

QP CODE: 20100934



Reg No :

Name :

B.Sc DEGREE (CBCS) EXAMINATION, MARCH 2020

Fourth Semester

Core Course - EL4CRT12 - DIGITAL COMMUNICATION

(Common for B.Sc Electronics and Computer Maintenance Model III, B.Sc Electronics Model III)

2017 Admission onwards

14E812C6

Time: 3 Hours

Marks: 80

Part A

Answer any ten questions.

Each question carries 2 marks.

1. Calculate the amount of information if the probability of symbol x is $p(x) = 1/4$.
2. Define Entropy.
3. Calculate the data rate required for a PCM transmission.
4. What is aliasing?
5. Which modulation technique is referred to as OOK? Why?
6. Draw the BPSK signal for bit stream 11101101.
7. Define QPSK.
8. What are the properties of Pseudo noise sequence?
9. Explain spread spectrum modulation.
10. What is meant by ubiquitous network?
11. What is meant by middleware?
12. Explain the concept of mobile computing through internet.

(10×2=20)

Part B

Answer any six questions.

Each question carries 5 marks.

13. State and explain Shannon's theorem on Channel capacity.





14. What are the advantages and disadvantages of digital communication over analog communication?
15. Explain how the redundant signal is avoided in DPCM.
16. What are the basic conditions in which a DM can be implemented?
17. With neat diagram, explain the receiver part of FSK.
18. Explain direct sequence spread spectrum.
19. Explain frequency hopping spread spectrum.
20. What is context information?
21. Compare FDMA, TDMA, CDMA, SDMA.

(6×5=30)

Part C

Answer any two questions.

Each question carries 15 marks.

22. Explain in detail the different line coding schemes, with its advantages and disadvantages.
23. What is Companding? How does it improve the performance of PCM?
24. Compare BPSK and DPSK. Discuss their generation in detail.
25. What is meant by spread spectrum technology? How is it classified? Explain the different types in detail.

(2×15=30)

