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

IV B.Tech. I Semester Supplementary Examinations, February/March - 2011

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

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1. a) Explain the applications of mobile computing.
   b) Where and when can collisions occur while accessing the GSM system? Compare possible collisions caused by data transmission in standard GSM, HSCSD and GPRS.

2. a) What are the benefits of reservation schemas? How are collisions avoided during data transmission, why is the probability of collisions lower compared to classical Aloha?
   b) What is CDMA? Explain in detail.

3. a) What is the main purpose of registration of a mobile node? Explain in detail.
   b) Write short notes on IPv6.

4. a) Describe transaction oriented TCP.
   b) Explain Mobile TCP. How does a supervisory host send TCP packets to the mobile node and to a fixed TCP connection.

5. a) Explain about power aware computing.
   b) Explain the data recovery processing in detail.

6. a) Explain push based data delivery mechanisms in detail.
   b) Explain the following selective tuning and indexing techniques.
      i). Directory method
      ii). Flexible indexing method

7. a) How does dynamic source routing handle routing? What is the motivation behind dynamic source routing compared to other routing algorithms for fixed networks.
   b) Describe security problems in MANETs.

8. a) What are advantages and problems of forwarding mechanism in Bluetooth networks regarding security ,power Saving and network Stability?
   b) Explain about the wireless application Environment (WAE) logical model.

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

IV B.Tech. I Semester Supplementary Examinations, February/March - 2011

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
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1. a) Explain the architecture of mobile computing.
   b) Name the main elements of the GSM system architecture and describe their functions. What are the advantages of specifying not only the radio interface but also all internal interfaces of the GSM system?

2. a) Define the problem of Hidden and Exposed terminals. What happens in the case of such terminals if Aloha, Slotted Aloha, reservation Aloha or MACA is used?
   b) Explain TDMA and its features.

3. a) What are general problems of mobile IP regarding security and support of quantity of service?
   b) What is meant by Encapsulation? Explain various types of Encapsulation.

4. a) Write brief notes on congestion control in traditional TCP.
   b) Compare several enhancements to TCP for mobility.

5. a) Explain the concept of cache invalidation mechanisms.
   b) Explain the following concepts in mobile Environments
      i) Data cache maintenance
      ii) Web cache maintenance.

6. a) Explain the Hash based and Index based selective tuning and indexing techniques.
   b) Write about communication asymmetry with the help of a diagram.

7. a) Compare the reactive and proactive routing protocols.
   b) Explain the properties of MANETs.

8. a) Explain the functions of radio, baseband and link manager in Bluetooth
   b) Explain about the wireless transaction protocol of the transaction layer.

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

IV B.Tech. I Semester Supplementary Examinations, February/March - 2011

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
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1. a) Explain localization and calling in GSM.
   b) Give reasons for a handover in GSM and the problems associated with it.
   c) Write short notes on HSCSD.

2. a) List the basic features of CDMA systems. Explain soft handover.
   b) Explain how MACA can avoid hidden terminals and exposed terminals problems.

3. a) Write the steps required for a handover form one foreign agent to another foreign agent including layer2 and layer3
   b) How can DHCP be used for mobility and support of mobile IP?

4. a) Describe indirect TCP. Explain the modifications of indirect TCP as the selective repeat protocol and mobile–end transport protocol. What are the advantages and disadvantages of indirect TCP?
   b) Write short notes on congestion control in traditional TCP.

5. a) What are the advantages of hording data at the mobile device?
   b) Describe data caching architecture. Explain data cache maintenance in a mobile environment.

6. a) Explain pull based data delivery mechanisms.
   b) Explain the following selective tuning techniques.
      i) Broadcast addressing
      ii) Directory and Hash based methods

7. a) What are the security threats to a MANET? Why a MANET faces greater security threats than a fixed infrastructure networks?
   b) Explain Dynamic source routing in MANETs.

8. a) Explain the physical layer of Bluetooth.
   b) Name mechanisms to improve web access for handheld devices. What is their common problem and what led finally to the development of WAP?

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

IV B.Tech. I Semester Supplementary Examinations, February/March - 2011

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

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1. a) Explain the GPRS architecture reference model.
   b) Explain security services in GSM.

2. a) What are the disadvantages of reservation schemes?
   b) Explain polling and inhibit sense multiple access.

3. a) What is the basic purpose of DHCP? Name the entities of DHCP.
   b) Explain about agent advertisement and delivery.

4. a) How does selective transmission improve the transmission efficiency? What are the modifications required in the TCP receiver to implement the selective retransmission protocol.
   b) Explain snooping TCP. What are its advantages and disadvantages?

5. a) Explain the database transaction models and ACID rules.
   b) Explain three-tier client-server architecture.

6. a) Explain interleaved push-pull based data delivery mechanisms.
   b) Explain the distributed index based and flexible indexing selective tuning techniques in detail.

7. a) Describe the properties of MANETs.
   b) Explain destination sequence distance vector routing algorithm in MANETs.

8. a) Explain networking, security and link management in Bluetooth.
   b) Write about J2ME in briefly.