

1058

M.Sc. (Applied Chemistry/Pharmaceutical) Fourth Semester  
Paper – 403: Industrial Aspects and Management

Time allowed: 3 Hours

Max. Marks: 60

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit. Assume missing data of any.

x-x-x

I. Attempt the following:-

- a) Define Air Pollution.
- b) What is the impact of pollutants on Human Body?
- c) List out the various methods of sampling
- d) Explain briefly the Recycling Techniques of waste water.
- e) Define BOD.
- f) What is water hardness? Write its types. (6x2)

**UNIT – I**

- II.
  - a) Classify air pollutants into different categories, indicating their sources.
  - b) Discuss the formation, reactions and harmful effects of classical and photochemical smogs. (2x6)
- III.
  - a) Explain different zones of atmosphere
  - b) What are Air - Borne Allergens. With examples, explain their origin. (2x6)

**UNIT – II**

- IV.
  - a) What are various methods of measurement of Air - Pollution. Explain any one of them.
  - b) Name the various equipments for controlling of particulate emission and explain any one in detail. (2x6)
- V.
  - a) Explain gas Chromatography in detail.
  - b) Explain any one device in detail for sampling gases and vapours. (2x6)

**UNIT – III**

- VI.
  - a) The 5 day BOD at 20° C is equal to 250 mg/l for three different samples, but the 20° C K. values are equal to 0.12 d<sup>-1</sup>, 0.16 d<sup>-1</sup>, and 0.20 d<sup>-1</sup> Determine the ultimate BOD of each sample.
  - b) Explain Nygaards Indices. (2x6)

P.T.O.

(2)

- VII. a) Explain the following:-
- Why turbidity in water is considered objectionable.
  - What is the importance underlying the determination of total solids in a water sample.
- b) What is the significance of phosphorous and nitrogen in water quality. (2x6)

#### UNIT – IV

- VIII. a) Explain activated sludge process in detail with the help of process flow diagram. Also explain the important parameters for designing an activated sludge process.
- b) Explain disaster planning in detail. (2x6)
- IX. Write Short notes on the following:-
- Integrated Hazardous Waste Management
  - Anaerobic Lagoons
  - Hazardous control (3x4)

x-x-x