



SYED AMMAL ENGINEERING COLLEGE

(Approved by the AICTE, New Delhi, Govt. of Tamilnadu and Affiliated to Anna University, Chennai)

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

GE6351- Environmental Science and Engineering

Unit – I Environment, Ecosystems and Biodiversity

Part – A (2 marks)

1. Define biodiversity.
2. State food chain and food web.
3. List some of the hot spots of biodiversity in India.
4. Define ecological succession and ecological pyramid.
5. Describe estuary in coastal zones?
6. Differentiate between endangered and epidemic species.
7. Examine the value of Bio-diversity.
8. Demonstrate the function of Ecology and its cycle.
9. Explain Ecosystem.
10. Write the classification of Biodiversity.
11. Analyze what is an Abiotic environment?
12. Explain endangered species.
13. Summarize about Species & Genetic diversity.
14. Discuss about common hazardous chemical.
15. Compare biotic and abiotic components of an ecosystem.
16. Sketch and explain biogeochemical cycles.
17. Illustrate four important features of desert ecosystem.
18. Write about environmental science.
19. State the need for public awareness for solving environmental problems.
20. Summarize the aesthetic values of biodiversity.

Part-B

1. (i) Describe the types, characteristics features, structures and functions of (8)
 - (1) Forest ecosystem
 - (2) Aquatic ecosystem.(ii) Explain the following: (8)
 - (1) Ecological Succession

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- (2) Ecological Pyramids.
2. (i) Examine the major causes of man-wild conflicts? Discuss the remedial steps that can curb the conflict. (8)
(ii) Explain briefly the energy flow through ecosystem. (8)
 3. (i) Explain the major factors that are responsible for the loss of biodiversity. (8)
(ii) Analyze the importance and values of biodiversity reserves.
 4. (i) Define ecosystem. Give an account of structure and functions of grassland ecosystem. (8)
(ii) Define biodiversity. Discuss the values and significance of biodiversity. (8)
 5. (i) Sketch the Nitrogen cycle with a brief note. (8)
(ii) Explain conservation of biodiversity? State and explain the basic approaches to wild life conservation. (8)
 6. (i) Describe food chains and food webs? (6)
(ii) Define the cycles in eco systems? (5)
(iii) Describe carbon cycle.(5)
 7. With a neat sketch, discuss the structure and function of Ecosystem. (16)
 8. (i) Discuss the hot-spots of biodiversity in India. (8)
(ii) Explain the energy flow in the ecosystem with suitable diagram. (8)
 9. Give an account of structure and functions of desert ecosystem with neat diagram. (16)
 10. Write a note on physical, chemical and biological hazards in the environment. (16)
 11. Explain oxygen cycle briefly with diagram. (16)
 12. Predict the need for bio geographical classification? Briefly explain in detail. (16)
 13. Describe the bio geographical classification of India. (16)
 14. (i) Examine ecosystem. What are its components? (8)
(ii) Explain the various threat to biodiversity. (8)

Unit-2 Environmental Pollution

Part – A (2 marks)

1. Define Pollution. Name any four air pollutants, and their sources and impacts.
2. Explain noise pollution.
3. Analyze the role of individual in pollution prevention.
4. Describe acid rain.
5. Classify the difference between sound and noise.
6. List out the sources and causes of thermal pollution.
7. Explain the sources and hazards of marine pollution.

8. Compare BOD and COD.
9. List out the types of land pollution.
10. Relate the effects of ozone on plants.
11. Summarize thermal pollution.
12. Show the major sources of solid waste cause.
13. Illustrate any four nuclear hazards.
14. Give two effects of Ozone layer depletion.
15. Describe bioaccumulation?
16. Examine the point and nonpoint sources?
17. Write about Municipal Solid Wastes (MSW).
18. State composting and what are incinerators?
19. Define photochemical smog.
20. Generalize aerobic and anaerobic oxidation.

