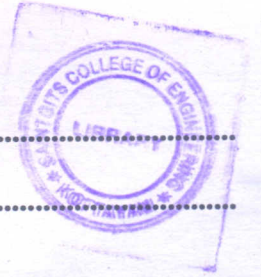


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Reg. No.....

Name.....



B.TECH. DEGREE EXAMINATION, MAY 2015

Seventh Semester

Branch : Applied Electronics and Instrumentation / Electronics and Instrumentation /
Instrumentation and Control Engineering

AI 010 704 / EI 010 704 / IC 010 704 – ANALYTICAL INSTRUMENTATION (AI, EI, IC)

(New Scheme – 2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Give the classification of Instrumental techniques.
2. State Beer-Lambert's law.
3. Write the principle of Flame photometry.
4. List the components of a mass spectrometer.
5. Differentiate Gas chromatography and Liquid chromatography.

(5 × 3 = 15 marks)

Part B

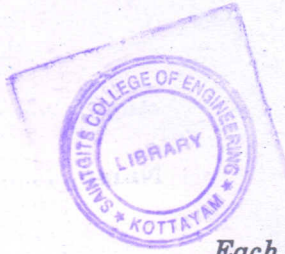
Answer all questions.

Each question carries 5 marks.

6. With a neat schematic, explain a double beam spectrophotometer.
7. Discuss the principle and instrumentation of flame photometer.
8. Write a note on nuclear radiation detectors.
9. Brief about Biochemical sensors.
10. Explain the principle of HPLC.

(5 × 5 = 25 marks)

Turn over

**Part C**

Answer all questions.

Each full question carries 12 marks.

11. Describe electromagnetic spectrum and discuss in detail the properties of electromagnetic radiation. (12 marks)

Or

12. Discuss any two sources and any two detectors for IR radiation. (12 marks)

13. With a neat block diagram, explain a flame photometer. (12 marks)

Or

14. Write short notes on :
(a) Photo thermal spectroscopy.
(b) Raman Spectrometer. (6 + 6 = 12 marks)

15. List and explain the components of a mass spectrometer with a neat schematic diagram. (12 marks)

Or

16. Discuss the instrumentation of X-ray spectrometry. (12 marks)

17. Write short notes on :
(a) Conductivity meters.
(b) Paramagnetic oxygen analyser. (6 + 6 = 12 marks)

Or

18. Explain the following :-
(a) Mechanical sensors.
(b) Radiation sensors (6 + 6 = 12 marks)

19. Write a note on any two detectors in Gas chromatography. (12 marks)

Or

20. Discuss the principle and instrumentation of HPLC. (12 marks)

[5 × 12 = 60 marks]