CBCS SCHEME

USN | | | | | | | | | | |

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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