



C14-EC-603

4739

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
DECE—SIXTH 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. Define acceptance angle and cone of acceptance.
2. Write the advantages of single-mode fibres over-multimode fibres.
3. Distinguish between inter-modal and intra-modal dispersions.
4. What are the losses in optical fibres?
5. List various fibre-optic components.
6. Distinguish between mechanical splice and fusion splice.
7. Distinguish between repeater and optical amplifier.
8. List the differences between LED and LASER sources.
9. Define wavelength division multiplexing.
10. What are the limitations of TDM in optical fibre communication?

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[*Contd...*

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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 total internal reflection principle in optical fibre cable with relevant sketches.
- 12.** Explain Plasma activated Chemical Vapour Deposition (PCVD) method in fibre drawing process.
- 13.** (a) Describe the characteristics of loose buffered cable. 5
(b) Explain the working principle of LASER diode. 5
- 14.** (a) Explain the working of an optical coupler. 5
(b) State the need for isolator in OFC. 5
- 15.** Explain the working of Optical Time Domain Reflectometer (OTDR).
- 16.** Explain the construction and working principle of PIN photo diode.
- 17.** Draw the block diagram of fibre-optic communication system and explain.
- 18.** Explain the different network topologies used in fibre-optic networks.
