Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

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MEDC-302(B)

M.E./M.Tech. III Semester

Examination, December 2017

Optical Instrumentation and Measurement

(Elective-I)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain the principle working of optical time domain reflectometer.
   b) Explain the principle working of optical spectrum analyser.

2. Explain the construction and working of the following:
   a) Monochrometer
   b) Lock in amplifier

3. Discuss the principle working of the following fiber optic components.
   a) Directional coupler
   b) Beam splitter
   c) Switches
   d) Polarizer

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4. Discuss the principle working of the following fiber optic components.
   a) Amplifiers
   b) Fiber lasers
   c) Wavelength filters
   d) Fiber optic isolator

5. Explain the principle working of following fiber optic sensors.
   a) Pressure sensor
   b) Strain sensor
   c) Magnetic and electric field sensors

6. a) Explain the measurement technique for measuring refractive index profile and numerical aperture of multimode fiber.
   b) Explain how to measure non destructive loss in multi mode fiber.

7. a) Explain how to measure mode field diameter and equivalent step index profile of a step index fiber.
   b) Explain about birefringence measurement.

8. Write short notes on any two of the following:
   a) Optical power and energy meter
   b) CCD
   c) Reflector and polarizing beam splitter

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