C 21497   (Pages : 2)   Name....................................

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FOURTH SEMESTER (CBCSS-UG) DEGREE EXAMINATION, APRIL 2022

Common Course for L.R.P. (Language Reduced Pattern)

A13—DATA COMMUNICATION AND OPTICAL FIBERS

Time : Two Hours and a Half   Maximum : 80 Marks

Section A

*Answer atleast **ten** questions.*
Each question carries 3 marks.
All questions can be attended.
Overall ceiling 30.

1. What are the two types of line configuration ?

2. What is the difference between information and signal ?

3. How do a guided media differ from unguided media ?

4. What is the purpose of guard bands ?

5. List two applications of multiplexing.

6. How is synchronization achieved in GSM ?

7. What are the mobile services permitted by GSM ?

8. Why is flow control needed ?

9. Define the term protocol as it relates to data communication ?

10. How are LAPB, LARD and LAPM different from each other ?

11. What is collision ?

12. What are the advantages of double heterostructure ?

13. Define Numerical aperture. Obtain an equation for the same.

14. Define cut off wavelength.

15. What are the conditions to be satisfied for laser action ?

                                                $(10 \times 3 = 30$ marks$)$

                                                    Turn over

Section B

Answer atleast **five** *questions.*
Each question carries 6 marks.
All questions can be attended.
Overall ceiling 30.

16. Discuss the different transmission modes with examples.

17. List the steps that take an analog signal to PCM code.

18. What are the elements of Radio subsytem in GSM architecture ? What are their functions ?

19. Why and when are different signalling channels needed? What are their differences ?

20. Describe the types of BSC frames.

21. What are the two popular approaches of packet switching ?

22. What are the different materials used for the manufacture of optical fibers ? How are refractive index varied in these materials ?

23. Explain the working of a PIN photodiode.

(5 × 6 = 30 marks)

Section C

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

24. What are the different types of propagation of radio waves in an unguided media ?

25. Discuss the three major multiplexing techniques in detail.

26. Write a note on different types of LANs.

27. Briefly discuss on the different optical sources that are used in optical fiber communications.

(2 × 10 = 20 marks)