

27171

Name:

Reg. No.

EIGHTH SEMESTER B.TECH. DEGREE EXAMINATION MAY, 2012

AI.04.803 – Opto Electronic Instrumentation

Time: Three hours

Maximum: 100 marks



PART – A

(Answer all questions)

- I. a. Enumerate and explain the characteristics of Electro Optic and magnetic optic modulators.
b. Draw a typical fabry penet cavity and explain it.
c. What is the principle of operation of laser? Explain it.
d. What is the principle of Q-switching? Explain.
e. Explain the potential applications of holography.
f. What are the different fiber fabrication techniques? Explain any one in detail.
g. Explain the advantages and applications of opta splicers.
h. What are the types of OTDR? Explain any one in detail with a neat sketch.

(8x5=40 marks)

PART – B

- II. a. (i). Explain the principle of working of pin diode with a neat sketch. **(7 marks)**
(ii). Give an account on interference filters. **(8 marks)**
OR
b. Draw a neat block schematic of optical spectrum analyzer and explain its principle of working in detail.
- III. a. (i). Derive Einstein Relation for lasing. **(7 marks)**
(ii). Explain the types of pumping with neat sketches. **(8 marks)**
OR
b. Draw neat schematic diagrams for OVPO and MCVD fiber fabrication processes. Explain the procedure in detail.
- IV. a. (i). Explain the construction of holography in detail. **(7 marks)**
(ii). Explain the principle of information storage using optics. **(8 marks)**
OR
b. (i). Compare and contrast all the parameters of single mode and multi mode fibers. **(7 marks)**
(ii). Draw a fiber drawing apparatus and explain its working in detail. **(8 marks)**
- V. a. Draw a neat block diagram for fiber refractive index profile measurement and Explain the procedure in detail.
OR
b. Explain the application of fiber optic sensors for liquid level and temperature measurements with neat sketches.

(4x15=60 marks)

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