

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0156

Roll No.

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B. Tech.

(SEM. VIII) THEORY EXAMINATION 2010-11

MOBILE COMPUTING

Time : 3 Hours

Total Marks : 100

Note : Attempt all questions, each question carries equal marks.

1. Attempt any **four** parts of the following : (5×4=20)
- (a) Explain the word " mobile computing" and also give any suitable live example with merit of Mobile computing ?
 - (b) Draw a diagram showing the positioning of wireless networks vis a vis wired networks ? Why is a wired network usually part of the wireless infrastructure ?
 - (c) With neat sketch, explain architecture of 802.11 LAN. Also explain its MAC logic.
 - (d) How the power is controlled in a cellular system ? Explain the difference between open-loop and closed loop.
 - (e) Explain the architecture of Bluetooth system. What will be the impact on piconet if Bluetooth devices are connected to mobile units ? Explain.

(f) What are the unconventional ~~applications~~ of wireless networks ?

2. Attempt any **four** parts of the following : (5×4=20)

(a) Explain the issues and challenges of data management in third generation mobile standards ?

(b) Give an overview of GPRS network ? How does GPRS provides a variety of data rates ?

(c) Compare SDMA, TDMA, FDMA and CDMA in terms of transmission technique, signal separation, advantages, disadvantages and applications ?

(d) What are the basic differences between wireless WANs and wireless LANs ? And what are the common features ?

(e) What are the pros and cons of having different size cells for wireless networking ?

(f) List and define the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice-versa.

3. Attempt any **two** parts of the following : (10×2=20)

(a) Explain the concept of "Frequency Reuse" as applied to cellular communications ? What are the advantages of this approach ? How does it increase the capacity of the system ?

(b) Discuss the concept of index replication. What purpose it serves in mobile computing Environment ?

(c) Explain any two of the following :

(i) Energy efficient indexing on Air

(ii) Clustering Algorithm

(iii) Pointer forwarding strategies.

4. Attempt any two parts of the following : (10×2=20)

(a) Discuss the challenges in transaction processing. What are the counter measures to security threat in mobile computing environment ?

(b) What are the different fault tolerance issues involved in mobile agent computing ? What are monitoring process ?

(c) How data transmission is done from source to destination in secure manner ? Give any example of general authentication and privacy procedure for D-AMPS and also sketch the diagram suitable to it.

5. Attempt any two parts of the following : (10×2=20)

(a) Explain with example :

(i) Proactive routing and reactive routing protocols.

(ii) Static and dynamic routing

(iii) Source routing.

- (b) What do you understand by MANET ? Describe some real life scenarios where it can be used ?
- (c) Describe the TORA algorithm and explain route creation and route maintenance in detail with suitable example.