QP CODE: 24020567

24020567

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE EXAMINATIONS, MAY 2024

Second Semester

Complementary Course - EL2CMT07 - ELECTRONICS - DATA COMMUNICATION

(Common for B.Sc Computer Science Model III, B.Sc Cyber Forensic Model III)

2017 ADMISSION ONWARDS

AD3A973E

Time: 3 Hours Max. Marks : 80

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Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Explain spectrum of a signal.
2. Define the terms analog and digital.
3. Define signal to noise ratio.
4. Describe the effect of noise on twisted pair lines.
5. Which major factor makes coaxial cable less susceptible to noise than twisted pair cable?
6. What does the speed of light depend on?
7. How does the sampling rate affect the transmitted digital sinal?
8. Define the components of DM?
9. Write a short note on constellation diagram with suitable example.
10. Distinguish between statistical and synchronous TDM.
11. How do the switches used in datagram networks differ from those in other switching techniques?
12. What is a local loop? What is its function?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Give the graphical representations for the following sequences (a) x(n)= {1,2,2,0,5,1,5} for n= -1 to 5 (b) x(n)= {0,2,1,-1,3,2} for n= -2 to 3

14. Explain what crosstalk is and how can it be reduced.

15. Describe the electromagnetic spectrum in communication.

16. Write the physical characteristics of an optical fibre.

17. Define the components of PCM Encoder.

18. Compare parallel and serial transmission.

19. Illustrate the advantages and disadvantages of spread spectrum techniques.

20. What is the need for switching in data communication networks? What are the types of switches used?

21. Comment on the efficiency and delay in virtual circuit networks.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. (a) What are composite signals? Explain how they can be decomposed into their components also illustrate the harmonics of a digital signal. (b) Explain the fourier series representation of a periodic signal x(t).

23. Explain radio frequency allocation and types of propagation of radio waves.

24. (a) Give an account of analog to digital conversion. (b) Draw and explain the block diagram of analog to digital conversion?

25. Write short notes on FM and PM with a focuss on its bandwidth.

(2×15=30)