

III B. Tech II Semester Supplementary Examinations, February-2022**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**

PART –A**(14 Marks)**

1. a) What is the importance of coagulation unit process in industrial wastewater treatment? [2M]
- b) Write the advantages and disadvantages of Reverse Osmosis process. [2M]
- c) State the advantages of recirculation of industrial wastes. [2M]
- d) State the standards to dispose the industrial waste into lakes. [3M]
- e) State the sources and origin of waste from oil refineries. [3M]
- f) List out the effects of the wastes generated from the pharmaceutical plants. [2M]

PART –B**(56 Marks)**

2. a) Discuss about Industrial water Quantity and Quality requirements. [7M]
- b) Describe the various water quantity and quality requirements for processing the Food processing waters. [7M]
3. a) What are the factors to be considered for the use of treated municipal waste water in industries? [7M]
- b) What are the applications and advantages of Ultra Filtration process of industrial wastewater treatment? [7M]
4. a) Write about Wastewater characterization. [7M]
- b) Explain about Volume and Strength reduction. [7M]
5. a) Discuss the limitations and challenges of land treatment of industrial wastewater. [7M]
- b) What is an Effluent Treatment Plant? Explain in detail the design concepts and treatment level of EFT. [7M]
6. a) Discuss in detail, the treatment methods needed for the wastewater generated from Fertilizers. [7M]
- b) Write a detailed note on treatment of steel plant waste. [7M]
7. a) What are the manufacturing strategies involved in Tanneries industry? Explain in detail. [7M]
- b) Draw a flow diagram showing the complete treatment of sugar mill wastes. [7M]
What are the characteristics of sugar mill wastes?

