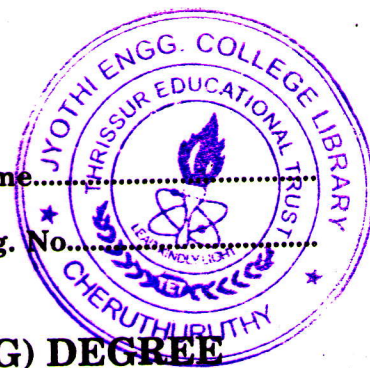


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Name.....

Reg. No.....



**SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2008**

EC 04 703 – OPTICAL COMMUNICATION SYSTEMS

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. 1. Write the concept of V-number.
2. What is meant by a polarization maintaining fiber?
3. Write the principle of operation of LASER.
4. Explain the operation of pin detector.
5. Write the difference between homodyne and heterodyne systems.
6. Write the concept of coherent system using PSK modulation in optical communication.
7. Write the basic principle of EDFA.
8. Explain the concept of semiconductor optical amplifiers.

(8 × 5 = 40 marks)

- II. (a) Explain how the zero dispersion wave length is shifted from 1.3 μm to 1.55 μm is dispersion shifted fibres.

Or

- (b) Discuss the non-linear self phase modulation effect in single mode fibers.

- III. (a) Explain the principle of operation and characteristics of LED.

Or

- (b) Draw the block diagram of optical receiver and explain the operation.

- IV. (a) Draw the block diagram of DPSK asynchronous heterodyne receiver and explain the operation.

Or

- (b) Discuss the performance degradation induced by laser phase and intensity noise.

- V. (a) Explain the principle of Raman amplifier.

Or

- (b) Explain the principle of Brillouin amplifier.

(4 × 15 = 60 marks)