

AG AG AG AG AG AG AG A

Code No: 127DW

**R15**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November/December - 2018

**INDUSTRIAL WASTE WATER TREATMENT**

(Civil Engineering)

AG AG AG AG AG AG AG A

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.

AG AG AG **PART - A** AG AG AG A

(25 Marks)

- 1.a) Define sewer. [2]
- b) Explain effluent. [3]
- c) Define proportioning. [2]
- d) What do you mean by neutralization? Give few examples? [3]
- e) Define heavy metal. [2]
- f) What do you mean by pre-treatment process? [3]
- g) Define characterization of industrial waste water [2]
- h) What are the characteristics of waste water from food processing industry? [3]
- i) Define atomic energy. [2]
- j) Define raw industrial waste water. [3]

AG AG AG **PART - B** AG AG AG A

(50 Marks)

- 2.a) Explain different organic and biological properties of industrial wastes.
  - b) What are the various industrial effluents of sewer? [5+5]
- OR**
- 3.a) How can we classify sources of pollution?
  - b) Explain treatment of Natural water bodies. [5+5]
- 4.a) Explain the equalization process of waste water.
  - b) Explain the waste reduction process of waste water. [5+5]
- OR**
- 5. What is meant by strength reduction? Give any two examples of how process change can reduce the strength of wastewater? [10]
- 6.a) Explain the disposal of treated waste water.
  - b) What are the various ways of membrane separation process? [5+5]
- OR**
- 7.a) How the process of nitrification is performed in waste water treatment ?
  - b) Explain in detail about phosphorus removal? [5+5]

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A

8.a) What are the various characteristics of sugar industry.

b) Explain in detail about the food processing industries?

[5+5]

AG AG AG AG OR AG AG AG A

9.a) Explain the treatment methods in steel industry.

b) What are the various In-plant Control Measures of petroleum industries?

[5+5]

10.a) Explain in detail about the CETP's.

b) Illustrate the Composition of Tannery industry.

[5+5]

OR

AG AG AG AG AG AG AG A

11.a) Explain the Characteristics and Composition of Textile industry.

b) Describe the Operation and Maintenance Problems of CETP.

[5+5]

--ooOoo--

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A

AG AG AG AG AG AG AG A