Q.P. Code: 20EC0405

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Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech II Year I Semester Regular & Supplementary Examinations March-2023

ANALOG COMMUNICATIONS

(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

		UNIT-I			
1	a	Define Communication and brief about different types of communications.	CO1	L1	4M
	b	Explain the elements of communication system with a neat block diagram.	CO1	L2	8M
		OR			
2	a	Determine the Modulation index & Bandwidth of AM.	CO1	L3	4M
	b	With a neat diagram and relevant equations, explain the generation of AM wave using Switching modulator.	CO4	L2	8M
		UNIT-II			
3	a	Explain coherent detection of DSB-SC wave with a neat block diagram and relevant equations.	CO2	L2	6M
	b	Illustrate the effect of phase error on the output of coherent detector and calculate the percentage of power saving for a DSB-SC signal for the percent modulation of 100% and 50%.	CO3	L3	6M
		OR			
4	a	What are the advantages and disadvantages of SSB-SC signal?	CO1	L1	6M
	b	The power of an SSB transmission is 10kW. This transmission is to be replaced by a standard AM signal with the same power content. Calculate the power content of the carrier and each of the sidebands when the percentage modulation is 80%.	CO4	L3	6M
		UNIT-III			
5	a	Define angle modulation. Classify different types of angle modulation and write their mathematical expressions.	CO1	L2	6M
	b	Explain the generation of FM using Reactance Modulator.	CO2	L2	6M
		OR			
6	a	Compare between the AM & FM.	CO4	L2	5M
	b	A 20 MHz carrier is frequency modulated by a sinusoidal signal such that the peak frequency deviation is 100 kHz. Determine the modulation index and the approximate bandwidth of the FM signal if the frequency of the modulating signal is: (i) 1 kHz (ii) 15 kHz	CO3	L3	7M
		UNIT-IV			
7	a	What are the characteristics of radio receivers?	CO6	L1	6M
	b	Write a short note on sensitivity, selectivity, fidelity & image frequency.	CO6	L2	6M
		OR			
8	a	Compare the noise performance of SSB-SC system with that of DSB SC system.	CO5	L4	4M
	b	Prove that the figure of merit for SSB-SC is 1.	CO5	L3	8M

UNIT-V

9	a	Define Entropy and Mutual information.	CO6	L2	6M
	b	An analog signal band limited to 10KHZ is quantized eight levels of a PCM system with probabilities ½, ¼, 1/5, 1/5, 1/10, 1/10, 1/20, 1/20. Find Entropy & Rate of information.	CO6	L3	6M
		OR			
10		With a neat sketch, explain the modulation & demodulation of Pulse Duration Modulation.	CO3	L2	12M

*** END ***