

IV B. Tech I Semester Regular Examinations, November – 2022
INDUSTRIAL WASTE WATER TREATMENT
(Civil Engineering)

Time: 3 hours**Max. Marks: 75**

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

UNIT-I

- 1 a) Describe the various water quantity and quality requirements for processing the Food processing waters [7]
b) How is the water utilized for processing in sugar mills? Explain in brief [8]
(OR)
- 2 a) Explain the basic concept of Adsorption and Ion Exchange as an advanced water treatment method. [7]
b) Why and how does the removal of colour and odour possible with advanced treatment methodology? Explain in detail. [8]

UNIT-II

- 3 a) Write a detailed note on Equalization [7]
b) Enumerate the basic theories of Industrial wastewater management and explain the Volume reduction. [8]
(OR)
- 4 a) Write a short note on recycling and reuse of industrial wastewater. [7]
b) Write about wastewater characterization. [8]

UNIT-III

- 5 a) Discuss about Recirculation of industrial waste. [7]
b) Discuss the limitations and challenges of land treatment of industrial wastewater [8]
(OR)
- 6 a) Discuss the salient features of management of industrial waste disposal schemes. [7]
b) What are the problems associated with disposing waste into streams and oceans? [8]

UNIT-IV

- 7 a) What are the characteristics, effects and treatment methods of liquid waste from oil refineries? [7]
b) Discuss in detail, the treatment methods needed for the wastewater generated from Fertilizers. [8]



(OR)

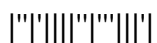
- 8 a) Explain the various features involved in manufacturing process of steel plants, and the characteristics of its different effluent streams. [7]
b) List various treatment methods needed for the wastewater generated from coal and gas based power plant with case study. [8]

UNIT-V

- 9 a) Write a detailed note on the treatment methods suitable for the Tanneries industry. [7]
b) Explain the characteristics and their impacts of the waste generated from food processing industries. [8]

(OR)

- 10 a) Discuss the origin and effects of Distillers industry. [7]
b) State the characteristics along with the treatment methods involved in processing of Sugar Mill wastes [8]



Code No: R194101B

R19

Set No. 2

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UNIT-I

- 1 a) Explain about Removal of Iron and Manganese. [7]
b) List out the various sources of industrial waste. [8]
(OR)
- 2 a) List out the various sources of industrial waste. [7]
b) Explain the basic concept of Reverse Osmosis, as an advanced water treatment method. [8]

UNIT-II

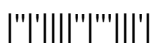
- 3 a) What are the objectives of pre and primary treatment of wastewater? [7]
b) Briefly describe about the volume reduction, Equalization and Neutralization. [8]
(OR)
- 4 a) Explain any two common methods of treatments of waste water. [7]
b) Explain about primary, secondary and tertiary treatment of sewage. [8]

UNIT-III

- 5 a) What is Eutrophication? What are the major causes of Eutrophication [7]
b) Express the need for the effluent standards and stream standards in waste water treatment [8]
(OR)
- 6 a) Write a short note on effluent disposal methods [7]
b) What are the problems associated with disposing waste into streams and oceans? Explain [8]

UNIT-IV

- 7 a) What are various methods adopted for Colour removal in Paper and Pulp industry? Explain in detail. [7]
b) State and briefly explain the characteristics and effects of waste generated from steel plant [8]



(OR)

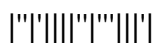
- 8 a) Discuss the various treatment methods of liquid wastes from Textile plants. [7]
b) What are the pollutants that demand special attention in treatment of Fertilizers industry? Explain in detail. [8]

UNIT-V

- 9 a) Describe treatment method followed in India for wastewater from dairy industry. [7]
b) Explain the origin and characteristics of tannery wastes. [8]

(OR)

- 10 a) State the characteristics along with the treatment methods involved in Processing of Sugar Mill wastes. [7]
b) Discuss the origin and effects of Distillers industry [8]



