

C5307

EIGHTH SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION

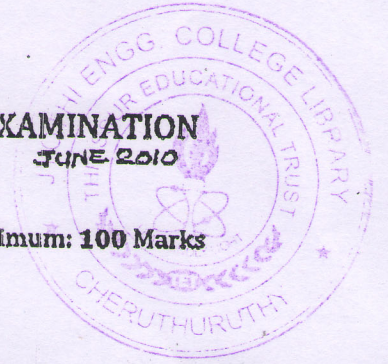
A104-802 ANALYTICAL INSTRUMENTATION

JUNE 2010

Time: Three Hours

A104-802 Analytical Instrumentation

Maximum: 100 Marks



Answer all questions

Part A

- I. (a) State and explain Beer's law and discuss its relevance.
(b) Discuss the principle of ultraviolet spectrometer.
(c) Explain the theory of Raman spectrometry
(d) Write a note on thermo gravimetric analysis.
(e) What is X ray absorption? How is it useful in instrumentation?
(f) Write a note atomic emission spectrometry.
(g) How nuclear radiation detectors work?
(h) Describe the working of CO monitor. Describe one typical application.

(8×5=40 marks)

Part B

- II. (a) Describe the single and double beam photometry. (8)
(b) Describe the use of microprocessors in photometry. (7)
Or
(c) Discuss the working UV.vis spec:rometer in detail. (8)
(d) Write a note on radiation sources. (7)
- III. (a) Explain FTIR instrumentation with a functional block diagram (15)
Or
(b) Explain the principle of atomic emission spectrometry. Discuss source, components etc. (15)
- IV. (a) Explain magnetic resonance technique. Discuss various types and instrumentation application of each in detail. (15)
Or
(b) Explain the principle and application of ESR spectrometer. Compare with other types. (15)
- V. (a) Explain the principle of mass spectrometry. Explain the various analyzing techniques. (15)
Or
(b) Explain the general principle of chromatography. Explain gas and liquid types in detail. (15)

(4×15=60 marks)

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