Code No: 154AC

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year II Semester Examinations, March - 2022
ANALOG AND DIGITAL COMMUNICATIONS
(Electronics and Communication Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks

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1.a) Draw and explain the circuits for generating AM and AM-SC using balanced modulators.
b) Explain about COSTAS loop with a neat block diagram for demodulating DSB-SC wave. [8+7]

2.a) Explain the working of envelope detector with a neat circuit diagram.
b) Describe the single tone modulation of SSB. Assume both modulating and carrier signals are sinusoids. [8+7]

3.a) Discuss the generation of FM wave using direct method.
b) Explain how FM signal is detected with the help of PLLs. [8+7]

4.a) Explain the detection of FM wave using balanced frequency discrimination.
b) Compare of FM and AM. [10+5]

5.a) How the transmitters are classified? Compare them.
b) Draw the block diagram of TRF receiver and the function of each block. [6+9]

6.a) Explain the need for non-uniform quantization in digital communications.
b) Discuss the working of delta modulation system with a neat block diagram. [6+9]

7.a) What is Inter Symbol Interference (ISI) and ISI free signals? Explain.
b) Discuss about FSK with waveform and equation. [7+8]

8.a) Write in-detail about BPSK with waveform and equations.
b) Write a short note on optimum receiver. [8+7]

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