Total No. of Questions :5] *[Total No. of Printed Pages :2*

Roll No.....

EC-703

B.E. VII Semester

Examination, December 2016

Optical Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) What are the different optical spectral bands used in fiber communication?
   b) Write briefly about the Snell's law.
   c) Discuss the structure of graded index fiber and its merits.
   d) Explain Modified Chemical Vapour Deposition (MCVD) method for fiber fabrication.

   OR

   Explain Plasma Activated Chemical Vapour Deposition (PCVD) method for fiber fabrication.

2. a) Define threshold conditions in lasers.
   b) Define quantum efficiency.
   c) Explain briefly how is modulation of laser diodes done.
   d) Discuss the principle working of lasers.

   OR

   Explain different splicing methods.

3. a) Define responsivity of photo detector.
   b) What are the factors contributing to delay?
   c) Explain briefly avalanche photodiode.
   d) Determine the expression of photo detector noise.

   OR

   Discuss different types of losses and distortion in optical fibers.

4. a) What is homodyne detection?
   b) What is heterodyne detection?
   c) Write briefly about burst mode receiver.
   d) Explain in detail about power budget of an optical link.

   OR

   Explain in detail about Rise-time budget of an optical link.

5. a) What is the concept of WDM? Why it is used?
   b) Name any three optical amplifiers.
   c) What is stimulated emission and spontaneous emission.
   d) Discuss briefly about MEMS technology.

   OR

   Discuss the principle working of optical time domain reflectometer.

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