This question paper contains **2** printed pages]

SB—30—2022

FACULTY OF SCIENCE & TECHNOLOGY

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

MAY/JUNE, 2022

(CBCS/New Pattern)

PHYSICS

Paper-XV

(Fiber Optics Communication)

(Thursday, 09-06-2022) **Time : 10.00 a.m. to 12.30 noon**

Time— 2½ *Hours* *Maximum Marks*—40

N.B. :— *All* questions are compulsory.

1. Derive equation between acceptance angle and refractive indices of the media. 15

Or

(*a*) Explain total internal reflection. 8

(*b*) Explain step index single mode and multimode optical fiber waveguides. 7

2. Explain in detail types of fibers and their transmission ray characteristics. 15

Or

(*a*) Write concept of acceptance angle. 8

(*b*) Explain graded index fibers. 7

P.T.O.

3. Write short notes on (any *two*) : 10

(*a*) Snell's law

(*b*) Normalized frequency

(*c*) Cutoff wavelength

(*d*) Meridional ray and Skew ray.