PVP 12

Code: **ECMC1T2**

I M.Tech - I Semester-Regular Examinations-February 2016

FIBER OPTIC COMPONENTS, MEASUREMENTS & NETWORKS

(MICROWAVE & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) Establish the threshold gain condition for lasing to occur in Fabry-Perot resonator based laser diode. 7 M

   b) Explain in detail about single mode lasers. 7 M

2. a) Discuss briefly various sources of noise in fiber optic receivers. 7 M

   b) Explain depletion layer photo current and derive the expression for total current density. 7 M

3. a) Illustrate various types of misalignments resulting in losses while splicing and joining optical fibers. 7 M

   b) Explain about expanded beam connectors. 7 M

4. a) Explain in detail about Raman optical amplifier. 7 M

b) Explain about Rare-earth-doped fiber amplifiers. 7 M

5.a) Explain in detail the opto electronic integration. 7 M

b) Explain various types of modulators. 7 M

6. a) Explain in detail about the Extrinsic and Intrinsic optical sensors. 7 M

b) Explain the principles of displacement and velocity measurements using optical Fibers. 7 M

7. a) In detail explain wavelength division multiplexed networks. 7 M

b) What is an optical fiber network and explain various blocks in it. 7 M

8. a) Explain in detail about broadcast and WDM networks. 7 M

b) Explain about wavelength routed networks. 7 M