

Roll No.....

**EC - 703****B.E. VII Semester**

Examination, December 2013

**Optical Communication****Time : Three Hours****RGPVONLINE.COM****Maximum Marks : 70**

**Note :** Attempt one question from each unit. All questions carry equal marks.

**Unit - I**

1. a) Explain transmission of light through fiber using ray theory concept.
- b) Discuss the principle of transmission in photonic crystal fibers.

OR

2. a) Discuss the transmission of light through fiber using mode theory.
- b) Explain the MCVD method of fiber fabrication.

**Unit - II**

3. a) What is Quantum efficiency? Determine the expression of Quantum efficiency for LED source.
- b) Discuss the different methods of fiber splicing.

OR

4. a) Explain the working of laser diode. Also describe its rate equations.
- b) Discuss the principle of optical fiber connectors.

**Unit - III**

5. a) With the help of circuit diagram explain the working of APD
- b) Explain the principle of inter modal dispersion. How can we reduce it.

OR

6. a) What are the factors contributing to delay. Also explain what is meant by group delay.
- b) Explain the principle of dispersion shifted fiber.

**Unit - IV**

7. a) With the help of block diagram explain the working of Homodyne receiver.
- b) Discuss the digital link design using Rise time budget.

OR

8. a) Explain the working of Heterodyne detector.
- b) Discuss the digital link design using power budget.

**Unit - V**

9. Write short notes on the following
  - a) MEMS technology
  - b) EDFA

OR

10. Write short notes on the following:
  - a) Chromatic dispersion compensator
  - b) Optical time domain reflectometer

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