ECS-087

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

PAPER ID : 110857

Roll No.

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

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

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Attemt 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

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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