



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

PAPER ID : **110857**

Roll No.

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B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15 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: (4×5=20)
- (1) Explain the word "Mobile Computing" and also give any suitable live example with merit of mobile computing.
 - (2) Draw a diagram showing the positioning of wireless networks via wired networks. Why is a wired network usually part of the wireless infrastructure?
 - (3) What is General packet Radio service (GPRS)? Describe its architecture.
 - (4) Describe the following multiple access protocol
(i) TDMA (ii) FDMA
 - (5) Discuss the concept of index Replication. What purpose it serves in mobile computing environment?
 - (6) Explain
The GSM location updating signalling sequence with suitable diagram.

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

- (1) Draw and define 802.11 protocol Stack regarding the following points
 - (i) Physical layer
 - (ii) MAC layer protocol
 - (iii) Frame structure
- (2) What is Bluetooth? What are the functions of different layers of Bluetooth protocol stack? Also discuss the concept of Bluetooth architecture.
- (3) Explain the architecture and protocol stack of wireless Application protocol (WAP).
- (4) Suppose that A,B, & C are simultaneously transmitting 0, 1 bits using CDMA system with following sequence
 $A=(-1,-1,-1,+1,+1,-1,+1,+1)$,
 $B=(-1,-1,+1,-1,+1,+1,+1,-1)$
 $C=(-1,+1,-1,+1,+1,-1,-1,-1)$
What is the resulting chip sequence?
- (5) Why does traditional TCP not perform well in wireless networks? Discuss different approaches for TCP improvement.
- (6) In Context to cellular network, discuss the following:
 - (i) Cell splitting
 - (ii) Near & Far problem
 - (iii) Hidden terminal problem

- 3 Attempt any Two parts of the following. (2×10=20)
- (1) Design the CODA file system and explain the different states. Draw the state Transition diagram and disconnected operation in CODA file system.
 - (2) Explain Adaptive clustering for Mobile Wireless networks
 - (3) Discuss the impact of mobile computing on following aspects of data management.
 - (i) Data dissemination
 - (ii) Query processing
 - (iii) Caching
 - (iv) Database overflow

- 4 Attempt any Two parts of the following. (2×10=20)
- (1) What is mobile agent? Describe the server architecture with the help of diagram. Also list the security threats to a mobile agent system.
 - (2) Describe fault tolerance issues involve in mobile computing? What are the monitoring processes?
 - (3) Discuss the challenges in transaction processing. What are the counter measures to security threat in computing environment

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

- (1) Explain the following terms
 - i. Global State Routing (GSR)
 - ii. Dynamic Source Routing(DSR)
 - iii. Destination Sequence Distance Vector routing (DSDV)
 - (2) What do you understand by Mobile Ad-hoc Networks (MANET)? Describe some real life scenarios where it can be used.
 - (3) Describe route discover and route maintenance mechanism of AODV and TORA.
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