

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 2687**

Roll No.

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**B.Tech.**

(SEM. VII) ODD SEMESTER THEORY  
EXAMINATION 2012–13

**INDUSTRIAL POLLUTION CONTROL AND  
ENVIRONMENTAL AUDIT**

*Time : 3 Hours*

*Total Marks : 100*

**Note :-** Attempt all questions.

1. Attempt any **four** of the following : **(5×4=20)**
- (a) What are the basic properties of industrial waste ? Discuss its physical and chemical properties.
  - (b) How would you estimate demand of water for an industry ? What are the main steps which must be taken to reduce water consumption ?
  - (c) Explain recovery and recycling of various chemical wastes in detail.
  - (d) Discuss hierarchy of various treatment option of industrial waste.
  - (e) What are the risks with hazardous waste ? Give detail of any one method of treatment.
  - (f) Mention the health and other detrimental effects of radiation.

2. Attempt any **four** of following : **(5×4=20)**
- (a) What are main source of water pollution in an industrial township ?
  - (b) How would you determine the quantity of oil and grease in a wastewater sample ? Give detail.
  - (c) What are the two commonly used systems for biological waste treatment ? Explain them.
  - (d) Differentiate between absorption and adsorption.
  - (e) Explain DuPonts powdered activated carbon process in detail.
  - (f) Explain Dewatering of sludge in detail.
3. Attempt any **two** of following : **(10×2=20)**
- (a) What is landfill ? Which type of waste should be disposed off into a landfill as per solid waste management rule (2000) ? What are main pathways involved for environmental contamination ?
  - (b) List out the various liquid and gas emissions from various industries in India. How the organic vapour is treated by absorption process ? Explain.
  - (c) Write in detail about the filtration and impingement techniques for collection of particulate pollutants in atmosphere.
4. Attempt any **two** of following : **(10×2=20)**
- (a) Discuss the purpose of life cycle analysis (LCA). Discuss various steps involved in a LCA study.

- (b) Write down characteristics of liquid effluent from a sugar mill. Draw a flow diagram for the treatment of the same. Also give some detail of each unit shown in the flow diagram.
- (c) Discuss about the treatment of liquid effluent from a petrochemical industry.

5. Attempt any **two** of following : **(10×2=20)**

(a) Write briefly on :

(i) Water Act

(ii) Air Act.

Also explain key features of EPA (1986).

- (b) Differentiate between Environmental Audit and Environmental Impact Assessment (EIA). Describe checklist method of EIA.
- (c) What are internal and external objectives of an Environmental Management System (EMS)? Explain each point with reference to ISO-14001-2004.