O.P.Code: 18EC0415	R18	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations June-2024
DIGITAL COMMUNICATION
(Electronics & Communication Engineering)

Time: 3 Hours **Max. Marks: 60**

PART-A
(Answer all the Questions **5 x 2 = 10** Marks)

1	a	Define Differential Encoding.	CO1	L1	2M
	b	Define ISI.	CO2	L1	2M
	c	Define AWGN.	CO3	L1	2M
	d	Define BFSK.	CO4	L1	2M
	e	What is Parity check matrix?	CO5	L1	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	With a neat block diagram explain PCM transmitter and receiver?	CO1	L2	5M
	b	Explain the following line codes for 101001110 i) Unipolar RZ & NRZ ii) polar RZ & NRZ iii) Bipolar RZ &NRZ	CO1	L5	5M
		OR			
3	a	Draw the block diagram of digital communication system? Explain each block?	CO1	L4	5M
	b	Discuss the noise effects in Delta Modulation.	CO1	L2	5M

UNIT-II

4	a	Describe the baseband M-array PAM Transmission system.	CO2	L2	5M
	b	Give a brief explanation on modified duo binary signaling scheme.	CO2	L4	5M
		OR			
5	a	Derive the expression for impulse response of a matched filter.	CO2	L2	5M
	b	Draw the basic block diagram of baseband binary data transmission and explain each block.	CO2	L4	5M

UNIT-III

6	a	Draw the block diagram of the structure and behavior of Matched filter Receiver.	CO3	L4	5M
	b	What is the concept of orthogonal basis function?	CO3	L2	5M
		OR			
7	a	Explain the the concept of Schwarz Inequality.	CO3	L2	5M
	b	Explain signal representation of a signal N=2 and M=3.	CO3	L4	5M

UNIT-IV

8	a	Sketch with a neat diagram of M-array PSK transmitter and receiver.	CO4	L1	5M
	b	What are the parameters you can consider to choose the modulation techniques.	CO4	L5	5M
		OR			
9	a	Derive an expression for probability of error of coherent binary ASK?	CO4	L5	5M
	b	Obtain the expression for probability of error for BPSK.	CO4	L5	5M

UNIT-V

10	a	Draw and explain the block diagram of ARQ system in detail.	CO5	L5	5M
	b	Write about various types of ARQ systems.	CO5	L5	5M
		OR			
11	a	Explain the concept of Parity check matrix for linear block codes.	CO5	L4	5M
	b	Discuss in brief about sequential decoding of convolutional codes.	CO5	L4	5M

***** END *****