Code No:117DW **R13**

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 Refinary 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]

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