

May_2012_1

Roll No.

Printed Pages : 3

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BT-6/M12

DIGITAL COMMUNICATIONS

Paper-ECE-308-E Opt. II

Time allowed : 3 hours

[Maximum marks : 100

Note : Attempt five questions in all selecting at least one question from each of the four unit.

Unit-I

1. (a) What do you mean by quantization ? Explain the process of quantization. 10
- (b) A T.V. signal having a bandwidth of 4.2 MHz is transmitted using binary PCM system. Given that the no. of quantization levels is 512. 10
Determine :
 - (i) Code word length
 - (ii) Transmission Bandwidth
 - (iii) Final Bit rate
 - (iv) Output signal to quantization noise ratio.
2. Explain the following in detail :
 - (a) Noise in PCM
 - (b) DPCM. 2×10=20

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Unit-II

3. (a) What is matched filter ? Show that impulse response of the matched filter is matched to the input signal. 10
- (b) Write a short note on tapped-delay line equalization. 10
4. (a) Highlighting the LMS algorithm, explain adaptive equalization. 10
- (b) Discuss the concept of raised cosine spectrum. 10

Unit-III

5. (a) Discuss the Gram-Schmidt orthogonalization procedure. 10
- (b) What do you mean by coherent binary F S K ? Discuss their generation and detection techniques. 10
6. Explain the following : $2 \times 10 = 20$
- (a) QASK
- (b) MSK.

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(3.)

Unit-IV

7. What is spread spectrum ? Discuss the concepts of direct sequence spread spectrum with coherent B P S K and signal space dimensionality and processing gain.

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8. Explain the following : $2 \times 10 = 20$

- (a) Frequency spread spectrum
- (b) PN sequences.

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