

Roll No.

Y-569

**M. Tech. (Second Semester)
EXAMINATION, May/June, 2015**

OPTOELECTRONICS AND LASER TECHNOLOGY

Paper Second

(Fiber Optics, Laser Instrumentation and

Solar Photostate Technology)

(OZ-22)

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt all questions. All questions carry equal marks.

Unit—I

1. (a) Explain the basic principle of right propagation through a fiber.
- (b) Describe the absorption losses and scattering losses in fibers.

Or

Discuss the salient features of optical sources and optical detectors used in fiber optics.

Unit—II

2. Describe the principle and working of optical fiber in measurement of pressure and temperature.

Or

Write notes on the following :

- (i) Use of optical fiber in current measurement
- (ii) Use of optical fiber in voltage measurement

Unit—III

3. (a) Describe the use of laser in the measurement of atmospheric effects.
- (b) Discuss in brief the laser application in special frequency filtering.

Or

- (a) Explain the basic principle of holography.
- (b) Write a note on destructive testing using holography.

Unit—IV

4. Describe the use of laser in Welding and hole drilling.

Or

Discuss in detail the laser instrument of surgery.

Unit—V

5. (a) Explain the I-V equation of a solar cell.
- (b) Discuss the parameters of solar cells.

Or

Write notes on the following :

- (a) Design of solar cells
- (b) Minority carrier lifetime and diffusion length measurement