

**M. E./M. Tech. (Second Semester)****EXAMINATION, Oct., 2009****MOBILE COMPUTING****(Elective—II)***Time : Three Hours**Maximum Marks : 100**Minimum Pass Marks : 40***Note :** Attempt any five questions.

1. (a) Explain the limitations of Conventional Mobile System ? How are they overcome by cellular system ? 10
- (b) Explain the frequency hopping and direct sequence spread spectrum. 10
2. (a) What is the difference between MIMO and SIMO radio channel ? 10
- (b) Explain the two kinds of cell splitting and differentiate them. 10
3. (a) Write a short note on Mobile to Mobile Propagation. 8
- (b) State the merit of point to point model and give general formula of point to point model. 12
4. (a) During a busy hour, the number of calls per hour  $\theta_i$  for each of 10 calls is 2000, 1500, 3000, 500, 1000, 1200, 1800, 2500, 2800 and 900. Assume that 60% of the car

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phones will be used during the busy period and that one call is made per car phone. Find out the total number of customer in the system. 8

- (b) Explain the different types of handoff in detail. 12
5. (a) Explain the fixed channel assignment. 8
- (b) Write a short note on the Frequency Management and Co-channel interference. 12
6. (a) What is location management ? What are the three components of location management ? What are the tradeoff between them ? 12
- (b) How do you reduce the dropped call rate and explain ? 8
7. (a) Explain the formulas of Dropped call rate. 10
- (b) Explain in detail protocol architecture of GSM. 10
8. Write short notes on any four of the following : 20
- (i) Soft and hard handoff
- (ii) Mobile IP
- (iii) Design of a Directional antenna system
- (iv) Channel Assignment
- (v) CDMA

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