

Fifth Semester B.Sc. Electronics
DIGITAL COMMUNICATION
MODEL QUESTION PAPER
(2013 Admission onwards)

Time: Three Hours

Maximum marks: 80

Part A

Answer all the questions. Each question carries 1 mark.

1. Give the mathematical expression of entropy.
2. Give an example for digital modulation.
3. What is the maximum quantization error in PCM?
4. What type of modulation method represents bits as different phase shift of a carrier?
5. Which modulation method is used with direct sequence spread spectrum?
6. Which coding technique has inherent synchronizing features?
7. What is the channel capacity of a 5kHz bandwidth binary system?
8. Which modulation technique is associated with granular noise?
9. What is the length of PN sequence for a 8 stage feedback shift register?
10. Which modulation scheme is known as ON-OFF keying?

(1 × 10 = 10)

Part B

Answer any eight questions. Each question carries 2 marks.

11. State and explain Shannon's Theorem on channel capacity.
12. Explain signal space diagram.
13. Explain unipolar and bipolar transmission.
14. What is meant by pseudo – noise?
15. Explain RZ and NRZ coding techniques.
16. What is companding?
17. State and explain sampling theorem.
18. What are the different multiplexing schemes?
19. Compare FSK and PSK.
20. What is a full duplex system?
21. What is the bandwidth of PCM system?
22. What do you mean by codec?

(2 × 8 = 16)

Part C

Answer any six questions. Each question carries 4 marks.

23. Draw the block diagram of base band transmission system and explain.
24. How can you classify digital multiplexers?
25. Explain adaptive delta modulation system.
26. What are the advantages of digital communication over analog communication?.
27. Explain RS-232 standard in detail.
28. What are the differences between serial and parallel communication?
29. Explain Time Division Multiplexing.
30. What are the different types of modems?
31. Draw the signal space diagram of QPSK.

Part D

Answer any two questions. Each question carries 15 marks

32. Explain the PCM transmitter and receiver with block diagram.
33. Explain generation and detection of ASK and FSK with necessary diagrams..
34. Explain a suitable method for generating PN sequences with diagrams. How the PN sequence is used in a frequency hopping spread spectrum transmitter and receiver?
35. Explain serial and parallel communication.

(2 × 15 = 30)

