Q.P. Code: 16EC421 **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year II Semester Regular Examinations May 2019

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**	Explain about Signal to Quantization in non-uniform and differential quantization.	8M
	b	Find the nyquist sampling frequency for the following base band signals i) $X(t) = 3\ Cos(4\pi x10^4 t) + Sin(2\pi x10^6 t)$ ii) $X(t) = 3\ Cos(4\pi x10^4 t)\ Cos(2\pi x10^3 t)$	4M

OR

2	**a**	Discuss Signal to Quantization noise in delta modulation.	6M
	b	Explain the DPCM system with neat diagram.	6M

UNIT-II

3		What is correlative coding? Explain its types.	12M

OR

4	**a**	Derive the mathematical expression for raised cosine spectrum.	6M
	b	Explain the rectangular pulse for a matched filter.	6M

UNIT-III

5	**a**	Explain the Gram-Schmidt orthogonalization procedure.	7M
	b	Write a brief note on signal constellation diagram.	5M

OR

6	**a**	What is the concept of orthogonal basis function?	7M
	b	Give the condition for orthogonality for basis function.	5M

UNIT-IV

7	**a**	Describe the generation and detection of DPSK.	7M
	b	Derive the probability of error for DPSK.	5M

OR

8	**a**	Illustrate the pass band transmission model with neat diagram.	6M
	b	Compare pass band transmission with band pass transmission.	6M

UNIT-V

9	**a**	What is forward error correction system? and explain in detail.	7M
	b	Describe the matrix representation of linear block codes.	5M

OR

10	**a**	Explain the Convolutional Encoding and Decoding methods.	7M
	b	Discuss in brief about sequential decoding of convolutional codes.	5M

*** END ***