Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EC-6001 (CBGS)

B.E. VI Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Cellular Mobile Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Discuss the concept of frequency reuse channels.
   b) Explain basic cellular system in detail.

2. a) Determine the expression of power difference between the direct path and ground reflected path for a simple model.
   b) Explain the effects of cell site antenna heights.

3. a) Discuss the design of directional antennas in k = 7 cell pattern and find (C/I) ratio for worst case. What will be (C/I) for k = 4 cell pattern?
   b) Explain the term "adjacent channel interference". How it can be reduced?

4. a) Discuss about the fixed assignment technique.
   b) What is Hand off? What do you mean by soft hand off and hard hand off? What are the characteristics of soft hand off and hard hand off?

5. a) Explain the various type of channels and channel modes used in GSM.
   b) Discuss output power limits and control in CDMA.

6. a) Why 800 MHz was assigned to cellular radio system?
   b) Determine the number of customers in the system, if during a busy hour, the number of calls per hour for each of the 8 cells is 2000, 3000, 500, 1000, 1200, 1800, 2500, 2800. Assume that 60 percent of the car phones will be used during this period and one call is made per car phone.

7. a) In a mobile radio environment, for hilly terrain of height H = 100m, the average cell site antenna height is about 50m, the mobile antenna height is about 3m and the communication path length is 5 km. Find the incident angle and the slope angle.
   b) Explain point-to-point prediction model for obtaining path loss in obstructive condition.

8. Write short notes on any three
   i) Sectorization
   ii) Paging channel
   iii) Mobile to mobile propagation
   iv) Call processing

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