GUJARAT TECHNOLOGICAL UNIVERSITY

DI -5 SEMESTER – OLD PAPER – W23 TO S25 – QUESTION BANK(English)

Subject Name & Code:

Environmental Engineering & Pollution Control- 4350608

Unit I: Introduction & Environment Problems, Emerging Technologies for Environment Engineering

Repeated Questions:

1. **Define: 1. Ecosystem 2. Biodiversity 3. Environment**
    - Appeared in: W24 (Q1a, 03 marks)
2. **Define: 1. Environment 2. Pollution 3. Ecology**
    - Appeared in: W23 (Q1a, 03 marks)
3. **Explain the nitrogen cycle with a neat sketch and explain its practical implementation in the world. / Explain Nitrogen Cycle in Detail.**
    - Appeared in: W24 (Q1c, 07 marks), W23 (Q1c, 07 marks)
4. **Explain the importance of wastewater management.**
    - Appeared in: W24 (Q3a, 03 marks), W23 (Q3a, 03 marks)

Other Important Questions:

1. **Explain the components of the environments.**
    - Appeared in: W24 (Q1b, 03 marks)
2. **Illustrate the sulphur cycle with a neat sketch and explain its practical implementation in the world.**
    - Appeared in: W24 (Q1c (OR), 07 marks)
3. **Describe Objectives of studying Ecology.**
    - Appeared in: S24 (Q1a, 03 marks)
4. **List out components of Environment and explain any one in detail.**
    - Appeared in: S24 (Q1b, 04 marks)
5. **Describe in brief typical components of water treatment plant with the help of flow diagram.**
    - Appeared in: S24 (Q1c, 07 marks)

6. **Describe in brief typical components of wastewater treatment plant with the help of flow diagram.**
    - Appeared in: S24 (Q1c (OR), 07 marks)
7. **Write a Short note on : "Component of Ecosystem"**
    - Appeared in: W23 (Q1b, 04 marks)
8. **Explain Carbon Cycle in Detail.**
    - Appeared in: W23 (Q1c (OR), 07 marks)
9. **Discuss the examples of emerging technologies in wastewater treatment.**
    - Appeared in: W24 (Q5b, 04 marks)
10. **Explain necessity of Environmental Audit.**
    - Appeared in: W24 (Q5a (OR), 03 marks), W23 (Q5a (OR), 03 marks)
11. **Discuss the benefits of using Constructed Wetlands in wastewater treatment.**
    - Appeared in: W24 (Q5b (OR), 04 marks)
12. **Write a short note on "Constructed Wetlands".**
    - Appeared in: W23 (Q3c, 07 marks)
13. **Write a short note on "Membrane Bioreactors" (MBRs).**
    - Appeared in: W23 (Q3c (OR), 07 marks)
14. **Write a short note on "Advanced Oxidation Processes (AOPs)".**
    - Appeared in: W24 (Q3b, 04 marks)
15. **Write a short note on "Membrane filtration".**
    - Appeared in: W24 (Q3b (OR), 04 marks)
16. **Write short notes on (i) Membrane Filtration (ii) Advance Oxidation Process**
    - Appeared in: S24 (Q2c, 07 marks)
17. **Write short notes on (i) Membrane Bioreactors (ii) Electrochemical processes**
    - Appeared in: S24 (Q2c (OR), 07 marks)

Unit II: Environmental Pollution & its Remedial Measures

Repeated Questions:

1. **Explain water pollution in detail.**
    - Appeared in: W24 (Q2a, 03 marks), W23 (Q2a (OR), 03 marks)
2. **Explain Sewage Treatment Plant with flow chart in detail.**
    - Appeared in: W24 (Q3c, 07 marks), W23 (Q2c (OR), 07 marks)
3. **Explain Water Treatment Plant with flow chart in detail.**
    - Appeared in: W24 (Q3c (OR), 07 marks), W23 (Q2c, 07 marks)
4. **Define pH. Explain the test to determine pH of a water sample in Laboratory. / Define pH. Explain the two test to determine pH value of a water sample.**
    - Appeared in: W24 (Q2c, 07 marks), W23 (Q4c (OR), 07 marks)

