44823

Name : .....

Reg. No: .....

EIGHTH SEMESTER B.TECH DEGREE SUPPLEMENTARY EXAMINATION, JUNE 2013

AI 04 803 – OPTOELECTRONIC INSTRUMENTATION

Time : Three Hours **Maximum : 100 Marks**

Answer all questions.

I. a) Explain about plasma disperse.
b) Explain briefly about Mach-Zehnder interferometer.
c) Explain about population inversion.
d) Write notes on semiconductor lasers.
e) Explain briefly about properties of optical fibers.
f) Explain the construction of hologram.
g) Explain about splicers.
h) Write notes on optical telemetry.

(8 x 5 = 40 Marks)

II. a) Explain the phenomena of polarization, diffraction and inference of light. (15 Marks)

OR

b) Explain the working of
i. Avalache photo diode. (8 Marks)
ii. Optical spectrum analyzer (7 Marks)

III. a) Explain the distance and velocity measurements using lasers. (15 Marks)

OR

b) i) Explain in detail the properties of lasers. (8 Marks)
ii) Write notes on liquid dye lasers (7 Marks)

IV. a) Explain any two application of holography. (15 Marks)

OR

b) i. Write notes on single mode and multimode fibers. (8 Marks)
ii. Explain the fiber drawing process. (7 Marks)

V. a) Explain the measurement of the following fiber characteristics. (15 Marks)
i. Attenuation.
ii. Dispersion.
iii. Refractive index.

OR

b) Explain the measurement of temperature and liquid level using fiber optic sensors. (15 Marks)

(4 x 15 = 60 Marks)

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