

Digital Modulation Techniques

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE questions from Part-B

Part-A (10 X 2=20 Marks)

1. Differentiate the multiple access strategies.
2. Compare matched filter and correlation Receiver.
3. Discuss Probability of error of ASK, PSK, FSK.
4. List the advantages of CDMA for wireless communication.
5. Draw the block diagram of Optimum Receiver.
6. Discuss the Near-far problem in DS systems.
7. Draw the block schematic of differential space time block encoder & decoder.
8. Discuss M-ary and binary modulation techniques.
9. Explain the merits and Demerits of OFDM.
10. Discuss the power spectra of MSK Signal.

Part - B (5 X 10=50 Marks)

11. a) Define power spectra. Compare Power spectra of ASK, FSK, PSK. (5)
b) What are the differences between Coherent and non coherent detection? (5)
12. a) Analyze how MSK is viewed as kind of FSK modulation scheme. (5)
b) Discuss the performance of QPSK in AWGN channel. (5)
13. a) Discuss various Synchronization Methods. (5)
b) Explain one equalization technique used in OFDM in detail. (5)
14. a) Describe the complex base band representation of FHSS and explain FH transmitter block. (5)
b) Discuss the algorithm for constructing Orthogonal Variable Spreading Factor codes. (5)
15. a) Discuss the Alamouti code transreceiver. (6)
b) Describe one technique of Space diversity on Receive in MIMO systems. (4)
16. a) Explain FEC codes. (5)
b) Discuss various types of Smart antennas? (5)
17. Write short notes on any two of the following:
 - a) Sub Optimum Detector (5)
 - b) GMSK (5)
 - c) Scrambler (5)