

GOJAN SCHOOL OF BUSINESS AND TECHNOLOGY
DEPARTMENT OF CHEMISTRY
GE6351 -Environmental Science and Engineering

**Unit I- Environment, Ecosystems and
Biodiversity**

Part- A (2 marks)

- 1 What are food chain and food web?
2. Define the terms producers and consumers.
3. Define Genetic diversity and species diversity.
4. What is Biomes? How a biome does differs from an ecosystem.
5. What are the characteristics of the desert ecosystems?
6. Define Estuaries.
7. Give the bio-geographical classification of India.
8. Distinguish between primary succession and secondary succession.
9. What are endangered and endemic species?
10. Name the four ecosystems.
- 11 Enumerate the human activities which destroy the biodiversity.
12. Mention the various subdivisions of the biotic and abiotic components of the Environment.
13. How are the laws of thermodynamics related to energy flow?
14. What is red data book?
15. What are the advantages of In-situ and Ex-situ conservation biodiversity?
16. What is ecosystem?
- 17 What are tropical levels?
- 18 What is meant by keystone species?
19. Define biodiversity.
20. Define bio-magnification of DDT
21. Define ecological succession.
22. Define producers, consumers and decomposers
- 23 What are autotrophic and heterotrophic components of an ecosystem?

Part- B(16 marks)

1. (i) Explain the various threats to Biodiversity.
(ii) What are the causes for loss of biodiversity?
2. (i) What is meant by value of biodiversity? Explain different values of biodiversity.
(ii) Explain In-situ and Ex-situ conservation of biodiversity.
3. (i) Explain the role of biodiversity of global, national and local levels.
(ii) Describe the term hot spot in biodiversity
4. (i) Briefly explain the energy flow through ecosystem.
(ii) Describe the types, characteristic features, structures and function of Forest ecosystem,
5. (i) Discuss the concept of ecological succession.
(ii) Briefly explain the structural and functional components of an ecosystem.
6. (i) Write a note on endangered and endemic species.
(ii) Explain the scope and significance of environmental studies.
7. (i) Name and briefly describe two hot spots of biodiversity in India
(ii) Describe the types, characteristic features, structures and function of aquatic ecosystem.
8. (i) Discuss the major features, structure and composition of grassland ecosystem.
(ii) Discuss the structure and composition of fresh water ecosystem.
9. (i) What are the cycles in ecosystems? Describe carbon cycle.
(ii) Give the classification and explain various levels of biodiversity.
10. (i) Discuss the structure and function of desert ecosystem.
(ii) Discuss the biogeochemical cycle in the ecosystem.

Unit II -Environmental Pollution

Part- A (2 marks)

1. Name any four air pollutants and their sources and impacts.
2. Define marine pollution.
3. Define the term Tsunami.
4. What are point and non-point sources of water pollution?
5. What are the sources of soil pollution?
6. State the role of an individual in the prevention of pollution.
7. Define disasters.
8. When does a sound cause noise pollution.
9. What are the types of solid waste?
10. What is soil pollution?
11. Define photochemical wastes.
12. Define hazardous wastes.
13. Define noise pollution.
14. Write any four major water pollutants.
15. Define floods.
16. What is a smog? Give the types and effects of smog.
17. Mention the physical and chemical parameters of quality of water.
18. Give the methods by which heavy metals are removed by absorption.
19. What are the 3 R's in solid waste management?
20. What is meant by BOD and COD.

Part- B (16 marks)

1. (i) Explain the methods of disposal of municipal solid waste. (ii) Write a note on disposal of radioactive wastes.
2. (i) Explain the causes, effects and control measures of water pollution. (ii) Explain the effects of nuclear and Radiation pollution.
3. (i) Explain the causes, effects and control measures of marine pollution. (ii) Write a short note on disaster management.
4. (i) Discuss the major soil pollution and their impact. (ii) What is thermal pollution and explain its effects.
5. (i) Discuss about the significance of hazardous waste management. (ii) Discuss the major air pollutants and their impact.
6. (i) Describe the sources, effects and control of noise pollution. (ii) Discuss the role of individual in preventing pollution.
- 7(i) What is acid rain? How it is formed? Give its effects. (ii) What is ozone? How it is depleted? Enumerate the effects of ozone layer depletion.
- 8(i) Discuss in detail about waste water treatment process. (ii) Discuss the role of individual in prevention of pollution.
- 9(i) Draw the flow chart for solid waste management and give the sources of it. (ii) Discuss in detail about the Bhopal gas tragedy and Chernobyl nuclear disaster.
10. (i) How is the water treated by zeolite process. (ii) Explain in detail about the demineralization process.

Unit III- Natural Resources

Part- A (2 marks)

1. What are renewable and non-renewable resources?
2. What is meant by deforestation?
3. Mention four effects of deforestation.
4. State the need for public awareness for solving environmental problems.
5. What is geothermal energy?
6. Write any four functions of forest.
7. What are landslides?
8. What are soil fertility?
9. What is soil leaching?
10. Define desertification.
11. Define overgrazing. What are the effects of overgrazing?
12. Distinguish between water logging & Salinity.
13. Define environmental impact statement.
14. State the need for public awareness for solving environmental problems.
15. Give the functions of forest.
16. List the areas where the minerals are used.
17. Give the steps involved in an anaerobic digestion process.
18. What is biogas? Give its composition and uses.
19. Define sustainable development.
20. Give the types of biodegradable pollutants with an example.

