M.E. Second Semester (Electronics & Tele.) (Full Time) (C.G.S.- New)

13341 : Adaptive Signal Processing : 2 ENTC 1

P. Pages : 2 | AU - 3465

Time : Three Hours | Max. Marks : 80

Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1.		What are random variable and random process? Explain in detail classification of random variable & random process.	13

OR

2.	a)	State & explain probability density functions (PDF) & its properties.	7
	b)	Explain any two properties of correlation matrix.	6
3.	a)	Prove that eign vectors corresponding to district eigen values of R are mutually orthogonal.	8
	b)	Explain FIR Wiener filter.	5

OR

4.		What is multiple linear regression? Explain multiple linear regression model for wiener equation.	13
5.	a)	Explain steepest descent algorithm.	7
	b)	Explain Normalized LMS filter.	7

OR

6.	a)	Explain one dimensional gradient search algorithm.	7
	b)	Explain modified LMS algorithm.	7

SECTION – B

7.	a)	State & explain Kalman filtering.	7
	b)	State & explain QRRLS algorithm.	6

OR

8.	a)	State and explain recursive minimum MSE for scalar random variables.	**7**
	b)	State and explain Kalman filtering problem.	**6**
9.	a)	Explain convergence analysis of RLS algorithm.	**7**
	b)	Explain RLS algorithm.	**6**

OR

10.		Explain RLS algorithm, Also drive mean square error in RLS algorithm with optimization.	**13**
11.	a)	Explain following terms.	**7**
		i) System Identification.	
		ii) Inverse modelling.	
		iii) Prediction	
		iv) Interference cancellation.	
	b)	How eco is minimized with the help of adaptive filtering.	**7**

OR

12.	a)	List the various applications of adaptive filter? Also explain them briefly?	**7**
	b)	Explain the roll of adaptive filter in Foetal monitoring?	**7**

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