Code No. N0523      **R07**      Set No.1

### IV B.Tech I Semester Supplementary Examinations, February/March, 2012
### MOBILE COMPUTING
#### (Common to Computer Science & Engineering, Information Technology and Electronics & Computer Engineering)

Time: 3 hours          Max. Marks: 80

### Answer any FIVE Questions
### All Questions carry equal marks
*****

1.  a) Discuss about the mobile services and data services in GSM. [8]
    b) Describe in detail with the architecture for mobile communications. [8]

2.  a) Write in detail about Code division multiple access (CDMA). [8]
    b) What are benefits of reservation schemes? How are collisions avoided during data transmission, why is the probability of collisions lower compared to classical Aloha? What are disadvantages of reservation schemes? [8]

3.  a) What is the basic purpose of DHCP? Name the entities of DHCP and give basic DHCP configuration. [8]
    b) List the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice versa. Why and where is encapsulation needed? [8]

4.  a) Discuss about snooping TCP. Also focus on its advantages and its disadvantages. [8]
    b) Explain the usage of selective retransmission in TCP in mobile networks. [8]

5.  a) Discuss in detail about different hoarding techniques for databases. [8]
    b) Explain about transactional models in detail. [8]

6.  a) Explain in detail about pull based data dissemination mechanism. [8]
    b) Discuss in detail about communication asymmetry and illustrate this with an example. [8]

7.  a) Define MANET. Give spectrum of MANET applications in detail. [8]
    b) Name the main differences between multi-hop ad-hoc networks and other networks. What advantages do these ad-hoc networks offer? [8]

8.  a) Discuss in detail about hierarchical routing algorithms in mobile adhoc networks. [8]
    b) Describe in detail about security in MANETs. [8]

1of 1

**Code No. N0523**                  **R07**                  **Set No.2**

IV B.Tech I Semester Supplementary Examinations, February/March, 2012
**MOBILE COMPUTING**
(Common to Computer Science & Engineering, Information Technology
and Electronics & Computer Engineering)

Time: 3 hours                                                      Max. Marks: 80

**Answer any FIVE Questions**
**All Questions carry equal marks**
*****

1.  a) Explain about the concept of localization and calling in detail. Also discuss different
       types of handover in GSM.                                                          [8]
    b) Explain about the novel applications and limitations of mobile computing.          [8]

2.  a) Explain in detail about multiple access with collision avoidance.                  [8]
    b) How does the near/far effect influence TDMA systems? What happens in CDMA
       systems? What are countermeasures in TDMA systems, what about CDMA systems?        [8]

3.  a) Explain packet flow if two mobile nodes communicate and both are in foreign
       networks. What additional routes do packets take if reverse tunneling is required? [8]
    b) Explain about IP packet delivery to and from the Mobile nodes and illustrate this
       with an example.                                                                   [8]

4.  a) Describe in detail about Indirect TCP and discuss several advantages with I-TCP.   [8]
    b) Explain about transaction oriented TCP in detail.                                  [8]

5.  a) Explain about power aware and context aware computing in detail.                   [8]
    b) Describe about client server computing with adaption in detail.                    [8]

6.  a) What is communication asymmetry? Discuss about data dissemination in detail.       [8]
    b) Describe in detail about selective tuning techniques.                              [8]

7.  a) Explain about Destination sequence distance vector (DSDV) routing in mobile
       AdHoc networks.                                                                    [8]
    b) Think of ad-hoc networks with fast moving nodes, e.g., cars in a city. What problems
       arise even for the routing algorithms adapted to ad-hoc networks? What is the situation
       on highways?                                                                       [8]

8.  a) Discuss about the treatment of protocols of all layers in WAP.                     [8]
    b) Describe about the link management in Bluetooth.                                   [8]

1of 1

**Code No. N0523** **R07** **Set No.3**

### IV B.Tech I Semester Supplementary Examinations, February/March, 2012
### MOBILE COMPUTING
#### (Common to Computer Science & Engineering, Information Technology
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**Time: 3 hours** **Max. Marks: 80**

#### Answer any FIVE Questions
#### All Questions carry equal marks
***** 

1. a) Describe in detail about the system architecture of GSM. [8]
   b) Define mobile computing. Discuss about the limitations and applications of mobile computing. [8]

2. a) Tabulate SDMA, TDMA, FDMA and CDMA. [8]
   b) Explain about hidden and exposed terminals in detail. [8]

3. a) Discuss about different ways of registration depending on the location of the COA. [8]
   b) Explain how tunneling works in general and especially for mobile IP using IP-in-IP, minimal, and generic routing encapsulation, respectively. Discuss the advantages and disadvantages of these three methods. [8]

4. a) Give an overview of classical enhancements to TCP for mobility. [8]
   b) Discuss in detail about mobile TCP. [8]

5. a) Describe in detail about quality of service issues. [8]
   b) Explain about recovery in detail. [8]

6. a) Give classification of new data delivery mechanisms. [8]
   b) Explain about indexing techniques for data dissemination. [8]

7. a) Discuss about security in MANETS. [8]
   b) Explain about Dynamic source routing protocol in MANETs. [8]

8. a) Explain about Cluster head-Gateway Switch Routing protocol in detail. [8]
   b) Explain about difficulties in comparison to wired networks, and give the following observations concerning routing can be made for ad-hoc networks with moving nodes. [8]

1of 1

**Code No. N0523**　　　　　　　　**R07**　　　　　　　**Set No.4**

### IV B.Tech I Semester Supplementary Examinations, February/March, 2012
### MOBILE COMPUTING
#### (Common to Computer Science & Engineering, Information Technology
#### and Electronics & Computer Engineering)

**Time: 3 hours**　　　　　　　　　　　　　　　　　　　　　　　　**Max. Marks: 80**

#### Answer any FIVE Questions
#### All Questions carry equal marks
**\*\*\*\*\***

1. a) Explain about the architecture of mobile computing. [8]

   b) Elucidate in detail about the radio interface and protocols of GSM System architecture. [8]

2. a) Discuss in detail about Time Division Multiple Access TDMA. [8]

   b) Explain in detail about spread Aloha multiple access (SAMA). [8]

3. a) Describe in detail about agent discovery and registration. [8]

   b) Discuss in detail about generic routing encapsulation in mobile IP. [8]

4. a) Explain about Transmission/time-out freezing approaches in mobile TCP. [8]

   b) Show the interaction of mobile IP with standard TCP. Draw the packet flow from a
   fixed  host to a mobile host via a foreign agent. Then a handover takes place. What
   are the following actions of mobile IP and how does TCP react? [8]

5. a) Explain in detail different cache invalidation mechanisms. [8]

   b) Discuss about query processing in mobile networks. [8]

6. a) Describe in detail about push based data dissemination mechanism and focus on its
   advantages and disadvantages. [8]

   b) Explain in detail about hybrid based mechanism and discuss its significance. [8]

7. a) What is Mobile AdHoc network? Explain its properties and limitations. [8]

   b) Explain about ad-hoc on-demand distance vector protocol in detail. [8]

8. a) Explain in detail about the protocol architecture of wireless application protocol. [8]

   b) Discuss about the MAC layer in Bluetooth. [8]

1of 1