

# CBCS SCHEME

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18CH651

## Sixth Semester B.E. Degree Examination, July/August 2022 Process Wastewater Management

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. What do you mean by sewer and sewerage system? Discuss the relative merits and demerits of separate system of sewerage and combined system of sewerage. (12 Marks)
- b. Explain BOD and discuss the advantages and disadvantages of BOD. (08 Marks)

OR

- 2 a. Discuss the effects of waste additions on physical and chemical properties of soil. (12 Marks)
- b. List and define chemical and biological characteristics of wastewater. (08 Marks)

### Module-2

- 3 a. Explain in detail various steps adapted for industrial wastes survey with suitable example. (12 Marks)
- b. Discuss in detail the grab sampling technique and outline its applications and limitations in Industrial Waste Characterization. (08 Marks)

OR

- 4 a. What is biomonitoring and continuous monitoring of industrial wastewater? (12 Marks)
- b. Outline the real time monitoring method of pH and conductivity of industrial wastewater sample. (08 Marks)

### Module-3

- 5 a. What do you mean by equalization of wastes? Explain the procedure adapted during equalization of industrial wastes. (10 Marks)
- b. List the specific process for treating inorganic waste and explain any one. (10 Marks)

OR

- 6 a. Explain the limestone and lime-slurry treatment method given to acid wastes. (10 Marks)
- b. Explain the term waste-strength reduction with reference to industrial wastewater. (10 Marks)

### Module-4

- 7 a. Describe briefly the types of radioactive wastes. (10 Marks)
- b. Explain briefly the importance of radiotracer technique in wastewater treatment plant. (10 Marks)

OR

- 8 Enumerate the in-situ bioremediation techniques like bioslurping, bioventing, bio sparging and permeable reactive barriers. (20 Marks)

### Module-5

- 9 a. What is environmental auditing? Describe the purpose and benefits of environmental audit. (12 Marks)
- b. Write a short note on ISO 14001. (08 Marks)

OR

- 10 Describe in detail the three phases of activities involved in environmental audit. (20 Marks)

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