Exam. Code: 0932

Sub. Code: 6936

1059

B. Engg. (Electronics & Comm. Engg.) 8th Semester

EC-809: Advanced Digital Communication

Time allowed: 3 Hours

IV.

Max. Marks: 50

NOTE: Attempt <u>five</u> questions in all, including Q. No. I which is compulsory and selecting atleast two questions from each Unit. Use of scientific calculator is allowed.

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I.	(a) Explain and draw 16-QQAM constellation diagram. (2)
	(b) Explain the basic principle of multi-dimensional signaling. (2)
	(c) What is the mathematical model for linear time variant filter channel? (2)
	(d) What do you mean by linear equalization? Give its significance. (2)
	(f) Compare PAM, PM and QAM signaling. (2)

Part- A

II	(a) Explain full and partial response CPM modulation techniques along with phase trajectory
	for binary CPFSK. (5)
7	(b) Calculate power spectral density of rectangular pulse having amplitude A within 0 to T

(b) Calculate power spectral density of rectangular pulse having amplitude A within 0 to 1 time duration. (5)

III. (a) Explain correlation receiver of N correlators with MAP decision rule.

(b) Obtain optimal defection for a general vector channel.

(5)

Consider signal shown below. (10)

- (a) Determine impulse response of filter matched to this signal and sketch it as function of time.
- (b) Plot the matched filter output as function of time.
- (c) What is the peak value of the output?

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(3)

(2)

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Part-B

v.	(a) Derive decision rule for optimum demodulation of digital signal in presence of ISI	(5)
	(b) Derive minimum mean squared error for zero-forcing decision feedback equalizer.	(5)
× 7	(b) Derive minimum mean squared of the control of t	(5)
ν.	(b) Explain the concept of MLSE in discrete time white noise filter model.	(5)
v	II. (a) Explain windowing and clipping in OFDM systems. (b) Explain spectral characteristics of OFDM systems along with its mathematical	(5)
	representation.	(5)

Consider arguer shows below.

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(8) Outsit opening defection for a agreem accordance.

(f) Compare BAING PARTIES QANAGORDINA.

(a) Explain correlation receiver of he constants with MAN decision the

(c) what is the material by large chief and the factor are region in section and

(b) Explain the basecarding to of multi-dimensional algorithms.

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(b) Cottaines power spectril necesty at reconsular pulse having amplitude A within 0 to

t. (6) Register full and parket response Chiefmontheim recorders elong with place manches.

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