

Code: 13A10502

B.Tech III Year I Semester (R13) Regular Examinations December 2015

ANALYTICAL INSTRUMENTATION
(Electronics and Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) State Lambert's law.
 - (b) What do you mean by UV-Vis absorption?
 - (c) What is a Spectrophotometer?
 - (d) List the advantages of infrared absorptiometry.
 - (e) Give the basic function of ESR spectrometer.
 - (f) List the advantages of ion mass spectrometer.
 - (g) What do you mean by Florescence emission and diffraction of X rays?
 - (h) List the parts of X-ray Florescent spectrometer.
 - (i) What is pH?
 - (j) What is an electrolytic cell?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 Explain interaction of radiation with matter.
- OR**
- 3 Explain atomic emission detector using a neat figure.

UNIT – II

- 4 With neat figure explain Single beam-null type spectrophotometer.
- OR**
- 5 Explain the method of measurement of CO using a block diagram.

UNIT – III

- 6 List the applications and explain the function of a ESR spectrometer.
- OR**
- 7 Draw the block diagram of ISS/IMS instrument for Ion spectroscopy and explain the function of each block.

UNIT – IV

- 8 Explain the working of GM counter.
- OR**
- 9 With neat figures explain the method of X-ray detection.

UNIT – V

- 10 Describe the working of Oxygen analyzer using neat figure.
- OR**
- 11 Explain the operation of a typical process chromatography and list its applications.
