Q.P. Code: **16EC3811** **R16**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

M.Tech I Year II Semester (R16) Regular Examinations May/June 2017

DETECTION & ESTIMATION OF SIGNALS

(Digital Electronics and Communication Systems)

(For Students admitted in 2016 only)

Time: **3 hours** Max. Marks: **60**

(Answer all Five Units **5 X 12 =60** Marks)

UNIT-I

Q.1	a.	Discuss Probability of Error Criterion.	8M
	b.	Mention the differences between the different types of criteria used for simple binary decision problem.	4M
		OR	
Q.2	a.	Write a note on Test of Mean.	10M
	b.	Describe Maximum Likelihood Decision Criterion.	2M
		UNIT-II	
Q.3		Explain the waveform observation in Additive Guassian Noise.	12M
		OR	
Q.4		With neat diagram, discuss Integrating Optimum Receiver.	12M
		UNIT-III	
Q.5		Explain the estimation of signal in presence of Guassian Noise with linear Observations.	12M
		OR	
Q.6	a.	Define Bayes estimation criterion.	2M
	b.	Write a note on Mean Square Error criterion.	10M
		UNIT-IV	
Q.7	a.	Discuss the applications of Kalman Filter.	6M
	b.	Discuss briefly about Cramer-Rao lower bound with scalar parameters.	6M
		OR	
Q.8	a.	What is Prediction filtering?	2M
	b.	Illustrate the Kalman filter with suitable diagram and summarize how it can be used for State estimation.	10M
		UNIT-V	
Q.9	a.	Define Sufficient statistics	2M
	b.	Compare Guassian, Bernoulli and Poisson Distributions.	10M
		OR	
Q.10	a.	What is UMVUE? Explain its significance in estimation theory.	12M

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