PAPER CODE: ENV- 32G

M. TECH.
(SEM III) ODD SEMESTER EXAMINATION, 2015-16
INDUSTRIAL WASTE MANAGEMENT

[Time:-3 Hours] [Max Marks: 100]

Note: Attempt All Questions. All Questions carry equal marks:-

1. **Attempt any TWO parts from the following: [10x2=20]**

(a) Explain capabilities and constraints of industries for pollution control. Describe various ways of waste minimization in industries.

(b) Critically explain impact of pollution control by industries on product cost. Explain role of Pollution Control Boards to control industrial pollution.

(c) Briefly explain primary treatment of wastewater generated from industries. Explain importance of BOD, Toxicity, TDS and pH in industrial wastewater treatment planning.

2. **Attempt any TWO parts from the following: [10x2=20]**

(a) Draw a flow diagram of an integrated cotton textile mill? Explain the method of treating cotton textile mill waste with the help of flow sheet.

(b) Describe general characteristics of wastewater generated from tannery and based on these characteristics give its treatment in detail giving schematic flow diagram including recovery of Chromium.

(c) What are the characteristics of petrochemical waste? How are the petrochemical waste treated.

3. **Attempt any TWO parts of the following: [10x2=20]**

(a) Explain general characteristics of wastewater generated from dairy industry. Suggest suitable treatment planning on the basis of general characteristics giving schematic flow diagram.

(b) What are the pollutants generated in large synthetic drug manufacturing plants? Draw a flow sheet for the treatment of wastes from a large synthetic drug manufacturing plants.

(c) Describe various sources of wastewater generated from a paper mill and based on general characteristics of combined wastewater generated, suggest suitable treatment giving schematic flow diagram.

4. **Attempt any TWO parts of the following: [10x2=20]**

(a) Name the process from which, the mercury comes in effluents of Chlor-alkali industry. Explain the load and characteristics of pollutants at each step of Chlor-alkali manufacturing process? Explain the removal of mercury from such effluents giving suitable diagram.

(b) Describe various sources of the wastewater generated from a sugar mill and based on its general characteristics of combined wastewater generated, suggest suitable treatment process giving schematic flow diagram.

(c) How are fertilizer plant waste treated? What are the effects of these effluents when disposed off on to land?

5. Attempt any FOUR parts of the following: [5x4=20]

(a) Advantages and disadvantages of Common Effluent Treatment Plant.

(b) Ion exchange and adsorption techniques used in industrial pollution control.

(c) Aerobic lagoon and Oxidation ditch.

(d) General standards for disposal of effluents.

(e) Cooling of wastewater from thermal power plants.

(f) Treatment of wastewater from electroplating industry.