

S.No. 5341

16 SMBEEL 2:1

(For candidates admitted from 2016–2017 onwards)

B.Sc. DEGREE EXAMINATION, APRIL 2022.

Part III — Electronics — Major Based Elective

FIBER OPTIC COMMUNICATION

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. What are the optical fiber modes?
2. Define wave representation.
3. Mention Attenuation.
4. What is Cladding?
5. What is splicing?
6. Draw any two possible lensing schemes.
7. Name some Public network applications.
8. Define Homo Junction.

9. What is LAN?

10. What do you mean by Noise?

PART B — ($5 \times 5 = 25$)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the power flow in step index fiber.

Or

(b) Illustrate the ray optic representation in detail.

12. (a) Explain Mode Coupling in detail.

Or

(b) Explain the process of Group Delay.

13. (a) How the power coupling is calculated? Explain.

Or

(b) Mention the laser diode to fiber coupling in detail.

14. (a) Explain any one industrial application in detail.

Or

15. (a) Explain the fail safe fiber optic nodes in detail.

Or

(b) Explain the integrated optical switch in detail.

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Elaborate the Maxwell's Equation in detail.

17. Enumerate the Scattering loss and bending losses in optical fibers.

18. Explain the various factors of fiber to fiber joints in detail.

19. Summarize the public network applications of fiber optic communication in detail.

20. Summarize the optical amp parameters in detail.