Q.P. Code: 19EC0415 **R19**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations July-2022

DIGITAL COMMUNICATIONS

(Electronics and Communication Engineering)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	**a**	Derive the quantization noise in PCM.	**L4**	**6M**
	b	Derive the S/N ratio of PCM.	**L4**	**6M**
		OR		
2	**a**	Write the differences between PCM, DPCM, and DM.	**L3**	**6M**
	b	List the Advantages of DM.	**L1**	**6M**

UNIT-II

3		Derive the expression for the Nyquist criterion for distortion less baseband Transmission in the absence of noise in terms of time domain & Frequency domain.	**L4**	**12M**
		OR		
4		Explain duo-binary signaling scheme through one example.	**L2**	**12M**

UNIT-III

5	**a**	Explain the concept of AWGN channel.	**L2**	**6M**
	b	With a neat sketch explain the working of correlation receiver.	**L3**	**6M**
		OR		
6	**a**	Draw the block diagram of a most basic form of digital communication system.	**L4**	**6M**
	b	Illustrate optimum receiver for AWGN channel.	**L2**	**6M**

UNIT-IV

7		Draw the block diagram of QPSK transmitter & receiver and explain each block in detail.	**L4**	**12M**
		OR		
8	**a**	Illustrate the pass band transmission model with neat diagram.	**L3**	**6M**
	b	Explain pass band transmission with band pass transmission.	**L2**	**6M**

UNIT-V

9	**a**	What is forward error correction system and explain in detail?	**L1**	**6M**
	b	Describe the matrix representation of linear block codes.	**L2**	**6M**
		OR		
10	**a**	Explain the Convolutional Encoding and Decoding methods.	**L2**	**6M**
	b	Discuss in brief about sequential decoding of convolutional codes.	**L2**	**6M**

*** END ***