ROLL NO. _____

Code: CT78 **Subject: MOBILE COMPUTING**

ALCCS

Time: 3 Hours **JUNE 2016** **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:

- **Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.**
- **Parts of a question should be answered at the same place.**

Q.1 a. Mention any four challenges of mobile computing.

b. What is the maximum number of callers in each cell in a GSM?

c. What do you mean by Radio Frequency Identification (RFID)?

d. Discuss the process of subscriber authentication used in GSM to ensure security.

e. Mention atleast four limitations/challenges that wireless LAN technology needs to overcome.

f. Differentiate between adjacent channel and co-channel interference.

g. List any four challenges for mobile agents. **(7×4)**

Q.2 a. Differentiate among FDMA, TDMA and CDMA. **(6)**

b. Discuss various identifiers/addresses-IMEI, IMSI, MSISDN, MSRN, LAI, and TMSI - used in GSM. **(6)**

c. Describe two techniques for enhancing cellular system capacity **(6)**

Q.3 a. Explain the concept of Bluetooth. How does it differ from wireless LAN? **(6)**

b. Compare Mobile IP and Cellular IP. **(6)**

c. What are the several requirements that accompanied the development of the mobile IP as a standard to enable mobility in the internet? **(6)**

Q.4 a. What are the transmission impairments that affect wireless signals? Explain. **(6)**

b. What is location management? List and explain various requirements for location management. **(6)**

c. Compare static and dynamic channel assignment techniques. **(6)**

Q.5 a. What are the different types of Inter Frame Space (IFS) used by IEEE 802.11 protocol? Explain their purpose. **(6)**

b. Frequency hopping is a technique widely used for transmission of data in wireless systems, such as Bluetooth and Wireless LANs.
(i) Briefly explain the technical parameters used in frequency hopping.
(ii) List the advantages of using frequency hopping in wireless communications systems by comparing to spread spectrum techniques such as DSSS. **(6)**

c. What are the different interleaving and repetition schemes to objects and segments used by Multimedia Object Transfer Protocol? **(6)**

Q.6 a. Define the terms Session Mobility, Service Mobility and Network mobility. **(6)**

b. Discuss two basic transport mechanisms used by Digital Audio Broadcasting (DAB). **(6)**

c. Explain the process of agent discovery and registration in Mobile IP. **(6)**

Q.7 a. Explain security framework for mobile environment. **(6)**

b. Draw the architecture of GSM and explain its working. **(6)**

c. Write a short note on any one of the following:
(i) Pervasive Computing
(ii) Reduced User Interface
(iii) Wearable Computing. **(6)**