Part-B

1. (i) Explain the causes, effects and control measures of water pollution. (8)
(ii) Explain the various methods of controlling air pollution. (8)
2. (i) Define the following : (8)
 - (1) Nuclear hazards.
 - (2) Thermal pollution.(ii) Examine the ill effects of marine pollution with help of a case study. (8)
3. (i) State the causes and effects of air pollution? (8)
(ii) State the control and prevention measures of municipal solid wastes. (8)
4. (i) Examine the hazards caused by nuclear wastes briefly. (8)
(ii) Analyze the role of an individual in pollution prevention. (8)
5. Explain the various control measures of noise pollution with relevant diagrams. (8)
6. (i) Summarize some informative notes on water treatment processes. (8)
(ii) Show the steps to be taken to prevent pollution of our oceans? (8)
7. (i) List the adverse effects caused by solid wastes. (8)
(ii) Prepare and portrait the steps to manage solid wastes (8)
8. (i) Discuss the effects and control measures of soil pollution. (8)
(ii) Analyze and explain the following
“As an individual how will you prevent the pollution load in the environment?” (8)
9. (i) Discuss on chemical composition of atmosphere. (8)
(ii) Explain about the physical and chemical properties of terrestrial and marine water. (8)

10. Write about water treatment processes and water quality parameters with relevant diagram. (16)

11. Define marine pollution. What are the causes of marine pollution? (8)

12. (i) Describe various chemical and photochemical reactions in the atmosphere. (8)

(ii) Explain the source and effects of noise pollution. (8)

13. Classify various water pollutants. Give examples of each type. (16)

14. Discuss on control of particulate and gaseous emission. (16)

Unit-3 Natural Resources

Part – A (2 marks)

1. Explain renewable and non-renewable energy resources.
2. Define land degradation?
3. Explain desertification.
4. Examine overgrazing and the consequence of overgrazing.
5. Give any two problems associated with chemical fertilizer usage.
6. Define eutrophication.
7. Describe deforestation.
8. Evaluate the term landslides and explain what man induced landslides are.
9. Write about the major causes of Earth quake.
10. List the reasons of water logging and their effects.
11. Describe fossil fuels and why they are non-renewable
12. State green revolution.
13. State the environmental effects of extracting & using mineral resources.
14. Examine geo thermal energy.
15. Analyze soil fertility and soil leaching.
16. Deduce the effects of mining on the environment.
17. Infer any two problems caused by the construction of dams and explain how Dams are useful to human beings?
18. Discuss super pests and explain the type of minerals.
19. Generalize salinization and crop rotation.
20. Illustrate biological magnification and organic farming.

Part-B

1. (i) Discuss the impact of mining on environment and human health. (8)
(ii) Infer the effects of deforestation. Is deforestation justified? Comment. (8)
2. (i) Explain the merits and demerits of dam. (8)
(ii) List some informative notes on causes of modern agriculture. (8)
3. (i) Describe the following :
 - (1) Food resources.
 - (2) Mineral resources. (8)(ii) Draw a neat diagram and explain the production of biogas. (8)
4. (i) Examine the causes for deforestation. (8)
(ii) Define land degradation? Discuss the factors responsible for land degradation. (8)
5. (i) State the changes caused by agriculture and overgrazing? (8)
(ii) Mention the uses of Biogas. (8)
6. Brief note on Global food problems, its causes and effects. (16)
7. (i) List the importance of land as a natural resource? (8)
(ii) Define the impact of urbanization and industrialization on land? (8)
8. (i) Explain major use of forest. (8)
(ii) Justify how the ecological uses of forests surpass commercial uses? (8)
9. (i) Explain droughts and floods with respect to their occurrences and impacts. (8)
(ii) Point out the role of an individual in conservation of natural resources. (8)
10. Describe Environmental biochemistry. (16)
11. Write a note on construction of dams and their effects on forests and tribal people. (16)
12. (i) List the effects of modern agriculture? (8)
(ii) Illustrate the advantages of biogas? (8)
13. (i) Enlist and define renewable and non-renewable energy resources. Why are non-renewable energy resources preferred for energy utilization now-a-days? What are the advantages and disadvantages of harnessing non-renewable energy resources? (10)
(ii) Explain conversion of pollutants with examples. (6)
14. (i) Explain in detail on various renewable energy sources in the earth. (8)
(ii) Discuss in detail on:
 - (1) Land resources (4) (2)
 - (2) Soil erosion and desertification. (4)

Unit-4 Social Issues and the Environment

Part – A (2 marks)

1. List out the advantages of rain water harvesting.
2. Define consumerism.
3. Explain disaster management.
4. Differentiate between inter and intra generational equity in sustainable developments.
5. State Rain water harvesting and list its objectives
6. Write the social values of environmental education.
7. Define sustainable development and explain sustainability in context to environment.
8. Write short notes on Wild life protection act.
9. Summarize the major effects of global warming.
10. Examine the objectives of water act.
11. Explain environmental ethics.
12. Describe greenhouse gases.
13. Illustrate greenhouse effect.
14. Define holocaust.
15. Illustrate 3R principle with its quote.
16. Discuss some important points on Earth Summit – 1992.
17. Analyze the objectives (or) principles of watershed management.
18. Differentiate between Re-habilitation & Re-settlement of people.
19. Mention the objectives of Environment Protection Act.
20. Enlist the objectives of Air-Pollution Act.

