

CBCS SCHEME

18MT822

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Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Communication System

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the frequency spectra of Non-Sinusoidal waves. (05 Marks)
- b. What is modulation? Explain the need for modulation and its advantages. (05 Marks)
- c. With a neat block diagram, explain communication system. (10 Marks)

OR

- 2 a. Explain the operation in digital communication with neat diagram. (10 Marks)
- b. Derive the equation of sampling theorem. (10 Marks)

Module-2

- 3 a. Define Amplitude Modulation. Explain how the square law modular generator the amplitude modulation wave. (10 Marks)
- b. Explain amplitude modulation in time domain along with its necessary equation and diagram. (10 Marks)

OR

- 4 a. With a neat diagram, explain ring modulator and waveform. (06 Marks)
- b. Explain co-heret detector of DSBSC wave with block diagram. (06 Marks)
- c. State and explain costas loop with block diagram. (08 Marks)

Module-3

- 5 a. Explain Direct and Indirect FM. (10 Marks)
- b. Define : (i) Frequency modulation (ii) Wide band FM (iii) Narrow Band FM (05 Marks)
- c. Explain FM stereo multiplexing with block diagram. (05 Marks)

OR

- 6 a. Derive Non-linear effects in FM. (10 Marks)
- b. Explain linear model of phase locked loop. (05 Marks)
- c. Explain phase-locked loop. (05 Marks)

Module-4

- 7 a. Explain PAM with neat sketches and also state its advantages and disadvantages. (06 Marks)
- b. Explain TOM with neat block diagram. (06 Marks)
- c. Explain Quantization Noise with neat diagram and derive the equation of SNR. (08 Marks)

OR

- 8 a. Explain : (i) Unipolar RZ and NRZ and its applications. (10 Marks)
- (ii) Polar RZ and NRZ and its application with neat diagram. (10 Marks)
- b. Explain Quantization with neat diagram type of Quantization and Quantization Error. (10 Marks)

Module-5

- 9 a. Explain Pseudo-Noise sequence with neat diagram. (10 Marks)
b. Explain frequency hopping spread spectrum. (10 Marks)

OR

- 10 a. What are digital multiplexers and it's types? Explain TDM. (10 Marks)
b. Explain T1 carrier system with neat diagram. (10 Marks)
