

Code No: J4501/R16

M. Tech. II Semester Regular Examinations, May-2017

ADAPTIVE SIGNAL PROCESSING

(Common to SSP(45), DIP(63), CE&SP(46), IP (-), C & SP (80))

Time: 3 Hours

Max. Marks: 60

Answer any FIVE Questions
All Questions Carry Equal Marks

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| 1. a | Explain the characteristics and applications of adaptive signal processing. | 6M |
| b | With a neat diagram explain open and closed loop adaptation. | 6M |
| 2. a | Discuss about Principle of Orthogonality? | 6M |
| b | Derive augmented Wiener- Hopf equation for forward prediction. | 6M |
| 3. a | Explain about Gradient Search methods. | 6M |
| b | Discuss about Stability and Rate of convergence Gradient Searching Algorithm. | 6M |
| 4. a | Compare Newton's & Steepest-descent methods in terms of speed adaptation and misadjustment. | 6M |
| b | Discuss about role of Learning curves. | 6M |
| 5. a | Derive LMS adaptive algorithm. | 6M |
| b | Compare the LMS and the RLS algorithm. | 6M |
| 6. a | What are the effects of noise on the estimation of gradient vector? | 6M |
| b | Discuss about Cancellation of Echoes in long distance telephone circuits. | 6M |
| 7. a | What is a Kalman filter? What are the problems occur in Kalman filter? | 6M |
| b | Explain about the Adaptive Linear Combiner. | 6M |
| 8. | Write short notes on | |
| a | Adaptive Beam forming | 6M |
| b | Performance analysis of LMS Algorithms | 6M |
