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SB—33—2022

FACULTY OF SCIENCE

B.Sc. (Third Year) (Sixth Semester) EXAMINATION

JUNE/JULY, 2022

(CBCS/Old Course)

PHYSICS

Paper XV

(Fiber Optics Communication)

(Thursday, 9-6-2022)

Time : 10.00 a.m. to 12.30 p.m.

Time—2½ Hours

Maximum Marks—40

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. Explain in detail the concept of total internal reflection. 15
Or
 - (a) Discuss types of optical fibers. 7
 - (b) How does light propagate along fiber ? 8
2. Explain in detail step and graded index fibers. 15
Or
 - (a) Obtain an expression for cut-off wavelength for step index fiber. 7
 - (b) Explain single mode fiber in detail. 8
3. Solve any *two* : 10
 - (a) Acceptance angle
 - (b) Intermodal dispersion
 - (c) Multimode fibers
 - (d) Vibrational modes in optical fibers.

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