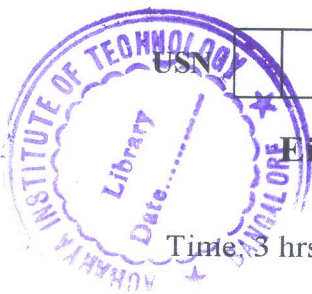


CBCS SCHEME



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15MT82

Eighth Semester B.E. Degree Examination, July/August 2021

Communication Systems

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions.

- 1 a. With neat block diagram, explain the elements of a communication system. (06 Marks)
b. Define sampling. Derive the equation for sampling theorem. (10 Marks)
- 2 a. Define modulation and elaborate on the need for modulation. (08 Marks)
b. Explain digital communication system with neat block diagram. (08 Marks)
- 3 a. What is amplitude modulation? With sketch of spectrum explain amplitude modulation both in time and frequency domain. (10 Marks)
b. With neat block diagram, explain demodulation of DSB – SC wave using Costas receiver. (06 Marks)
- 4 a. Explain AM wave generation using square law modulator. (08 Marks)
b. Explain coherent detection of DSB – SC modulated wave with block diagram, sketch of spectrum and necessary equations. (08 Marks)
- 5 a. Define angle modulation. Derive the equation for narrow band FM signal. (10 Marks)
b. With neat block diagram, explain the indirect FM generation. (06 Marks)
- 6 a. Explain FM stereo multiplexing transmitter. (08 Marks)
b. With block diagram explain the working of super-heterodyne receiver. (08 Marks)
- 7 a. Define pulse modulation. Derive the equation for Pulse Amplitude Modulated Signal (PAM) in time and frequency domain. (08 Marks)
b. Explain unipolar RZ, NRZ codes and polar RZ and NRZ, Manchester code. Also explain differential encoding. (08 Marks)
- 8 a. Explain pulse code modulation. (08 Marks)
b. With sketch explain quantization noise in Delta modulator. (08 Marks)
- 9 a. Explain the properties of pseudo noise sequence. (06 Marks)
b. With the neat block diagram, explain coherent BPSK transmitter and receiver. (10 Marks)
- 10 a. Explain Time Division Multiplexing. (08 Marks)
b. With relevant equations explain slow frequency Hop. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.