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UNIT-I

- 1 a) How is the water utilized for processing in sugar mills? Explain in brief [7]
b) What are the applications, limitations and advantages of Ultra Filtration process of industrial wastewater treatment? Explain in brief. [8]
(OR)
- 2 a) Discuss any two methods suitable for the removal of Iron and Manganese. [7]
b) Explain in detail the working principle involved in cooling industrial wastewater [8]

UNIT-II

- 3 a) How and why do you go for measurement of wastewater flow? Describe in brief. [7]
b) Explain about Toxicity of industrial effluents. [8]
(OR)
- 4 a) Explain how sampling is done for industrial wastewater and how it is preserved for analysis? [7]
b) What are the toxic chemical presents in industrial wastewater? How they are removed? [8]

UNIT-III

- 5 a) Define the term Oxygen Sag Curve and derive the equation of the same [7]
b) Discuss the limitations and challenges of land treatment of industrial wastewater [8]
(OR)
- 6 a) Explain the self-purification process that takes place when the industrial waste is disposed off into streams and lakes [7]
b) What is an Effluent Treatment Plant? Explain in detail the design concepts and treatment level of EFT [8]

UNIT-IV

- 7 a) Identify various industries producing wastewater and suggest appropriate disposal method for each of them. [7]
b) What are the characteristics, effects and treatment methods of liquid waste from oil refineries? [8]



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Set No. 3

(OR)

- 8 a) Discuss in detail, the treatment methods needed for the wastewater generated from Fertilizers. [7]
b) Discuss the various treatment methods of liquid wastes from Textile plants. [8]

UNIT-V

- 9 a) Explain the characteristics and their impacts of the waste generated from Aqua industries. [7]
b) Name the various treatment methods suitable for the Tanneries industry. [8]

(OR)

- 10 a) Describe the toxic pollutants in wastes coming from pharmaceutical plants, petrochemicals, and electroplating industries. [7]
b) Explain the characteristics and their impacts of the waste generated from food processing industries. [8]



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UNIT-I

- 1 a) Define Reverse Osmosis? Explain the Principle behind Reverse Osmosis? [7]
b) How is the water utilized for processing in sugar mills? Explain in brief. [8]
(OR)
- 2 a) Explain about the use of municipal waste water in industries. [7]
b) What are the applications, limitations and advantages of Ultra Filtration process of industrial wastewater treatment? Explain in brief. [8]

UNIT-II

- 3 a) Categorize and explain various pollutants found in industrial wastes. [7]
b) Explain about Biological treatment of sewage. [8]
(OR)
- 4 a) Explain how sampling is done for industrial wastewater and how it is preserved for analysis? [7]
b) By means of neat sketch, explain various unit operations involved in treatment of wastewater. [8]

UNIT-III

- 5 a) What does the Oxygen sag curve represents? Explain self purification of stream with sag curve. [7]
b) What are the advantages and disadvantages of disposal of Industrial waste water into streams? [8]
(OR)
- 6 a) What are the different effluent disposal methods? Explain them in detail. [7]
b) Explain any one case study on discharges into Sewers. [8]

UNIT-IV

- 7 a) Explain the sources of Petroleum Refinery Wastes and the recommended process for their treatment. [7]
b) With the help of flow chart, write the origin sources and characteristics of wastewater generated from cotton textile industry. [8]



(OR)

- 8 a) Explain the manufacturing process of pulp and paper with the aid of a flow diagram. [7]
b) Explain about the treatment of food processing industries. [8]

UNIT-V

- 9 a) With the help of flow chart, write the origin sources and characteristics of wastewater generated from Dairy industry. [7]
b) Explain the characteristics and their impacts of the waste generated from Aqua industries. [8]

(OR)

- 10 a) Explain the sources of sugar mill wastes and the recommended process for their treatment. [7]
b) What are the pollutants that demand special attention in treatment of Fertilizers industry? Explain in detail. [8]

