

Roll No.

Total Pages : 3

008402

May 2023

B.Tech. (ECE) 4th SEMESTER

Analog and Digital Communication (EC401)

Time: 3 Hours

Max. Marks :75


Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

1. (a) Define frequency domain representation of signals. (1.5)
- (b) What is meant by Angle Modulation? (1.5)
- (c) Define probability and random process. (1.5)
- (d) What is meant by Noise in Frequency modulation systems? (1.5)
- (e) Define Digital Multiplexers. (1.5)
- (f) What is meant by Baseband Pulse Transmission? (1.5)

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- (g) What is meant by Optimum detection of signals in noise? (1.5)
- (h) Define Digital Modulation tradeoffs. (1.5)
- (i) What do you understand by Probability of Error evaluations? (1.5)
- (j) Discuss carrier recovery for Digital modulation. (1.5)

PART-B

- 2. (a) Differentiate DSB, SSB and VSB modulations. (10)
- (b) Compare FM and PM. (5)

- 3. (a) Briefly explain noise in amplitude modulation systems. (5)
- (b) Compare Pre-emphasis and De-emphasis. Also explain threshold effect in angle modulation. (10)

- 4. Define TDM. Also, make comparisons among PAM, DM, PCM and DPCM. (15)

- 5. (a) Briefly explain the concept of Inter symbol Interference and Nyquist criterion. (5)
- (b) Differentiate Phase Shift Keying, Frequency Shift Keying and MSK. (10)

- 6. (a) Explain in detail maximum likelihood sequence detection (Viterbi receiver). (10)
 - (b) Discuss the concept of Synchronization for Digital modulation. (5)

 - 7. Enlist salient features of Equalization Techniques and explain Optimum demodulation of digital signals over band-limited channels. (15)
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