

No. of Printed Pages : 4 120965B/030965B
Roll No.

6th Sem. / Electrical E&E / EI

Subject : Optical fibre communication

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

- Q.1
- a) Define light source. write examples of light source.
 - b) Define refractive index.
 - c) Write down types of optical fibres.
 - d) Define Acceptance Angles.
 - e) Define Attenuation.
 - f) Define Micro-bending losses.
 - g) Define Bit-Rate.
 - h) Expand LASER.
 - i) Write advantages of LED.
 - j) Define Dark current.

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- k) Connector is a temporary joint. (True/false)
- l) Define fiber couplers.
- m) Expand TIR.
- n) Absorption losses are mainly due to _____ mechanism.
- o) Define coherent light source.
- p) Define coupling loss.
- q) Define bandwidth.
- r) Expand APD.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

- Q.2
- i) Define refractive index with the help of diagram.
 - ii) Explain different types of optical fibres with the help of diagram.
 - iii) Explain in brief different types of bending losses.

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- iv) Write down advantages of LED.
- v) Explain population inversion in brief with the help of diagram.
- vi) Draw and explain diagram of PIN photodiode.
- vii) Explain basic characteristics of detectors.
- viii) Explain types of misalignment in joining of two fibers.
- ix) Write properties of good fiber connector.
- x) Draw and explain different types of multipoint fiber couplers.
- xi) Explain different types of optical switches.
- xii) Derive the expression for numerical aperture.
- xiii) Explain different types of Butt-joint connector with the help of diagram.
- xiv) Explain in brief GRIN ROD lens based optical coupler.
- xv) Write methods to reduce modal dispersion in brief.

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SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

- Q.3 Write in detail advantages of optical communication.
- Q.4 Write in detail different types of scattering losses.
- Q.5 Define optical splicing. Explain in detail different splicing methods.
- Q.6 Explain in detail types of optical fibres on the basis of mode & refractive index with diagrams.
- Q.7 Write short note on:-
 - i) Quantum Well lasers
 - ii) Edge Emitter LED's

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