

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
Test-1 Examination-September 2016  
B.Tech. VII<sup>th</sup> Semester

Course Code: 15B1WCI731

Max. Marks: 15

Course Name: Mobile Computing

Course Credit: 3

Max. Time: 1 Hr

*Note: All questions are compulsory. Carrying of mobile phone during examination will be treated as case of unfair means.*

1. Answer the following questions: [5\*1=5 Marks]
  - a. Explain the concept of umbrella cells.
  - b. What is the non prioritized scheme for handoff?
  - c. What is the need of out of band signaling?
  - d. What are LSSU's? Why are they used?
  - e. Consider if a vehicle travels through the cellular mobile system at 150 kmph, find how often the handoffs take place if the cell radius is 10 km.
2. What are the issues faced in the placement of the base stations? Explain all the scenarios. What is the best scheme chosen for the same and why? [2 Marks]
3. A FDD cellular system uses **two 15 kHz** simplex channels to provide a full duplex voice and control channels. A total of **45 MHz** of bandwidth is allocated to the system. Compute the total no. of channels available per cell if the system uses **a) 5- cell reuse b) 12-cell reuse**. [2 Marks]
4. Explain the SS7 architecture in detail. [3 Marks]
5. Suppose a user is travelling from Delhi to Bangalore via flight. List down the procedure that will be followed to take care of Roaming Management for his number. Also explain how the call will be delivered to him if a user calls him from Bangalore. Use suitable diagrams wherever required. [3 Marks]