



C14-EC-504

**4633**

**BOARD DIPLOMA EXAMINATION, (C-14)  
OCT/NOV—2017  
DECE—FIFTH SEMESTER EXAMINATION**

OPTICAL FIBRE COMMUNICATION

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List the advantages of light wave communication system over EM system.
2. List the advantages of single mode fibres over multimode fibres.
3. List various types of fibre drawing process.
4. List various losses in optical fibre.
5. List the types of fibre optic components.
6. List the types of optical couplers.
7. State the principle of laser.
8. List three features of optical source.

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9. Write the <sup>\*</sup> limitations of optical time domain multiplexing (OTDM).
10. List three types of network topologies.

**PART—B**

10×5=50

**Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the structure of optical fibre and also explain how wave propagation takes place in optical fibre with neat diagrams.
12. Explain the characteristics of loose buffered cable and tight buffered cable.
13. (a) List different structural elements used for fibre optic cable design. 5  
(b) Explain the group velocity dispersion. 5
14. Explain the working of optical time domain reflectometer.
15. Explain the working principle of optical coupler and optical isolator.
- \* 16. Explain the construction and working of LED with neat diagrams.
17. Explain the construction and working of APD with neat diagrams.
18. (a) Explain WDM in optical fibre communication. 5  
(b) Explain the uses of OFC in ethernet. 5

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