

Code No: 138CU**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year II Semester Examinations, September - 2020****INDUSTRIAL WASTE WATER TREATMENT****(Civil Engineering)****Time: 2 Hours****Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) Give the characteristics and composition of raw sewage.
- b) How does the self purification of stream occur when it has been polluted by discharge of waste in it? [7+8]
2. What are the underlying object in the methods of sewage treatment and disposal? Give an outline of the methods involved. [15]
- 3.a) Sketch and describe the construction and working of grit chambers.
- b) Distinguish between preliminary and primary treatment operations. Illustrate with a flow diagram. [7+8]
- 4.a) Explain how does grease trap differ from skimming tank?
- b) Mention the objectives to be achieved in screening. [7+8]
- 5.a) Compare and contrast a standard rate filter and high rate filter.
- b) What is biofilter? State its principle of action. [8+7]
- 6.a) What are the essential features necessary for the optimum function of the trickling filter?
- b) Discuss the operational difficulties of rotating biological contactors. [8+7]
7. Discuss briefly the design and principle of Activated Sludge process. Also state different modifications of activated sludge process. [15]
8. What is meant by sludge thickening? State and explain the methods of sludge treatment. [15]

---ooOoo---