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

PAPER ID : 2687   Roll No.

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 cheklist 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.