

III B. Tech II Semester Supplementary Examinations, November - 2019**WASTE WATER 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) Define the term water quality standard. [2M]
- b) Define the term process water and name 2 uses. [2M]
- c) What are the treatment methods of liquid waste from Tanneries? [2M]
- d) List out the effects of liquid waste produced from oil Refineries. [3M]
- e) What are the major drawbacks of discharging industrial waste water into streams? [3M]
- f) What do you understand by the term Industrial waste survey? [2M]

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

2. a) What are the quality and quantity requirements of industrial water? Explain. [7M]
- b) Explain about ion exchange method. [7M]
3. a) List out various Advanced water treatment methods and illustrate about elutriation. [7M]
- b) Explain method for removal of iron and manganese from Industrial waste water. [7M]
4. a) Discuss Industrial wastewater treatment process in detail. [7M]
- b) Write about wastewater characterization. [7M]
5. a) Write short note on Recirculation of industrial waste. [7M]
- b) What are the different effluent disposal methods? Explain them in detail. [7M]
6. a) Identify various industries producing wastewater and suggest appropriate disposal method for each of them. [7M]
- b) What are the characteristics, effects and treatment methods of liquid waste from oil refineries? [7M]
7. a) What is the treatment process involved for wastewater coming from pulp industry? Explain. [7M]
- b) Describe the removal process of iron in wastewater. [7M]

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