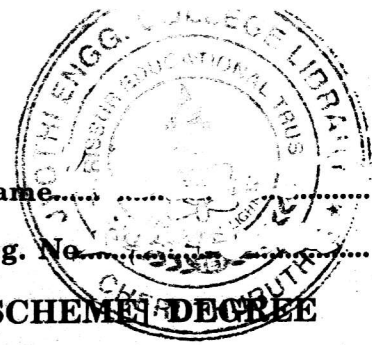


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Name.....

Reg. No.....



**EIGHTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE
EXAMINATION, APRIL 2016**

AI 09 801—ANALYTICAL AND OPTO ELECTRONIC INSTRUMENTATION

Time : Three Hours

Maximum : 70 Marks

Part A (Short Answer Questions)

One or two sentences.

All questions are compulsory.

1. Define spectrophotometry.
2. What is meant by FTIR ?
3. Define spectrometer.
4. Define population inversion.
5. What is meant by optical telemetry ?

(5 × 2 = 10 marks)

Part B (Analytical/Problem Solving Questions)

Answer four questions out of six.

6. Explain atomic emission spectrometry.
7. Explain the general principle of chromatography.
8. Explain the working of avalanche photodiode.
9. Explain the principle of operation of Fabry-Perot interferometer.
10. Explain any *two* types of fiber optic sensors.
11. Explain the principle of holography and its applications.

(4 × 5 = 20 marks)

Part C (Descriptive/Analytical/Problem Solving Questions)

Answer all questions.

12. (a) Explain in detail about different ultraviolet spectrophotometer.

Or

- (b) Explain different types of photometers.

Turn over

13. (a) Briefly explain the principle and working of ESR spectrometer.

Or

(b) Explain different types of gas analyzers in detail.

14. (a) Briefly explain constructional features of liquid crystal display.

Or

(b) What is meant by modulation? Discuss the operation of magneto optic modulator.

15. (a) Explain the propagation mechanism in step index and graded index fiber.

Or

(b) Explain the measurement of optic fiber characteristics.

(4 × 10 = 40 marks)