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Printed Pages : 3   **MCA505(4)**

(Following Paper ID and Roll No. to be filled in your Answer Book)
PAPER ID : 1446   **Roll No.** [　][　][　][　][　][　][　][　][　][　]

M.C.A

(SEM V) ODD SEMESTER THEORY EXAMINATION 2009-10
MOBILE COMPUTING

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

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

*(2)   Each question carries **equal** marks.*

1   Attempt any **four** parts : $5 \times 4 = 20$

(a)   What is mobile computing? List various issues that need to be addressed in this area.

(b)   Compare the three generations of wireless telephone systems on basis of features, technology used and applications.

(c)   Discuss the roles of A_3, A_5 and A_8 algorithms in the security of GSM.

(d)   What are different wireless multiple access protocols? Discuss any two such protocols.

(e)   Sketch the protocol stack of Bluetooth standard and explain different service profiles of this standard.

(f)   How does CDMA make available the entire frequency spectrum to each station without FDM or TDM? - Explain.

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

   (a)   Discuss different data managemet issues of mobile computing in context to the following :

      (i)   Mobility

      (ii) Wireless communication

      (iii) Portability.

   (b)   Why is data replication required for mobile nodes? Explain different replication schemes for mobile environments.

   (c)   How is clustering done in wireless environment? Explain adaptive clustering for wireless networks.

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

   (a)   What are the major problems that arise in network and transport layers when a mobile node accrues the internet from a different network? Explain how the mobile provides a solution to the problem of address mobility in wireless internet.

   (b)   How does adaption of TCP to congestion cause problems in the wireless domain? Explain any three alternatives that have been proposed to alter the existing TCP protocol to suit the wireless domain.

   (c)   How does the HLR-VLR architecture address the issue of location management in cellular networks? Explain any one strategy that attempts to improve location management solution implemented by HLR-VLR architecture.

4 Attempt any **two** parts : 10×2=20

   (a) In context to transaction management, explain the following :

      (i) Data Dissemination

      (ii) Cache consistency

   (b) How does mobile transaction processing differ from traditional transaction processing? Explain different issues of mobile transaction processing.

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

5 Attempt any **two** parts : 10×2=20

   (a) What is adhoc network? Explain various problems that are encountered while routing the messages in wireless adhoc networks.

   (b) What do you understand by reactive, proactive and hybrid routing protocols? Explain the operation of dynamic source routing protocol.

   (c) Explain Adhoc On-demand Distance Vector (AODV) routing protocol. Also highlight the advantages and disadvantages of this protocol.

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