

R09

Code: 9A10804

B.Tech IV Year II Semester (R09) Advanced Supplementary Examinations, July 2013

OPTO-ELECTRONICS & LASER INSTRUMENTATION

(Electronics and Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 (a) Explain the constructional details of optical fibre communication and show a figure for transmission of light and discuss about refractive index distribution with a graph.
(b) Explain single mode fibre with neat diagram and graph.
- 2 (a) Discuss about various applications of optical fiber index.
(b) Explain different types of light sources in fiber optics.
- 3 (a) Explain principle and operation of CO₂ laser.
(b) Explain different types of Q switching techniques.
- 4 (a) Write in detail about IR detectors.
(b) Describe the working of Moiré-Fringe modulation fibre optic sensor.
- 5 Explain with neat diagram how lasers are used for:
(a) Weather monitoring.
(b) Endoscopy.
- 6 (a) With help of neat sketch explain holographic computer memory.
(b) Explain term coherent requirement resolution in connection with hologram.
- 7 (a) Explain the process of tumors removal in vocal cords.
(b) Explain how lasers can be used in skin treatment.
- 8 (a) Obtain expression for bandwidth of Bragg acoustic optical modulator.
(b) Describe different mechanism that limit frequency response of photo diode.
