B. Tech.

(SEM. VIII) EXAMINATION, 2006-07

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 : 5x4=20
   (a) Explain the word “MOBILE COMPUTING” and also give any suitable live example with merit of mobile computing.
   (b) Describe the system Architecture and protocol Architecture of IEEE 802.11 with suitable diagram.
   (c) What is Bluetooth? Where it is used? Also describe the general format of packet and packet header in Bluetooth technology.
   (d) What are the main reasons for using cellular system? And also describe the dynamic channel allocation in cellular system.
   (e) What are the additional functions in wireless ATM with respect to fixed ATM. Explain in brief.

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(f) Describe the wireless Telephony system in brief. Also show the major applicative areas of wireless telephony.

2 Attempt any four parts of the following : 5x4=20

(a) How Data Management is done in MOBILE COMPUTING? Explain it by giving suitable example.

(b) Explain the three cell and seven cell clustering for mobile wireless network used in cellular system.

(c) What is the general goal of a file system? Explain the coda file system in brief.

(d) Why is strong consistency of file systems problematic in wireless and mobile environment? What are the alternatives?

(e) How data transfer is done better server and client in HTTP protocol? Explain in brief.

(f) Describe the basic use of Rover Tool Kit in wireless computing in brief.

3 Attempt any two of the following : 10x2=20

(a) Explain packet flow in mobile IP, if two mobile nodes communicate and both are in foreign Networks. What additional routes do packets take if reverse tunnelling is required?

(b) What are the basic requirements for Location Management in wireless ATM? Also explain the Registration and location updation and connection set up for a wireless Mobile Terminal in a foreign N/W.

(c) Explain any two of the following :
   (i) Pointer Forwarding Strategies.
   (ii) Energy Efficient Indexing on Air.
(iii) Energy Indexing for wireless broadcast data.

4 Attempt any two of the following: \(10 \times 2 = 20\)

(a) What is the basic purpose of Agent Advertisement in packet forwarding? Explain the message format of the Agent Advertisement packet with ICMP and mobility extension, with giving suitable diagram.

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

(c) Discuss in detail the security issues related in mobile agent based computing environment.

5 Attempt any two parts of the following: \(10 \times 2 = 20\)

(a) Name the main differences between Adhoc networks and other networks. What advantages do Adhoc Network offer? Explain in detail by giving suitable example.

(b) Explain the Destination Sequenced Distance Vector Routing with suitable example and also differentiate it with Adhoc-on-Demand. Distance Vector Routing in brief.

(c) Explain with examples.
   (i) Proactive routing and reactive routing protocols
   (ii) Source routing
   (iii) Static and dynamic routing.