

Code No: 138CU

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, December - 2020

INDUSTRIAL WASTE WATER TREATMENT

(Civil Engineering)

Time: 2 hours

Max. Marks: 75

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

1. Mention the permissible limit of discharge standards for parameter in Inland surface water and land for irrigation.
a) Suspended solids (mg/l),
b) pH
c) BOD (mg/l)
d) Arsenic (mg/l)
e) oil and grease (mg/l). [15]
2. Mention the permissible limit of discharge standards for parameter in public sewers and marine coastal areas.
a) Suspended solids (mg/l)
b) pH value
c) oil and grease (mg/l)
d) BoD (mg/l)
e) Arsenic (mg/l). [15]
- 3.a) Differentiate Aerated and Vortex type of Grit Chamber.
b) Write about the secondary clarifier process. [8+7]
- 4.a) What are the objectives of primary treatment?
b) Explain in detail the flocculation mechanism process? [9+6]
5. Explain in detail the filter media Characteristics and different types used in Trickling filter mechanism. [15]
6. Write about under drainage system and distributor in trickling filter system along with neat sketch. [15]
7. Give in detail the salient features of Facultative and Maturation Pond. [15]
- 8.a) Explain in detail the operation and maintenance of the sludge feed pump.
b) What is the applicability of a sludge drying bed? [8+7]

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