Other Important Questions:

1. **Describe the remedial measures to control air pollution.**
    - Appeared in: W24 (Q2b, 04 marks)
2. **Define BOD. Explain the test to determine BOD of a water sample.**
    - Appeared in: W24 (Q2c (OR), 07 marks)
3. **Write a Short note on : "Causes of Air pollution"**
    - Appeared in: W23 (Q2b, 04 marks)
4. **Write a Short note on : "Causes of Noise pollution"**
    - Appeared in: W23 (Q2b (OR), 04 marks)
5. **Enlist the types of pollution. Explain the adverse effect of Land pollution.**
    - Appeared in: W23 (Q2a, 03 marks)
6. **State causes and effects of Land Pollution.**
    - Appeared in: S24 (Q2a (OR), 03 marks)
7. **Explain classification of Air Pollution.**
    - Appeared in: S24 (Q2a, 03 marks)
8. **Describe measures to control noise pollution.**
    - Appeared in: S24 (Q2b, 04 marks)
9. **Describe Hazardous effects of wastewater.**
    - Appeared in: S24 (Q2b (OR), 04 marks)
10. **Give the concept of preliminary treatment in wastewater treatment process.**
    - Appeared in: W24 (Q3a (OR), 03 marks)

11. **Define Turbidity. Explain the Test to determine Turbidity of a water sample in Laboratory.**
    - Appeared in: W23 (Q4c, 07 marks)
12. **Explain the physical characteristics of wastewater.**
    - Appeared in: W23 (Q4b (OR), 04 marks)
13. **Write a Short note on Biochemical Oxygen Demand (BOD).**
    - Appeared in: S24 (Q4a, 03 marks)
14. **Write a Short note on Chemical Oxygen Demand (COD).**
    - Appeared in: S24 (Q4a (OR), 03 marks)
15. **Explain Hydrological cycle with a sketch.**
    - Appeared in: S24 (Q4b, 04 marks)

Unit III: Advanced Waste Water Treatment Technology

Repeated Questions:

1. **What is secondary treatment of wastewater? Describe two units which form part of secondary treatment.**
    - Appeared in: S24 (Q3c, 07 marks)
2. **Compare / Differentiate between Recycling and Reuse.**
    - Appeared in: S24 (Q3a, 03 marks), W23 (Q4b, 04 marks), W24 (Q4b (OR), 04 marks)

Other Important Questions:

1. **What is Tertiary treatment of wastewater? Write a short note on nutrient removal.**
    - Appeared in: S24 (Q3c (OR), 07 marks)
2. **Define (i) Magnetic Separation (ii) Eddy current separation**
    - Appeared in: S24 (Q3b, 04 marks)
3. **Define (i) Screening (ii) Refining and Purification**
    - Appeared in: S24 (Q3b (OR), 04 marks)
4. **List out methods for disposal of solid waste and explain any one.**
    - Appeared in: S24 (Q3a (OR), 03 marks)
5. **Explain waste heat recovery from flue gases.**
    - Appeared in: W24 (Q4b, 04 marks)
6. **List the mechanical methods of sorting and separating the solid waste and explain any two.**
    - Appeared in: W24 (Q4c, 07 marks)
7. **Explain Optical sorting and Screening.**
    - Appeared in: S24 (Q4b (OR), 04 marks)
8. **Explain Mechanical Processing of materials for Recycling.**
    - Appeared in: S24 (Q4b, 04 marks)
9. **Give the concept of recycling in terms of solid waste.**
    - Appeared in: W24 (Q4a, 03 marks)
10. **Define: 1. Shredding 2. Grinding 3. Solid waste.**
    - Appeared in: W24 (Q4a (OR), 03 marks)
11. **Discuss the various methods for proper disposal of solid waste.**
    - Appeared in: W24 (Q4c (OR), 07 marks)
12. **Write a short note on “Bio-medical Waste and its characteristics”**

- Appeared in: W23 (Q3b, 04 marks)

