**Code: 13A10502**

**R13**

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.



*****