

Code No:117DW

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech IV Year I Semester Examinations, March - 2017****INDUSTRIAL WASTEWATER TREATMENT****(Civil Engineering)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**Part- A (25 Marks)**

- 1.a) What are the primary sources of pollution? [2]
- b) What are the physical properties of industrial wastes? [3]
- c) What do you mean by Pretreatment of Industrial waste? [2]
- d) What are the advantages of Equalization of Industrial Wastes? [3]
- e) What do you mean by Nitrification? [2]
- f) Name the safe disposal methods of wastewater. [3]
- g) What is the composition of Sugar Industry wastewater? [2]
- h) What is the composition of Steel Industry wastewater? [3]
- i) What are the advantages Joint treatments of Industrial Wastewater? [2]
- j) What are the advantages of Common Effluent Treatment? [3]

**Part-B (50 Marks)**

- 2.a) Enumerate the Special treatments required for treating the Industrial water and explain any one of them in detail.
- b) What are the differences between Industrial and Municipal wastewaters? [5+5]

**OR**

- 3.a) What is meant by Self Purification of Streams? And describe the factors that affect Self Purification of Streams.
- b) Describe the problems arising when industrial waste waters discharged in to oceans.[5+5]

- 4.a) Enumerate the basic theories of Industrial wastewater management and explain the Volume reduction.
- b) Write a detailed note on Equalization. [5+5]

**OR**

- 5.a) Explain how recirculation of wastewater in industry is useful.
- b) Explain how the oil will be separated by Floatation. [5+5]

- 6.a) Differentiate the Nitrification and Denitrification.
- b) Describe the problems arising when industrial waste waters are discharged in to rivers. [5+5]

**OR**

- 7.a) Describe the process of removal of Phosphates from industrial waste waters.
- b) Write a note on Air Stripping Process of Industrial Wastewater. [5+5]

- 8.a) Explain the sources of Sugar mill wastes and the recommended process for their treatment.
- b) Explain the sources of Food Processing industry wastes and the recommended process for their treatment. [5+5]

**OR**

- 9.a) Explain the sources of Steel Industry wastes and the recommended process for their treatment.
- b) Explain the sources of Petroleum Refinery wastes and the recommended process for their treatment. [5+5]

- 10.a) Explain the Characteristics of Textile mill wastes and the recommended process for their treatment.
- b) Describe the treatment steps involved in the common effluent treatment plant. [5+5]

**OR**

- 11.a) Explain the Characteristics of Tanneries wastes and the recommended process for their treatment.
- b) What is the scope of Common effluent treatment plants? [5+5]

--ooOoo--