Code No: **R20A0406**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
II B.Tech II Semester Regular/Supplementary Examinations, July 2023
Analog & Digital Communications
(ECE)

Roll No									

Time: 3 hours   **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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		SECTION-I	**Marks**
1	**A**	Define Amplitude Modulation. Explain the generation of AM using Switching modulator.	**[7M]**
	B	Derive the Power relations in AM. When the modulation percentage is 75 AM transmitter produces 10KW. How much of this is carrier power?	**[7M]**

OR

2	**A**	Explain the generation of DSBSC using balanced modulator.	**[7M]**
	B	Describe the Phase discrimination method for generating SSB Modulated waves.	**[7M]**

SECTION-II

3	**A**	Compare PM and FM.	**[7M]**
	B	Explain the concept of Pre-emphasis and de-emphasis.	**[7M]**

OR

4	**A**	Derive Single tone FM Equation and draw the relevant waveforms. What is the value of carrier frequency in the following equation for the FM signal $v(t)= 5 \cos(6600\pi t+ 12\sin 2500\pi t)$.	**[7M]**
	B	Describe the generation of FM waves using Armstrong Method.	**[7M]**

SECTION-III

5	**A**	Illustrate the working of FM transmitter.	**[7M]**
	B	What are the various types of receiver? What are the characteristics of RF section?	**[7M]**

OR

6	**A**	Explain the working of a Super heterodyne receiver with a neat block diagram.	**[10M]**
	B	Describe the function of TRF receiver with the help of block diagram.	**[4M]**

SECTION-IV

7	**A**	Compare FDM and TDM systems.	**[7M]**
	B	Describe the method of generation and detection of PAM signals with neat schematics?	**[7M]**

OR

8	**A**	Illustrate the generation and detection of PCM.	**[8M]**
	B	Explain about Non uniform Quantization and Companding.	**[6M]**

SECTION-V

9	**A**	Explain about generation and coherent reception of BPSK Signal.	**[8M]**
	B	Define BPSK. What are the principles of BPSK? Draw the constellation diagram of BPSK.	**[6M]**

OR

10	**A**	Explain the working of ASK modulator and demodulator.	**[7M]**
	B	Illustrate about Eye pattern and its significance.	**[7M]**

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