

**C 80759**

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Name

Reg. No.



**SIXTH SEMESTER B.TECH. (09 SCHEME) (ENGINEERING) DEGREE  
EXAMINATION, APRIL 2015**

**EC/PTEC 09 605—OPTICAL COMMUNICATION**

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

*Each question carries 2 marks.*

1. What is diffraction ?
2. What is the effect of reflection in single mode fiber ?
3. What is the advantage of semiconductor LASER over LED ?
4. What is the advantage of IM direct detection system ?
5. What is SPE in SONET ?

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

*Each question carries 5 marks.*

6. Differentiate between Step index and Graded index fiber.
7. What is the problem with PIN diode ? How it is overcome ?
8. Explain about ISI in IM direct detection system.
9. Explain the operation of WDM.
10. Explain about RAMAN amplifier.
11. Explain the term quantum limit to receiver sensitivity.

(4 × 5 = 20 marks)

**Part C**

*Answer all questions.*

12. (a) Bring about characteristics of single and multimode fibers.

*Or*

- (b) Derive the Maxwell solution for step index fiber.

13. (a) Describe the structure and operation of LD.

*Or*

- (b) Discuss in detail the operation and structure of PIN diode.

**Turn over**

14. (a) Explain the operation and features of heterodyne IMDD system.

*Or*

(b) Describe briefly the factors affecting the performance of IMDD system.

15. (a) Discuss in detail the principle of operation of semiconductor amplifier and Brillouin amplifier.

*Or*

(b) Explain the working of DWDM and optical networks.

(4 × 10 = 40 marks)