

CE1.5-R4: MOBILE COMPUTING

NOTE:

1. Answer question 1 and any FOUR from questions 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.

- a) Piconet is network of handheld devices in Bluetooth. How many maximum devices can participate in one Piconet? On what basis, they communicate with each other?
- b) What are the advantages of TCP snooping?
- c) How does ZigBee achieve device discovery in Personal Area Network.
- d) HiperLAN (High Performance Radio LAN) is a Wireless LAN standard. What are the features of HiperLAN-1?
- e) How does Clusterhead Gateway Switch Routing Protocol (CGSR) maintain Cluster Membership of Cluster Node?
- f) What are the security issues of Mobile Computing?
- g) What are the weaknesses of WEP in IEEE 802.11?

(7x4)

2.

- a) How is registration process carried out in Mobile IP?
- b) The protocols which we use in wireline network performs poorly with wireless links. Indirect TCP segments a TCP connection into a wireline part and a wireless part. What are the advantages and disadvantages of it?

(9+9)

3.

- a) Mobile IP is the extensions of convention IP, needed to support the mobility of hosts. What are the convention and entities used in Mobile IP?
- b) GSM is used for Voice Communication. When any mobile gets started, GSM system starts Registration process. Write step by step procedure of Cellular Phone Registration. Also mention what kinds of messages are exchanged among MS, HLR, VLR, MSC, BTS, and BSC.

(9+9)

4.

- a) What are the key design concepts of Temporally-ordered routing algorithm (TORA)? Elaborate three basic functions of TORA: Route creation, Route maintenance, Route erasure
- b) Explain the following terms with respect to IEEE 802.11 LAN standard:
 - Station
 - Access Point
 - Basic Service Set
 - Distribution System
 - Extended Service Set
 - Service Set Identifier
- c) DHCP server provides IP address to the client computers. How client does get the unique IP address if that network is having two DHCP servers?

(5+6+7)

5. Write a **short notes** on following:
- a) Physical and MAC layer of IEEE 802.11
 - b) ZigBee
 - c) Symbian OS

(6+6+6)

- 6.
- a) What is the mechanism used in Mobile TCP to reduce congestion in Adhoc environment?
 - b) A mobile database is a tuned database that can be connected by a mobile computing device over a mobile network. What must be the characteristics of mobile database?
 - c) GSM is used for mobile communication. Explain protocol stack of GSM network

(5+6+7)

- 7.
- a) GPRS stands for General Packet Radio System. What are the key features, goals and benefits of GPRS?
 - b) What are the disadvantages of Wireless LAN?
 - c) Location change is supported by Handover in GSM. What are the types of handover so it can support location change?

(6+6+6)