

Total No. of Questions : 10 ] [ Total No. of Printed Pages : 3

Roll No. ....

## EC-602(N)

**B. E. (Sixth Semester) EXAMINATION, June, 2011**

(Electronics & Communication Engg. Branch)

CELLULAR MOBILE COMMUNICATION

[EC-602(N)]

*Time : Three Hours*

*Maximum Marks : 100*

*Minimum Pass Marks : 35*

**Note :** Attempt *one* question from each Unit. All questions carry equal marks.

### Unit-1

1. (a) Describe a basic cellular system and discuss its performance criteria.  
(b) Define frequency reuse. Why is it useful in cellular telephone systems ? What is meant by frequency reuse factor ?

*Or*

2. (a) Describe the process of cell splitting, segmentation and dualization.  
(b) Define and explain hand off mechanism. What is the difference between soft and hard hand off ?

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**Unit - II**

3. (a) Explain co-channel interference and how it affects the system capacity. Derive expression for signal to interference ratio.  
(b) Describe the diversity receivers.

Or

4. (a) Discuss and derive the expression for co-channel interference reduction factor.  
(b) Discuss various types of non-co-channel interference. Also explain the effect on coverage and interference by applying power decrease and antenna height decrease.

**Unit - III**

5. (a) Discuss the propagation over water or flat area between fixed stations.  
(b) Discuss the effect of cell site antenna heights and visualization of signal coverage cells.

Or

6. (a) Explain how to obtain mobile point to point model.  
(b) What are different types of cell site and mobile antenna? Explain.

**Unit - IV**

7. (a) Describe the various aspects on fixed and non-fixed channel assignment. What is sectorization? Give the comparison of omni cell and sectorized cell.  
(b) What are the cell site hand off and intersystem hand off?

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*Or*

8. (a) Discuss the traffic load on a set up channel and on voice channels. What do you understand by channel assignment ?
- (b) Explain the following :
- (i) Delaying of hand off
  - (ii) Difference hand off
  - (iii) Mobile assisted hand off

**Unit - V**

9. (a) Describe the GSM system architecture. Also outline the services offered by GSM.
- (b) Describe code division multiple accessing. Why power management is required in CDMA system ? Write mechanism to do so.

*Or*

10. (a) Briefly describe the GSM cellular telephone system. What are different channel types used in GSM ? Also explain, how a call is made in GSM.
- (b) Explain the following :
- (i) Cordless phone
  - (ii) Mobile satellite communication