Roll No.										

Paper Code: MCA-414

MCA
(SEM IV) EVEN SEMESTER EXAMINATION, 2015-16
MOBILE COMPUTING

[TIME: 3 hrs.] **[Max. Marks: 100]**

Note:-Attempt All questions. All questions carry equal marks.

1. Attempt any four parts of the following:- **[5x4=20]**

(a) What are various technical challenges in mobile computing?
(b) How a cellular telephone call is made?
(c) What is GPRS? Explain its architecture in detail.
(d) Write short note on CDMA.
(e) Discuss the architecture of GSM. Also explain the security issues to implement GSM .
(f) If a signal to interference ratio of 15 dB is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is (a) n=4,(b) n=3? Assume that there are 6 co-channels cells in the first tier, and all of them are at the same distance from the mobile.Use suitable approximations.

2. Attempt any four parts of the following:- **[5x4=20]**

(a) What are hidden node and exposed node problems in wireless LAN? How it is addressed in MACA?
(b) Explain Adhoc and infrastructure based wireless networks.
(c) What is Bluetooth? Give its technical specifications.
(d) Explain IEEE 802.11 protocol architecture and frame format.
(e) Compare SDMA,TDMA, FDMA and CDMA in terms of transmission technique, signal separation, advantages disadvantages and its application.
(f) What kinds of problems may arise if TCP is implemented over wireless networks? Explain.

3. Attempt any two parts of the following:- **[10x2=20]**

(a) Discuss the impact of mobility on the following aspect of data management.
(i) Transaction (ii) query processing
(b) Discuss the major challenges related to data management in mobile computing.
(c) Explain disconnected operation in detail.

4. Attempt any two parts of the following:- **[10x2=20]**

(a) What do you understand by mobile agents? Describe the model for mobile agent based computing.
(b) Discuss the possible ways to provide security to mobile agents.
(c) What is mobile transaction? Explain the type of mobile transaction

5. Attempt any two parts of the following:- **[10x2=20]**

(a) Distinguish among proactive, reactive and hybrid protocols. Explain TORA what happened if a link is broken with the help of an example.
(b) Discuss the ad hoc on demand distance vectors routing. How is it different than standard distance vector algorithm?
(c) What do you understand by MANET? Describe real life scenario where it can be used.