13. **Write a short note on : "Municipal Solid Waste and its characteristics"**
    - Appeared in: W23 (Q3b (OR), 04 marks)
14. **Enlist types of Solid Waste.**
    - Appeared in: W23 (Q4a, 03 marks)
15. **Explain E-Waste and its characteristics in detail**
    - Appeared in: W23 (Q4a (OR), 03 marks)

Unit IV: Solid Waste - Separation and Disposal

Repeated Questions:

1. **Compare / Differentiate between Recycling and Reuse.**
    - Appeared in: S24 (Q3a, 03 marks), W23 (Q4b, 04 marks), W24 (Q4b (OR), 04 marks)
2. **List out methods for disposal of solid waste and explain any one. / Discuss the various methods for proper disposal of solid waste.**
    - Appeared in: S24 (Q3a (OR), 03 marks), W24 (Q4c (OR), 07 marks)

Other Important Questions:

1. **Define (i) Magnetic Separation (ii) Eddy current separation**
    - Appeared in: S24 (Q3b, 04 marks)
2. **Define (i) Screening (ii) Refining and Purification**
    - Appeared in: S24 (Q3b (OR), 04 marks)
3. **Explain waste heat recovery from flue gases.**
    - Appeared in: W24 (Q4b, 04 marks)
4. **List the mechanical methods of sorting and separating the solid waste and explain any two.**
    - Appeared in: W24 (Q4c, 07 marks)
5. **Explain Optical sorting and Screening.**
    - Appeared in: S24 (Q4b (OR), 04 marks)
6. **Explain Mechanical Processing of materials for Recycling.**
    - Appeared in: S24 (Q4b, 04 marks)
7. **Give the concept of recycling in terms of solid waste.**
    - Appeared in: W24 (Q4a, 03 marks)
8. **Define: 1. Shredding 2. Grinding 3. Solid waste.**
    - Appeared in: W24 (Q4a (OR), 03 marks)
9. **Write a short note on “Bio-medical Waste and its characteristics”**
    - Appeared in: W23 (Q3b, 04 marks)
10. **Write a short note on : “Municipal Solid Waste and its characteristics”**
    - Appeared in: W23 (Q3b (OR), 04 marks)
11. **Enlist types of Solid Waste.**
    - Appeared in: W23 (Q4a, 03 marks)
12. **Explain E-Waste and its characteristics in detail**
    - Appeared in: W23 (Q4a (OR), 03 marks)

Unit V: Environmental Audit and Environment Impact Assessment (EIA)

Repeated Questions:

1. **Explain the purpose / benefits and limitations / aspects of EIA. / Discuss the purposes and benefits of Environmental impact assessment (EIA).**
    - Appeared in: W23 (Q5c, 07 marks), S24 (Q5c, 07 marks), W24 (Q5c, 07 marks)
2. **Explain the necessity of Environmental Audit.**
    - Appeared in: W24 (Q5a (OR), 03 marks), W23 (Q5a (OR), 03 marks)

Other Important Questions:

1. **Explain the purpose of EIA.**
    - Appeared in: W23 (Q5a, 03 marks)
2. **What is EIA ? Explain the general aspect of EIA preparation. / Discuss the general regulation and steps in Environmental impact assessment (EIA) process.**
    - Appeared in: W23 (Q5c (OR), 07 marks), W24 (Q5c (OR), 07 marks)
3. **Explain the effect of air pollution on human health.**
    - Appeared in: W23 (Q5b, 04 marks)
4. **Explain the effect of Noise pollution on human health.**
    - Appeared in: W23 (Q5b (OR), 04 marks)
5. **List various types of Environment Audit.**
    - Appeared in: W24 (Q5a, 03 marks)
6. **Enlist format/ Main content of EIA Report.**
    - Appeared in: S24 (Q5a (OR), 03 marks)
7. **Draw a flow chart of procedure of public hearing for EIA and explain.**
    - Appeared in: S24 (Q5c (OR), 07 marks)
8. **Write a short note on Environmental Impact Statement.**
    - Appeared in: S24 (Q5b (OR), 04 marks)

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