

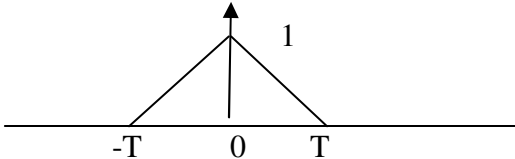
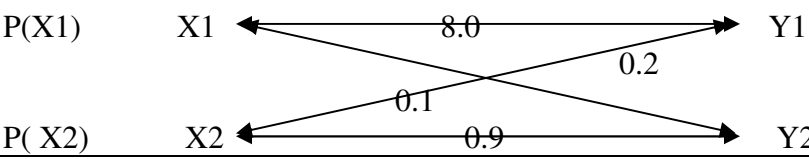


Assignment No-I

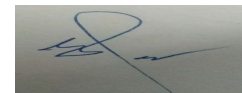
Bloom's Taxonomy Levels – 1. Remember 2. Understand 3. Apply 4. Analyze 5. Evaluate 6. Create

Question no 1, 2, 3 are based on CO405.1 - Model the different types of signals and systems using appropriate mathematical techniques & Apply Fourier series and Fourier transform for analysis of signals.

Question no 4, 5, 6 are based on CO405.2 - Apply the concept of probability theory pertaining to communication system.

Que. No	Question	BTL level
Q.1	Explain the need for the fourier Transform	L2
Q.2	Express the given signal by using Trigonometric form of Fourier expansion 	L3
Q.3	State & Prove Frequency Convolution Theorem.	L3
Q.4	State & Prove time Integration properties of the Fourier Transform.	L2
Q.5	Explain the following terms (i) Information (ii) Entropy (iii) Avg. Codeword length (iv) Efficiency	L2
Q.6	Given a binary channel shown in fig. (i) Find the channel Matrix. (ii) Find $P(Y1)$ & $P(Y2)$ When $P(X1) = P(X2) = \frac{1}{2}$ (iii) Find the Joint Probability $P(X1, Y2)$ and $P(X2, Y1)$ When $P(X1) = P(X2) = \frac{1}{2}$ 	L3
	A memory less source emits six messages with probabilities 0.3, 0.25, 0.15, 0.12, 0.1 and 0.08. Find the 4-ary (quaternary) Huffman code. Determine the average word length, the efficiency & redundancy.	L3

Last date for submission is 11/01/2018



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Subject Teacher



Sub: - Signals & Systems

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Sem.: - IV Sem..

Assignment No-II

Bloom's Taxonomy Levels – 1. Remember 2. Understand 3. Apply 4. Analyze 5. Evaluate 6. Create

Question no 1, 2, 3 are based on CO405.3 - Apply the concept of Source coding and decoding schemes for application needed.

Question no 4, 5, 6 are based on CO405.6 - Apply the knowledge of information theory for designing various codes in digital communication.

Que. No	Question	BTL level
Q.1	Write Short Notes on (i) Energy Spectrum Density (ii) Power Spectrum Density	L2
Q.2	Develop the relation between Autocorrelation & ESD.	L3
Q.3	Explain the Properties of the PSD.	L2
Q.4	Derive the Nyquist Criteria for Zero ISI.	L3
Q.5	What is Inter Symbol Interference, its Causes & Remedy	L2
Q.6	For the bit stream shown, draw the Polar RZ, Bipolar NRZ, Unipolar NRZ, Manchester code Waveforms : 1011000101	L3

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Assignment No-III

Bloom's Taxonomy Levels – 1. Remember 2. Understand 3. Apply 4. Analyze 5. Evaluate 6. Create

Question no 1, 2, 3 are based on CO405.3 - Describe concept of analog modulation & distinguish different analog modulation schemes

Question no 4, 5, 6 are based on CO405.6 - Describe concept of Digital modulation & distinguish different Digital modulation schemes

Que. No	Question	BTL level
Q.1	What is amplitude modulation ? Derive the expression for AM signal. Consider carrier as $V_c \cos \omega_c t$. What is the range of modulation index in AM ?	L2
Q.2	Explain FM threshold effect in detail.	L3
Q.3	Explain delta modulation with transmitter and receiver. Differentiate between delta modulation and adaptive delta modulation.	L2
Q.4	Explain in brief DPSK. Also explain coherent detection method of DPSK	L3
Q.5	Draw & explain in brief matched filter receiver	L2
Q.6	Draw ASK, PSK and FSK waveform for the binary sequences: i) 1100011 ii) 1010111 iii) 1111111	L3

Last date for submission is 22/03/2018

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