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

PAPER ID : 0156    Roll No.

# B. Tech.

## (SEM. VIII) EXAMINATION, 2008-09

## MOBILE COMPUTING

*Time : 3 Hours]*                    *[Total Marks : 100*

*Note :*     (1)    Attempt **all** questions.

(2)    All questions carry **equal** marks.

1     Attempt any **four** parts :                    5×4=20

(a)    What is mobile computing? Discuss the issues that need to be addressed in mobile computing.

(b)    Explain the GSM location updating signalling sequence with suitable diagram.

(c)    Describe the following multiple access protocols :

(i)    TDMA

(ii)    FDMA

(iii)    CDMA

(d)    Distinguish between HSCSD and GPRS. How is GPRS made possible over GSM? Explain.

(e)    Explain the security implementation of GSM in context to :

(i)    Authentication

(ii)    Confidentiality.

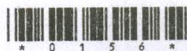(f) In context to cellular network, discuss the following :
  (i) Cluster
  (ii) Reuse distance
  (iii) Cell spliting
  (iv) Sectorization
  (v) Near far problem.

2 Attempt any **two** parts :                    10×2=20

  (a) What is Bluetooth? What are the functions of different layers of bluetooth protocol stack? Also discuss the concepts of bluetooth profiles.

  (b) Draw and define Bo2.11 protocol stack regarding the following points :
    (i) Physical layer
    (ii) MAC sublayer protocol
    (iii) Frame structure.

  (c) Why can't we apply traditional IP in mobile scenario? Explain the working of mobile IP. How do firewalls and Ingress filtering make the mobile IP implementation complicated.

3 Attempt any **two** parts :                    10×2=20

  (a) Explain the architecture and protocol stack of Wireless Application Protocol (WAP).

  (b) Discuss the impact of mobile computing on following aspects of data management :
    (i) Transaction processing
    (ii) Data dissemination.
    (iii) Query processing
    (iv) Caching.

(c)    What is CODA? Explain the disconnected operation in Coda File System.

4    Attempt any **two** parts :                10×2=20

(a)    What is mobile agent? Describe the agent server architecture with the help of diagram. Also list the security threats to a mobile agent system.

(b)    Discuss the schemes of mobile transaction management. List out the various issues concerned to transaction management.

(c)    Explain how the adaption of traditional TCP to congestion causes problems in wireless domain. Explain any two alternatives that have been proposed to alter the existing TCP to suit the wireless domain.

5    Attempt any **two** parts :                10×2=20

(a)    Explain different issues that need to be addressed while designing routing protocols for adhoc wireless networks. How does MACA try to solve the hidden node problems?

(b)    Distinguish between proactive, reactive and hybrid routing protocols of MANET. Explain GSR protocol.

(c)    Distinguish between DSR and AODV. Describe the path discovery and path maintenance mechanisms of AODV routing protocol.

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