

**Code No: RT42041**

# R13

## Set No. 1

**IV B.Tech II Semester Supplementary Examinations, July/August - 2017**

# CELLULAR AND MOBILE COMMUNICATION

**(Electronics and Communication Engineering)**

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

**Question paper consists of Part-A and Part-B**

**Answer ALL sub questions from Part-A**

**Answer any THREE questions from Part-B**

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**PART-A** (22 Marks)

1. a) What are the advantages of cellular systems over conventional telephone systems? [4]
- b) What are the various types of non-cochannel interference? [3]
- c) Define the gain of an antenna and write the expression for it. [4]
- d) Explain the advantages of cell sectorization over cell splitting. [4]
- e) What is handoff? Describe its classification. [4]
- f) List out the features of GSM. [3]

**PART-B** (3x16 = 48 Marks)

2. a) Why the shape of a cell is represented with hexagon? Explain with an example. [8]  
b) Define the co-channel interference reduction factor and derive the expression for it. [8]
3. a) Explain the effects of human made structures on mobile propagation. [8]  
b) Explain the functions of diversity receiver with the help of a neat diagram. [8]
4. a) Explain how the interference is reduced by means of directional antennas. [8]  
b) What are the different types of antennas used for mobile station? Explain any one. [8]
5. a) Draw the diagram of frequency management chart and explain different channels in cellular system. [8]  
b) Explain the non-fixed channel assignment technique in detail. [4]  
c) Explain how 'grouping' of channels is achieved. [4]
6. a) What are the various handoff initiation techniques? Explain any one. [8]  
b) Define the dropped call rate and obtain the expression for it. [8]
7. a) What are the various functional blocks in GSM architecture? Explain Network switching subsystem. [8]  
b) Explain the concept of CDMA and write its advantages over TDMA. [8]