EC-701 VII Semester Examination, December 2012

Optical Communication

Time : Three Hours Maximum Marks: 100 Minimum Pass Marks :35

Note : 1 Attampi one question from each Unit 2. All questions curry equal marks.

UNIT 1

1) a) Wi(hthchclpol'raytheor>'i»alysiscxpliiin\vhaiismcanl by acceptance angle and numerical aperture of the fiber. Also derive their expressions.

b) Explain the method of plasma activated fabrication of optical fiber.

OR

2) a) Explain what do you understand by phase and group velocity of the signal transmitted in fiber,

b) Compare step index and graded index fiber on their performance parameters.

UNIT-II

3) a) Discuss the following terms:

i) Spontaneous emission

ii) Stimulated emission

iii)Population inversion

b) Explain the fiber splicing using fusion method.

OR

4) a) Discuss the principle working of Distributed feedback laser.

b) I low con the pow er Inunching efficiency be increased.

UNIT-III

5) a) Determine the expression of quantum efficiency of photo detectors.

b) Explain intra modal dispersion in optical fibers. OR

6) a) Discussaboutthcas-alancheniulliplicationnoiscinAPD.

B) Discuss different types of linear scattering losses in optical fiber. UNIT-IV

7) a) Discuss how eye pattern is used to determine the additive noise.

b) Discuss about the muhi channel transmission techniques. OR

8) a) Discuss Ihc rise lime budget used for designing the link,

b) Discuss the working of burst mode receivers. UNIT-V

9) a) Discuss the working of isolators and circulutors.

b) Discuss the principle working of OTDR.

OR

10)Write short notes on the following:

a) Optical amplifiers

b) Chromatic dispersion compensator.