Reg. No. :

Question Paper Code: 53P21

M.E. DEGREE EXAMINATION, NOV 2017

Third Semester

Communication Systems

15PCM301 - WIRELESS COMMUNICATION ENGINEERING

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) (i) Accumulate the various types of outdoor propagation models and compare the Performances. (15)

    (ii) Organize the procedure involved in link budget calculation. (5)

Or

   (b) (i) Explain the two-ray model in detail. (10)

    (ii) Describe in detail about Embrical path loss models. (10)

2. (a) (i) Explain in detail about capacity in AWGN. (10)

    (ii) Discuss in detail about the channel and system model and CDI of flat fading channels. (10)

Or

   (b) Discuss the channel side information at receiver in flat fading channel. (20)

3. (a) Explain the receiver diversity and discuss:

        (i) Selection combining (10)

        (ii) Threshold combining (10)

<div align="center">Or</div>

   (b) (i) Compute the average probability of bit error for DPSK modulation under three branch MRC. (10)

        (ii) Explain in detail about realization of independent fading paths. (10)

4. (a) Explain the data transmission using multiple carriers and multicarrier modulation with overlapping subchannels. (20)

<div align="center">Or</div>

   (b) Explain and derive the equation for why we go for cyclic prefix in discrete implementation of multi carrier modulation. (20)

5. (a) (i) Discuss the trade-off between diversity and multiplexing in a MIMO communication system. (15)

        (ii) Outline the beam forming technique. (5)

<div align="center">Or</div>

   (b) (i) Explain about space-time modulation and coding. (10)

        (ii) Briefly about MIMO channel capacity. (10)

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