

Code No: R194101N

**R19**

**Set No. 1**

**IV B.Tech I Semester Advance Supplementary Examinations, March - 2023**

**WASTE WATER TREATMENT**

**(Open Elective)**

**Time: 3 hours**

**Max. Marks: 75**

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

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**UNIT I**

- 1 a) Enumerate the special treatments required for treating the industrial wastewater and explain any two in detail [9]  
b) Differentiate the industrial and municipal wastewaters with suitable examples. [6]
- (OR)
- 2 a) Describe the process of removal of the color& odour from the wastewater. [7]  
b) Explain the detailed requirements of water quality and quantity for the domestic/canteen industry. [8]

**UNIT II**

- 3 a) Demonstrate the process of determining the Toxicity of industrial effluents. [7]  
b) Discuss in detail 'unit operations and processes' of Industrial wastewater management [8]
- (OR)
- 4 a) Describe the importance and limitations of the Neutralization process in the Chemicaltreatment of industrial wastewater [10]  
b) Explain the terms Equalization and proportioning in the industrial wastewater treatment. [5]

**UNIT III**

- 5 a) Explore the recirculation of industrial wastewaters with neat sketches. [5]  
b) What do you understand by Oxygen – Sag Curve? Derive Streeter-Phelps equation. [10]
- (OR)
- 6 a) Explain the limitations and challenges involved in effluent treatment plants. [9]  
b) Describe the suitability of effluent treatment plants. [6]



**UNIT IV**

- 7 a) What are the characteristics, effects and treatment methods of liquid waste from oil refineries? [7]  
b) Draw the neat sketch of flow chart of the manufacturing process of pulp and paper and explain each component. [8]

(OR)

- 8 a) Draw the flow diagram showing the complete treatment of Steel plant [8]  
b) Highlight the suitability and challenges of any one common effluent treatment plant process. [7]

**UNIT V**

- 9 a) Explain how you treat a cluster of tannery plants effluent as a common treatment process. [9]  
b) Discuss the origin and effects of the Distillers industry. [6]

(OR)

- 10 a) Explain the sources of Sugar mill wastes and the recommended process for their treatment. [7]  
b) Draw a neat sketch of the cane sugar manufacturing flow diagram. Explain the waste production from sugarcane. [8]

