C 3495

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)