Part-B

1. (i) Name the laws that have framed for environmental protection and mention the objectives for each act. (8)
(ii) Discuss various measures for wasteland reclamation. (8)
2. (i) Write a note on:
(1) Earthquake
(2) Cyclone. (8)
(ii) Explain in detail, how biomedical wastes are managed and handled. (8)
3. (i) Explain the effects of nuclear accidents. (8)
(ii) List out the salient features of forest conservation act in detail. (8)
4. (i) Explain rain water harvesting. What are the purposes served by it? (8)
(ii) Write about the causes and effects of Ozone layer depletion. (8)
5. (i) Summarize the objectives of water conservation. How is it carried out? (8) (ii) Explain the effects of an earthquake. What measures should be taken to mitigate

- this disaster? (8)
6. Describe the various urban problems related to energy. (16)
 7. (i) Discuss the resettlement and rehabilitation of people, its problems and concerns. (8)

(ii) Illustrate the salient features of wildlife protection act. (8)
 8. (i) Justify why Environmental protection Act 1986 is referred as an umbrella act? Discuss the major environmental protection rules, 1986. (8)
(ii) Explain global warming and its measures to prevent it and also explain the effects of global warming. (8)
 9. Enlist the environmental ethics that are to be followed by the non-governmental organizations. (16)
 10. (i) Describe environment refugees. (4)
(ii) List the major causes for displacement of native tribal people. (12)
 11. (i) Describe the issues about climate change and give solutions for solving this problem. (8)
(ii) Illustrate the various principles of green chemistry. (8)
 12. (i) Define acid rain. What are the impacts on the man and the environment? (8)

(ii) Explain the agenda of “sustainable development”. (8)
 13. Discuss the recent approaches to achieve sustainable development. (16)
 14. (i) Discuss the various applications of green chemistry for achieving sustainable development. (8)
(ii) Explain the salient features of Water Act. (8)

Unit-5 Human Population and the Environment

Part – A (2 marks)

1. State the role of information technology in Environment.
2. Define population explosion.
3. List out the advantages of family welfare program.
4. State doubling time. How it is calculated?
5. Explain HIV and the sources of HIV infection.
6. Define value education
7. Give the significance of value education.
8. Analyze the objectives of EIA.
9. Write the reason for child labor.
10. Define the term Nuclear energy.
11. Summarize GIS? State any four applications of GIS.
12. Give two effects of population growth.
13. Compare under-nutrition & mal-nutrition.

14. Write short notes on population dynamics.
15. Report the factors affecting population size.
16. Rank the different kinds of problems created due to Urbanization.
17. Mention the types of health hazards with examples.
18. Examine the meaning of remote sensing.
19. Illustrate Zero Population growth and total fertility rates.
20. Describe population stabilization.

Part-B

1. (i) Define AIDS. What are the sources and mode of transmission of HIV infection? (8)

(ii) Write notes on the following: (1)
Women and child welfare in India. (2)
Human rights. (8)
2. (i) List the objectives and elements of value education. How can the same be achieved? (8)
(ii) Discuss how population explosion affects the environment seriously. (8)
3. (i) Describe the role of information technology in environment and human health. (8)

(ii) Show the population variation among the nations with relevant graph. (8)
4. Point out the advantages of family welfare programme. (16)
5. (i) Sketch and explain the growth pattern of India's population. (8)
(ii) Write the connection between the environment and human health. (8)
6. Describe universal declaration of Human Rights. What is its importance in achieving the goals of equity, justice and sustainability? (16)
7. Describe the role of NMIS, ENVIS and GIS in dissemination of Environmental information and Environmental management? (16)
8. Discuss in detail the various health schemes initiated by Indian government. (16)
9. Explain the major choice in modern birth control. (16)
10. Plot a graph showing the variation in percentage of population across the India and also write a brief note on it. (16)
11. Explain about Environmental Impact Analysis (EIA). (16)
12. Illustrate how remote sensing is used in the issues related to Human population and the environment. (16)
13. Discuss the hurdles encountered for women and child welfare programs in India. (8)
14. (i) State sparsely populated areas. Give examples and reasons for poor population in those areas. (8)

(ii) Define HIV. What are the preventive measures suggested? (8)

