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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech I Semester Supplementary Examinations, April 2023
Cellular & Mobile Communications
(ECE)

Roll No										

Time: 3 hours   **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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SECTION-I
1 **A** List the drawbacks of conventional cellular systems.   **[7M]**
    B What is fading? Explain about various fading techniques.   **[7M]**

OR

2 **A** Explain the Co- channel interference reduction factor and derive the general formula for C/I.   **[7M]**
    B What is frequency reuse? Draw the frequency reuse patterns for K=4 and indicate frequency reuse distance.   **[7M]**

SECTION-II
3 **A** Define diversity. Describe the frequency diversity and time diversity.   **[7M]**
    B Explain the design of antenna system.   **[7M]**

OR

4 **A** What are the various non-co channel interferences? Explain.   **[7M]**
    B How the coverage area effected by as the power and antenna size decrease?   **[7M]**

SECTION-III
5 **A** How the Human made structures and natural structures effect the received signal strength? Explain in detail.   **[7M]**
    B Explain about the effects of propagation of mobile signals over a flat open area.   **[7M]**

OR

6 **A** Explain the free space propagation model and derive equation for received power.   **[7M]**
    B Derive the phase difference expression for direct and reflected path   **[7M]**

SECTION-IV
7 **A** Explain how channel sharing and borrowing is performed.   **[7M]**
    B Explain how umbrella pattern antennas are used as the cell site antennas.   **[7M]**

OR

8 **A** What are the sectorization methods used for cell configuration?   **[7M]**
    B Describe about non fixed channel assignment.   **[7M]**

SECTION-V
9 **A** What are the classifications of handoff? Explain in detail.   **[7M]**
    B Define Delayed Handoff. What are the advantages of delayed handoff?   **[7M]**

OR

10 **A** Define Call drop rate and obtain the expression for it.   **[6M]**
     B Write short note on

a) Intersystem handoff **[4M]**
b) mobile assisted handoff **[4M]**
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