Course Code: 1940416 **Roll No:** **MLRS- R19**

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

II B.Tech II Sem Regular End Examination, August 2021

ANALOG AND DIGITAL COMMUNICATIONS

(ECE)

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

Note: 1. Answer any FIVE questions.
2. Each question carries 14 marks and may have a, b as sub questions.

1	a)	Discuss the need for modulation and give the time, frequency domain equation of standard AM.	7M	CO1	L5
	b)	With necessary waveform explain the generation of AM switching modulator.	7M	CO1	L1
2	a)	Calculate the percentage power saving if the carrier and one of the sideband are eliminated for a modulation index of 0.45 and 0.8.	7M	CO1	L4
	b)	Draw and explain the demodulation of demodulation of SSB-SC modulation scheme with necessary equations.	7M	CO1	L2
3	a)	Define instantaneous frequency and instantaneous phase. From that develop a relation between FM and PM.	7M	CO2	L1
	b)	Show that the bandwidth of wideband FM is infinity.	7M	CO2	L1
4	a)	With necessary circuit diagrams discuss the demodulation of FM.	7M	CO2	L1
	b)	Draw and explain the operation of high level AM broadcast transmitter.	7M	CO3	L1
5	a)	Explain the disadvantages of tuned radio frequency receiver and discuss this overcome by super-heterodyne receiver.	7M	CO3	L4
	b)	Illustrate the importance of RF amplifier, tracking and IF amplifier in radio receivers.	7M	CO3	L2
6	a)	Compare the features of TDM and FDM with necessary block diagrams.	7M	CO4	L2
	b)	Write short notes on uniform, non-uniform quantization and companding techniques.	7M	CO4	L1
7	a)	With necessary block diagrams discuss the operation of delta modulation and adaptive delta modulation.	7M	CO4	L1
	b)	Compare the features of ASK, FSK, PSK and QPSK modulation schemes.	7M	CO5	L3
8	a)	Explain the generation and demodulation of QAM.	7M	CO5	L4
	b)	Discuss the design constraints of matched filter and correlator receiver.	7M	CO5	L5

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