

**III B. Tech II Semester Supplementary Examinations, April - 2021****WASTEWATER MANAGEMENT**

(Common to Civil Engineering, Mechanical Engineering, Petroleum Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answer **ALL** the question in **Part-A**  
 3. Answer any **FOUR** Questions from **Part-B**
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**PART -A****(14 Marks)**

1. a) Explain about Reverse osmosis. [2M]
- b) What are the parameters affecting performance of boilers? [2M]
- c) Write about Wastewater characterization. [2M]
- d) List out the various methods for disposal of industrial wastewater. [3M]
- e) What are the characteristics of liquid waste from sugar mills? [3M]
- f) Explain the manufacturing process involved in Food Processing industries. [2M]

**PART -B****(56 Marks)**

2. a) Explain the process involved in removing color and odor of wastewater. [7M]
- b) What are the Miscellaneous Treatments involved in treatment of industrial wastewater? Explain them in detail. [7M]
3. a) Define and explain Adsorption, Ultra filtration and Freezing. [7M]
- b) At what conditions water needed to be treated? Name some advanced water treatment methods commonly using in industries. [7M]
4. a) Explain in detail about Volume and Strength reduction. [7M]
- b) What do you mean by Neutralization–Equalization and proportioning? Discuss briefly. [7M]
5. a) Write the advantages and limitations of CETP's with respect to present scenario. [7M]
- b) Write a short note on Industrial wastewater disposal management. [7M]
6. a) What are the characteristics of tannery wastewater? Explain their treatment process. [7M]
- b) Detail the limitations and challenges involved in Land treatment process. [7M]
7. a) Explain the manufacturing process of paper and pulp and write characteristics of wastewater. [7M]
- b) Discuss effects and treatment method for textile industry effluent. [7M]

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