

Code No: R15A0422

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech I Semester Supplementary Examinations, April 2023

Cellular & Mobile Communications

(ECE)

Roll No									
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Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- 1). a Define Fading and its disadvantages? [2M]
- b Explain cross talk and Coherence time? [3M]
- c Explain adjacent channel interference? [2M]
- d Explain Polarization diversity? [3M]
- e Explain Signal reflections in flat surface? [2M]
- f Define Near distance propagation? [3M]
- g Define sectorization? [2M]
- h Define channel borrowing? [3M]
- i Write Handoff applications ? [2M]
- j Explain power difference handoff? [3M]

PART-B (50 MARKS)

SECTION-I

- 2 Explain the Basic Cellular Mobile System with neat block diagram. [10M]
OR
- 3 Determine the signal to co-channel interference ratio at the mobile receiver located at the boundary of its omnidirectional operating cell, under the influence of interfering signals from six co-channel interfering cells in the first tier in a cellular system designed with $N=4$. Assume path loss exponent is 4. [10M]

SECTION-II

- 4 Discuss how antenna height effects the coverage and interference of cellular system. [10M]
OR
- 5 Write the effect on coverage and interference by power decrease in Non-co channel interference [10M]

SECTION-III

- 6 Draw the neat diagram and derive the general formula for mobile propagation over water and flat open area [10M]

OR

- 7 Explain constant standard deviation and straight line path loss slope. [10M]

SECTION-IV

- 8 Explain the Space diversity antennas and umbrella pattern antennas [10M]

OR

- 9 Explain the Numbering and grouping, setup access and paging channels in Frequency Management. [10M]

SECTION-V

- 10 Explain in detail the need for hand off and determine the probability of requirement of hand off. [10M]

OR

- 11 How can handoff be initiated at the boundary of two cells, based upon threshold point considering signal at two base stations & Explain Intersystem handoff. [10M]
