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Reg. No: ☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations March-2021
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	Write the differences between PCM, DPCM, and DM.	8M
	b	Describe about Differential Encoding.	4M

OR

2	a	Draw the block diagram of digital communication system? Explain each block?	6M
	b	A Television signal having a bandwidth of 4.2 MHz is transmitted using binary PCM system. Given that the number of quantization levels is 512. Determine: i) Codeword length? ii) Transmission Bandwidth? iii) Final Bit rate? iv) Output SNR ratio?	6M

UNIT-II

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

OR

4	a	Explain about partial signaling scheme.	6M
	b	Write a brief note on Eye pattern and construct the diagram.	6M

UNIT-III

5	a	Illustrate the coherent detection of signals in noise?	6M
	b	With a neat sketch explain the working of correlation receiver.	6M

OR

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

UNIT-IV

7	Draw the block diagram of QPSK transmitter & receiver and explain each block in detail.	12M

OR

8	i) Define coherent digital modulation technique. ii) What is meant by DPSK iii) Give a brief note on BPSK iv) Write the two differences between QPSK and BPSK	12M

UNIT-V

9	a	The generator polynomial of a (15, 11) hamming code is defined by: $g(X) = 1+X+X^2$. Develop an encoder and syndrome calculator for this code, using a systematic form of the code.	6M
	b	Write short notes on Hamming codes and burst error codes.	6M

OR

10	a	Explain the Convolutional Encoding and Decoding methods.	6M
	b	Discuss in brief about sequential decoding of convolutional codes.	6M

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