

## Question Bank

**Name of subject: Analytical Instrumentation**

**Subject code: 17539**

**Semester: V (FIFTH)**

**Branch: - IS5G**

**UNIT –TEST II**

### Chapter 4:Chromatography (16 Marks)

#### 3 Marks Question:

- 1) Compare between gas chromatography and liquid chromatography.
- 2) In chromatography, if the temperature of oven increases, what will be its effect on retention time and chromatogram? Describe in brief.
- 3) Classify types of chromatography in detail.
- 4) What is the role of high pressure pump in Liquid chromatography?

#### 4) Marks Question:

- 5) Describe each block of Gas chromatography in brief.
- 6) Describe liquid chromatography with the help of a labeled diagram.
- 7) What is chromatography? State its applications.
- 8) Name the types of detectors used in chromatography? Explain any one in detail.
- 9) Explain any two type of liquid chromatographs in brief.

### Chapter 5: Gas Analyzers(16 Marks)

#### 3 Marks Question:

- 10) Draw labeled diagram of electrode which can simultaneously measure pO<sub>2</sub> and pCO<sub>2</sub> Of blood.
- 11) List four blood gas parameters. State their normal range.

#### 4 Marks Question:

- 12) Describe working of thermal conductivity analyzer using thermistor with a neat diagram.
- 13) Draw & Explain the block diagram of a complete blood gas analyzer.
- 14) Draw and Describe circuit diagram for computation of total CO<sub>2</sub> for blood gas analyzer.
- 15) Draw & Explain the working principle of infrared gas analyzer.

**Chapter 6: Environmental Pollution Monitoring Instruments (20 Marks)**

3 Marks Question:

- 16) State the necessity of air pollutant monitoring instruments.
- 17) List any four gas pollutants. Name measuring techniques for each pollutant.
- 18) Give general equation for representation of concentration of gases. State significance of each term.
- 19) Write types of various gas pollutants. State its typical concentration.
- 20) Why air pollution monitoring instruments are needed?

4 Marks Question:

- 21) Draw and Explain the labeled diagram for measurement technique used for measuring Carbon Monoxide.
- 22) How measurement of ozone is done with the help of conductivity meter?
- 23) Describe how measurement of nitrogen oxide is done using CO laser technique.
- 24) Define chemiluminescence? How measurement of nitrogen oxides is done using Chemiluminescence?
- 25) Describe Conductivity method for measurement of SO<sub>2</sub>.