



PAQ-003-1276001 Seat No. _____

M. Sc. (ECI) (Sem. VI) (CBCS) Examination

August - 2020

Fiber Optics : Paper - 21

Faculty Code : 003

Subject Code : 1276001

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions carry equal marks.
(2) Figures on right side indicate marks.

1 Answer the following : (Any Seven) 14

- (1) What is optical fiber communication ?
- (2) How does light propagate along a Fiber ?
- (3) Draw only the block diagram of fundamental communication system.
- (4) What is energy band in semiconductor materials ?
- (5) Write an equation for signal-to-noise ratio for Photodetector.
- (6) Define Snell's Law.
- (7) What are the Modes in fiber waveguide ?
- (8) What is Reflection and refraction of light ray ?
- (9) List the types of fiber optics cable.
- (10) Give the difference between step index and graded index of optical fiber.

2 Answer the following : (Any Two) 14

- (1) Write down any six advantages of Fiber optic communication. 7
- (2) Write a note on Ray Optics representation of the propagation mechanism in an ideal Step-index optical waveguide. 7
- (3) Write a note on nature of light. 7

- 3** Answer the following : **14**
- (1) Explain elements of an optical fiber transmission link with suitable figure. **7**
 - (2) Write a note on optical fiber modes and configurations. **7**

OR

- 3** Answer the following : **14**
- (1) Write a note on double-heterojunction edge-emitting LED. **7**
 - (2) Write a note on LASER diode and explain distributed feedback laser diode with suitable diagram. **7**

- 4** Answer the following : **14**
- (1) Write a detailed note on glass fibers and halide glass fibers. **7**
 - (2) Draw and describe outside vapor phase oxidation fiber fabrication techniques. **7**

- 5** Answer the following : (Any Two) **14**
- (1) Write a note on vapor phase axial deposition fiber fabrication techniques.
 - (2) Write a note on PN junctions.
 - (3) Write a note on light emitting diode.
 - (4) Write a note on Avalanche Photodiode.
