5E1356

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B.Tech. V-Sem. (Back) Examination, January/February - 2024

PCC/PEC Computer Sc. & Engg.

5CS5-11 Wireless Communication

CS, IT

Time : 2 Hours **Maximum Marks : 80**

Mm. Passing Marks: 28

Instructions to Candidates:

- **Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.**

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No.205)

PART - A

(Answer should be given up to 25 words only)

ALL questions are Compulsory. **(5×2=10)**

1. What is multipath and fading.
2. Explain multiple access techniques.
3. Write OFDM principle.
4. Write the different types of Diversity.
5. Write the difference between fading and nonfading channels.

PART - B

(Analytical/Problem solving questions)

Attempt any FOUR questions. **(4×10=40)**

1. Explain the large scale path loss in wireless channels.
2. Explain the effect of fading and multipath propagation in mobile communication.

3. Differentiate between FDMA, TDMA, CDMA.

4. Explain cyclic prefix, windowing PAPR with respect to OFDM.

5. How to active Equalization in multipath mitigation techniques?

6. Explain MIMO System.

PART - C

(Descriptive/Analytical/Problem Solving/Design questions)

Attempt any TWO questions. **(2×15=30)**

1. Why do we need multiple access technique? With all relevant merits. Explain the working of CSMA/CD technique?

2. Explain the principle of offset QPSK, p/4- DQPSK, minimum shift keying, Gaussian minimum shift keying and also compare them.

3. Explain following in details.

   a) Adaptive equalization

   b) Zero forcing and LMS algorithms.

   c) Rake receiver.
