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

Question Paper Code: 52926

M.E. DEGREE EXAMINATION, JUNE 2016

Elective

Communication Systems

15PCM515 - MIMO COMMUNICATION SYSTEMS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 20 = 100 Marks)

1. (a) Discuss in detail about MIMO fading channel models.   (20)

Or

    (b) Examine the performance of fading channel models in SISO system.   (20)

2. (a) Draw a V-Blast architecture and discuss in detail.   (20)

Or

    (b) Draw a D-Blast optimal architecture and discuss in detail.   (20)

3. (a) Explain code design criteria for quasi-static channels.   (20)

Or

    (b) Discuss the performance analysis of Quasi-orthogonal designs.   (20)

4. (a) Draw the phase tree for the continuous phase FSK signal featuring the modulation index $h = 0.7$. Show the path of the signal on this tree if the data sequence at the modulator input is 011010001011. Assume that binary zero is represented by the data symbol $a_i = (-1)$ and binary one by data symbol $a_i = 1$. (20)

Or

(b) Draw the state transition diagram and the state transition table of a J-K filp-flop explain in detail. (20)

5. (a) Discuss in detail about the contribution of MIMO systems in 4G technologies. (20)

Or

(b) Explain the working principle MIMO uplink and downlink multiple transmit antennas. (20)

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