Babu Banarasi Das National Institute of Technology & Management, Lucknow.

Department of Computer Science & Engineering

B.Tech. Eight Semester

THIRD SESSIONAL EXAMINATION, 2011-2012

MOBILE COMPUTING (ECS-087)

Time: 3 Hours   *Total Marks: 100*

Note: Attempt **FOUR parts** *from* **Question No. 1,2** & **Two parts** *from* **Question No. 3, 4, 5**. *Each Question carry equal Marks.*

1) a) Discuss major challenges of mobile Computing.

b) Give the Architecture of GSM, and discuss various units with their responsibilities.

c) Write down the procedure for Call-Handoff & Location Updating.

d) Describe cellular systems? Also discuss adv. & disadvantages? Why the size of cell is hexagonal?

e) Discuss different channel allocation schemes used in cellular systems.

f) Distinguish between HSCSD and GPRS. What architectural additions need to be made in existing GSM to have support of GPRS.

2) a) Define the following term in CDMA:-
i) Service Aspect
ii) N/W Reference Model
iii) Key characteristic of CDMA 2000

b) What is spread spectrum? Explain FHSS and DSSS.

c) Sketch a neat diagram of Bluetooth protocol stack. State the functions of Radio layer, Base band layer, L2CAP Layer.

d) Discuss various components of 802.11-Wireless LAN architecture.

e) Explain GPRS Protocol stack & System Architecture.

f) Describe various data management issues in mobile environments.

3) a) List the entities of Mobile-IP and describe data transfer from fixed node to mobile node and vice versa. Why and where encapsulation is needed.

b) Why does traditional TCP not perform well in wireless network? Discuss different approaches which have been suggested for increasing TCP performance in wireless & mobile envoirnment.

c) What are hidden and exposed node problems in wireless LAN? How it is addressed in MACA.

d) What is multicluster architecture? Discuss distributed clustering algorithm.

4) a) What do you understand by MANET? What advantages do Adhoc network offer? Explain in detail by giving suitable example.

b) What are mobile agents? What are the benefits? Discuss the classification of fault tolerant schemes for mobile agents.

c) Discuss different security threats stemming from:

(i) An agent attacking an agent platform.

(ii) An agent platform attacking an agent.

d) Describe briefly the design of CODA file system.& hence explain different states of Venus. Draw a state transition diagram of Venus.

5) a) Explain any two with examples:
   i)   Proactive routing & reactive routing protocols.
   ii)   Source routing
   iii)   Static and dynamic routing.

b) Discuss any two routing protocols with example:
   i)   DSDV
   ii)   AoDV
   iii)   GRS
   iv)   DSR
   v)   TORA

c) Attempt any two:
   i) What are security design and performance issues in mobile agent systems?
   ii) Describe the WAP protocol stack architecture.
   iii) Characteristics of Mobile-Transactions and issues related to MTPS.