C 3495 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2021

Common Course

A 13—DATA COMMUNICATION AND OPTICAL FIBERS

Time : Two Hours and a Half Maximum : 80 Marks

Section A

Answer at least **ten** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall Ceiling 30.

1. How is topology related to line configuration ?
2. Why is synchronization a problem in data communication ?
3. What are the functions of DCE ? Give an example of a DCE.
4. How does FDM combine multiple signals to one ?
5. What is the advantage of asynchronous TDM ?
6. How can the capacity of a GSM cell be increased ?
7. What are the reasons for the delays in a GSM system for packet data traffic ?
8. What is the purpose of line discipline ?
9. In what situation does the sender re-transmit a packet ?
10. What are the uses of BSC control frames ?
11. What are the advantages of FDDI over a basic Token ring ?
12. What is the basic principle of propagation of light through the fiber ?
13. What is a double heterostructure ?
14. Define dark current as applied to a photo-detector ?
15. Define mode field diameter.

(10 × 3 = 30 marks)

Turn over

Section B

Answer at least **five** *questions.*
Each question carries 6 *marks.*
All questions can be attended.
Overall Ceiling 30.

16. What are the four different methods that convert a digital signal to analog signal ?
17. Write a note on twisted pair cables.
18. Explain in detail synchronous TDM.
19. What are the two basic groups of logical channels specified by GSM ?
20. What are the two methods that control the flow of data across the communication links.
21. In HDLC, what is bit stuffing and why is it needed ?
22. What are the advantages of optical fiber communications ?
23. Distinguish between LEDs and LASERs.

(5 × 6 = 30 marks)

Section C

Answer any **two** *questions.*
Each question carries 10 *marks.*

24. Explain the different network topologies.
25. Explain the GSM system architecture.
26. Explain the three switching methods.
27. What are the different types of fibers used in optical fiber communications ?

(2 × 10 = 20 marks)