Question Bank

Name of subject: Analytical Instrumentation
Subject code: 17539 **Branch: - IS5G**
Semester: V (FIFTH) **UNIT –TEST I**

Chapter 1:Introduction of Analytical Instruments (16 Marks)

3 Marks Question:

1) Draw block diagram of Analytical Instruments & explain function of each block.
2) What is PH? Explain the principle of PH Measurement?
3) Explain the principle of paper Electrophoresis.
4) Define electrophoresis. List its four applications.

4 Marks Question:

5) Explain the constructional & working of Glass electrode.
6) Describe working of null detector type pH meter with the help of neat diagram
7) Draw & Explain the schematic diagram of Double beam densitometer.
8) Explain the constructional & working of Electrophoresis Apparatus or components.

Chapter 2: Colorimeters and Photometer (16 Marks)

3 Marks Question:

9) Describe the phenomenon of Interaction radiation with matter.
10) State and explain Beer Lambert's Law. Give expression for absorptivity.
11) Differentiate between Colorimeter and spectrophotometer.(four points)
12) Explain the working principle of Colorimetric method. State any two limitations.

4 Marks Question:

13) Explain the working principle and construction of multi-channel photometer with With neat diagram.
14) Write working principle of flame photometer with neat diagram.
15) Explain the working of double beam filter photometer with neat labeled diagram
16) Draw integral burner type atomizer. Write its constructional details.

Chapter 3:Spectrometers (16 Marks)

3 Marks Question:

17) Draw a schematic diagram of time of flight Mass spectrometer
18) Define chemical shift. State its mathematical expression.
19) With neat diagram give constructional details of NMR spectrophotometer.
20) List applications of 1) GCMS 2) LCMS (two each)

4Marks Question:

21) Give basic principle of NMR spectrometer. List any two applications of it.
22) Describe principle of operation of Mass spectrometer with neat diagram.
23) What is resonance condition? Describe nuclear energy level in NMR Spectro Photometer.
24) Draw & Explain schematic diagram of magnetic deflection mass spectrometer
25) Give significance of atomizer. Describe discharge type atomizer used in flame Photometer.