1i, 02 marks), W21 (Q5d, 03 marks), W23 (Q5c, 07 marks)
4. **Explain the concept of “Eco Tourism”**
 - Appeared in: W23 (Q5a, 03 marks)
5. **Give goal and advantage of green building. / Explain the benefits of Green building.**
 - Appeared in: S22 (Q5b, 04 marks), W21 (Q5c, 03 marks)

Other Important Questions:

- Explain “Khet Talavadi”.
 - Appeared in: S22 (Q5a, 03 marks)
- What is Life cycle analysis (LCA)?
 - Appeared in: S22 (Q5a, 03 marks)
- Give main features of the biological diversity Act, 2002.
 - Appeared in: S22 (Q5b, 04 marks)
- Explain the concept “Carbon Credit”.
 - Appeared in: W23 (Q5a, 03 marks)
- Write salient features of wild life protection act, 1972.
 - Appeared in: W23 (Q5a, 03 marks)
- Which are the environmental policies in India?
 - Appeared in: W23 (Q5b, 04 marks)
- Give advantages of ISO-14000.
 - Appeared in: W21 (Q1h, 02 marks)
- Write short note on: Virtual water.
 - Appeared in: W21 (Q2b, 03 marks)
- Explain useful chemical substances.
 - Appeared in: W23 (Q1l, 04 marks)
