

**R16**

**Code No: 138CU**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year II Semester Examinations, July - 2021**

**INDUSTRIAL WASTE WATER TREATMENT**

**(Civil Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions Carry Equal Marks**

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1. Describe the principles of screening and oil separation units used in waste water treatment. [15]
- 2.a) What are the types of floatation systems and how does it work?  
b) What are the advantages of Reverse osmosis process and where It is used? [10+5]
- 3.a) What is the principle of operation and advantages of Chemical precipitation process?  
b) Write about the inlet and settling zone of the sedimentation process. [8+7]
- 4.a) What is the significance of skimming tanks?  
b) Explain in detail the coagulation mechanism process. [7+8]
5. Explain in detail the design and the applications of Rotating Biological Contactors with suitable flow scheme. [15]
- 6.a) Write a short note on High rate and Low rate Filters in terms of design features.  
b) What are the factors that influence the rate of substrate utilization within biofilm?[5+10]
7. Give in detail the design equation and material balance equation across the lagoon. [15]
8. Explain in detail the anaerobic sludge digestion process with a neat sketch. [15]

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