Part- B (16 marks)

1. (i) Discuss briefly the ill-effects of deforestation. (ii) What are the effects of modern Agriculture?
2. (i) What are the causes of soil erosion & deforestation? Explain in detail. (ii) Discuss the consequences of overutilization of surface and Ground water.
3. (i) Write the effects of extracting and using mineral resources (ii) Discuss the causes of land degradation.
4. (i) Explain how the alternate energy sources play an important role in environment impact. (ii) Write a note on solar production of electricity.
5. (i) Explain the role of an individual in environment protection. (ii) Explain the methods of harnessing wind and ocean thermal energy.
6. (i) Compare nuclear power with coal power. (ii) Write briefly on the Hydrologic Cycle.
- 7(i) What are the ecological benefits of forest? (ii) Environmental damage caused by mining last longer after the mine has closed – explain.
- 8(i) Discuss the effects of dams on forest and tribal people. (ii) Explain the benefits and problems of constructing dam.
- 9(i) Explain any two water conflicts confining to India. (ii) Explain various steps involved in anaerobic digestion.
- 10(i) Explain the production and uses of biogas (ii) Write notes of bioconversion of pollutants and degradation of proteins.

UNIT IV- Social Issues and the Environment

Part- A (2 marks)

- 1 Define sustainable development.
2. What is rainwater harvesting?
3. Give the water shed management techniques.
4. Define CDM.
5. What is environmental audit?
6. What is meant by ISO 14000?
7. State a few drawbacks of pollution related acts.
8. What are the objectives of environmental impact assessment?
9. Define disaster.
- 10 Define floods.
- 11 Define cyclone management.
- 12 How does an earthquake occur?
- 13 What are landslides?
- 14 What are the harmful effects of landslides?
- 15 Define Tsunami.
- 16 Define urbanisation.
17. Mention the types of rain water harvesting.
- 18 What are the objectives of watershed management?
19. What is wasteland reclamation?
20. What is consumerism?
21. Name any four environmental protection acts.

Part- B (16 marks)

- 1 (i) Explain the agenda for sustainable development.
(ii) Explain the need and strategy of water conservation.
2. (i) Explain wasteland reclamation.
(ii) Discuss nuclear accidents and holocaust.
3. (i) Define environmental ethics. Mention the problems and solutions related to environment
(ii) Explain briefly on the Indian Environmental Acts.
4. (i) Explain watershed management.
(ii) Explain rain water harvesting.
5. (i) Explain resettlement and rehabilitation issues.
(ii) Explain the urban problems related to energy.
6. (i) Give the principles of Green chemistry.
(ii) How is environment protected through Legislation? Explain.
- 7.(i) What is consumerism? Mention the objectives and factors affecting consumerism.
(ii) Explain in detail on environment and water act.
- 8.(i) What is a biomedical waste? Give the steps involved in management of biomedical waste.
(ii) What is an eco mark? Give the objectives of it. Give the criteria for awarding eco mark.
- 9(i) Give the drawbacks of environmental laws.
(ii) What is an earthquake? Enumerate its effects. Mention the methods to mitigate the disaster.
- 10(i) Explain various emergency management tips to be under taken in case of any disaster.
(ii) State different natural calamities and explain one in detail.

UNIT V - Human Population and the Environment

Part- A (2 marks)

1. Define the term population dynamics.
2. What do you mean by population growth?
3. Define immigration and emigration.
4. What is meant by population explosion?
5. What do you understand by logistic growth?
6. State any four factors that increase or decrease the population.
7. What is the role of Empowered Action Group (BAG) in family welfare programme?
8. What is meant by value of education?
9. What is meant by HIV?
10. What is meant by AIDS?
11. How AIDS can be controlled?
12. List out the schemes for child welfare.
13. What are the policies for women development?
14. Suggest any four methods of staying healthy.
15. List any four common violence against women.
16. What is NIMBY syndrome?
17. Define doubling time with reference to population growth.
18. Define population density.
19. Define population equation.
20. Define exponential growth.
22. Define demographic transition.
23. Define human rights.
24. What are the methods of imparting value education?

Part-B (16 marks)

- I. (i) Explain briefly the population explosion.
(ii) Explain the role of IT in environment and human health. ' '
2. (i) Explain in detail about population growth.
(ii) Explain in detail about family welfare programme, training and development.
3. (i) Explain the value of education.
(ii) Explain briefly on Human rights.
4. (i) Explain HIV/AIDS.
(ii) Explain the various policies and programmes for women and child development.
5. (i) Write short notes on a) women and child welfare b) Human rights c) Value education.
(ii) Outline the various family welfare plans in the post independent India.
6. (i) Explain the role of NGOs in environmental protection and health.
(ii) Discuss about the environmental and social problems faced by a large Indian city like Chennai.
7. (i) Draw a typical population pyramid of a developing country and discuss how it differs from that of a developed country.
(ii) Deterioration of environment leads to Deterioration of human health. – Justify.
8. (i) Write in detail on implementing family planning programme.
(ii) Discuss the factors influencing family size.
9. (i) Population explosion leads to environmental deterioration. Explain.
(ii) Write a note on various methods of family planning.
10. (i) With a neat diagram explain the variation in population growth among various nations.
(ii) What is EIA? Give the objectives, benefits and process of EIA.