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**4633**

**BOARD DIPLOMA EXAMINATION, (C-14)**

**JUNE-2019**

**DECE - FIFTH SEMESTER EXAMINATION**

**OPTICAL FIBRE COMMUNICATION**

**Time:3 Hours**

**Max.Marks:80**

**PART-A**

**10x3=30M**

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

- 1) Define Snell's Law in optics.
- 2) Define numerical aperture (NA).
- 3) List different structural elements used for cable design.
- 4) Define wave guide dispersion.
- 5) State the function of splice in optical fibres.
- 6) List different optical couplers.
- 7) List two types of detectors used in OFC.
- 8) List three types of repeaters.
- \* 9) Draw the block diagram of WDM system.
- 10) Define optical time domain multiplexing.

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**PART-B**

**5x10=50M**

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**Instructions:** 1) Answer any five questions and each question carries ten marks.  
2) The answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

11. a) List the advantages of optical fibres over other communication media  
b) Define single mode fibre (SMF) and multimode fibre (MMF) 5+5=10
12. a) Briefly explain polarization mode dispersion. 5m  
b) Distinguish between inter modal and intra modal dispersion. 5m
13. a) Describe the characteristics of loose buffered cable. 5m  
b) Describe the characteristics of tight buffered cable. 5m
14. a) Explain different losses occur due to improper splicing 5m  
b) Distinguish between mechanical splice and fusion splice. 5m
15. a) State the use of optical attenuators. 5m  
b) State the need for isolator in FOC. 5m
16. Explain the construction and working of LASER source and give its advantages and disadvantages. 10m
17. Explain the construction and working of APD (Reach Through APD) and its advantages and disadvantages. 10m
18. a) Explain the use of fibres in local cable T.V (FTTH) 5m  
b) State the use of fibre optic cables in local area networks. 5m

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