

D 141071**(Pages : 2)****Name.....****Reg. No.....****FOURTH SEMESTER B.VOC. DEGREE EXAMINATION, APRIL 2026**

Common Course

A13—DATA COMMUNICATION AND OPTICAL FIBERS

(2021 Syllabus)

Time : Two Hours and a Half

Maximum : 80 Marks

Section A*Answer the following questions (1-15).**Each question carries 2 marks.*

1. What is meant by multipoint line configuration ?
2. Write a note on twisted pair.
3. Explain FSK.
4. What is a cable modem ? What is its working principle ?
5. What are the different types of mobile services provided by GSM ?
6. What are the challenges in the radio interface of GSM ?
7. What is poll/select method used in line discipline ?
8. What is Stop-and-Wait flow control ?
9. What is Token Bus, and how does it work ?
10. How does message switching differ from circuit switching ?
11. What are the two types of ISDN subscriber access ?
12. Write a note on single mode fiber.
13. What are the key components of a Laser Diode ?
14. What is Mode Field Diameter ? Why is important in optical fiber communications ?
15. Write a note on historical development of optical fiber communication.

(Ceiling : 25 marks)

Turn over

Section B

Answer the following questions (16 - 23).

Each question carries 5 marks.

16. What is transmission impairment ? Explain attenuation and distortion in data transmission.
17. Explain bus and ring topologies.
18. Briefly explain GSM system architecture.
19. Discuss the role of Error Control in data communication systems. What are the various techniques used for error detection and correction ?
20. Explain synchronous data transmission protocol.
21. Write a note on FDDI. Compare it with eathernet.
22. What is an LED, and how does it work as an optical source in communication systems ?
23. Explain ray theory in optic fiber communication.

(Ceiling: 35 marks)

Section C

*Answer any **two** questions.*

Each question carries 10 marks.

24. Explain different encoding techniques in data communication.
25. Compare FDM, TDM and WDM.
26. What are bit-oriented Protocols ? Explain the framing, control mechanisms, and advantages.
27. Explain the components, advantages, disadvantages and applications of optical fiber communication.

(2 × 10 = 20 marks)