



C14-EC-504

**4633**

**BOARD DIPLOMA EXAMINATION, (C-14)  
OCT/NOV—2018  
DECE—FIFTH SEMESTER EXAMINATION  
OPTICAL FIBRE COMMUNICATION**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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 different optical spectral bands.
2. Define cone of acceptance.
3. Define waveguide dispersion.
4. List four types of fiber drawing process.
5. State the need for isolator of OFC.
6. List different optical couplers.
7. Briefly describe two types of detector used in OFC.
8. State the need for repeater/regenerator in OFC.

\* 9. List two types of WDM system.

10. List three types of network topology.

**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. (a) List three generations of optical fibre.

(b) Explain total internal reflection in optical fibre.

12. (a) List different structural elements used for cable design.

(b) Describe the characteristics of tight buffered cables.

13. Explain group velocity dispersion.

14. Explain different losses occur due to improper splicing.

15. (a) State the use of optical attenuators.

(b) Distinguish between mechanical splice and fusion splice.

16. Explain the construction and working of PIN photodiode.

\* 17. Draw the block diagram of fibre optic communication system and explain each block.

18. Explain the use of fibres in local telephone and cable TV (FTTH).

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