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TEST -1 EXAMINATIONS-2022

B.Tech-6th Semester (ECE)

COURSE CODE: 18B1WEC633 MAX. MARKS: 15

COURSE NAME: Optical Communication Systems

COURSE CREDITS: 03 MAX. TIME: 1 Hour

Note: *All questions are compulsory. Marks are indicated against each question in square brackets.*

Q1. What are the major advantages and drawbacks of optical communication system? Describe each in detail. [3]

Q2. Describe the block diagram of optical communication system. [3]

Q3. What is/are the drawback/s of step index optical fiber? How the graded index optical fiber overcome this/these drawback/s? [2]

Q4. What is the relevance of Numerical Aperture? Derive the Numerical Aperture for the optical fiber. [3]

Q5. The speed of light in vacuum and in the core of a step index fiber is $3x10^8$ ms–1 and $2x10^8$ ms–1, respectively. When the fiber is placed in air, the critical angle at the core–cladding interface is 75°. Calculate the (a) NA of the fiber and (b) multipath time dispersion per unit length. [2]

Q6. Differentiate among following: [2]

a. Optical couplers and optical joints
b. Fiber splices and connectors

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