

Optical Communication & Networks

Q.P. Code :27410

[Time: Three Hours]

[Marks:80]

N.B: Please check whether you have got the right question paper

- 1) Question no. 1 is compulsory.
- 2) Attempt any three questions from remaining questions
- 3) Figures to the right indicate full marks.

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| 1. | (a) Define Fresnel Reflection. Numerical Aperture and V-number. | 5 |
| | (b) Differentiate APD and PIN code. | 5 |
| | (c) Define Splicing. Mention its types and limitations. | 5 |
| | (d) Define Four Wave Mixing (FWM). | 5 |
| 2. | (a) Explain OTDR working principle in detail. Mention its limitation. | 10 |
| | (b) Discuss different types of Dispersion in optical fiber. | 5 |
| | (c) What is DWDM? Mention its advantages and disadvantages. | 5 |
| 3. | (a) Explain in brief any two Fiber Fabrication Techniques. | 10 |
| | (b) Explain working principle of LASER source used in optical fiber communication. | 5 |
| | (c) Compare Circulator and Isolators. | 5 |
| 4. | (a) Derive an expression for Link Power Budget Analysis of optical fiber. | 7 |
| | (b) Explain EDFA amplifier. Mention its advantages. | 8 |
| | (c) Explain Macro Bending loss. | 5 |
| 5. | (a) Explain Optical Safety and Cross talk. | 10 |
| | (b) Derive an expression for Power Penalty with Impairment. | 10 |
| 6. | Write short note on any two: | 20 |
| | (a) SONET / SDH | |
| | (b) OTDM | |
| | (c) Optical Access Network | |
| | (d) Wavelength Stabilization | |
