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**INSTITUTE OF AERONAUTICAL ENGINEERING****(Autonomous)**

B.Tech VI Semester End Examinations (Regular) - May, 2019

Regulation: IARE – R16**INDUSTRIAL WASTE WATER TREATMENT****Time: 3 Hours****(CE)****Max Marks: 70****Answer ONE Question from each Unit****All Questions Carry Equal Marks****All parts of the question must be answered in one place only****UNIT – I**

1. (a) Enlist the various sources of pollution and describe its characteristics. [7M]
(b) Explain about the effects of industrial effluents on sewers. [7M]
2. (a) Enumerate the sources of industrial and municipal wastewater [7M]
(b) Explain how the organic properties cause industrial pollution. [7M]

UNIT – II

3. (a) What are the objectives of pre and primary treatment of wastewater? Describe. [7M]
(b) Explain about the terms waste reduction and strength reduction. [7M]
4. (a) Discuss about the one of the strength reduction methods proportioning and oil separation by floatation applications. [7M]
(b) Briefly describe about the volume reduction, Equalization and Neutralization. [7M]

UNIT – III

5. (a) Write a note on Air Stripping process of Industrial Wastewater. [7M]
(b) Explain various zones of pollution in streams. Write an essay on heavy metal poisoning and their prevention with a suitable example. [7M]
6. (a) Discuss in brief the biological and chemical methods of removal of phosphorous from waste water. [7M]
(b) Explain briefly the nitrogen removal by biological nitrification and denitrification. [7M]

UNIT – IV

7. (a) Enlist the pollution parameters of wastewater from the steel plants and describe its effects on streams when discharged without treatment. [7M]
(b) Between BOD and COD, which one usually assumes higher value for a food plant? Justify your answer. [7M]

8. (a) Characterize the various treatment process for food industry? What are the prospects of waste utilization from food industry? [7M]
(b) Describe treatment method followed in India for wastewater from dairy industry. [7M]

UNIT – V

9. (a) What is the necessity of joint treatment of Industrial waste water management? [7M]
(b) Describe the characteristics of Atomic Energy plants effluents. [7M]
10. (a) Write the effects of metal plating waste on sewers and streams. [7M]
(b) What are the synthetic textile mill waste characteristics? Explain briefly. [7M]

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