CE1.5-R4: MOBILE COMPUTING

NOTE:

1.	**Answer question 1 and any FOUR from questions 2 to 7.**
2.	**Parts of the same question should be answered together and in the same sequence.**

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

1.
a) What are the Design issues in Implementation of Mobile Database?
b) TCP snooping is a classical approach of mobility aware system. What are the advantages of TCP snooping?
c) Mobility management is one of the major functions of a GSM or a UMTS network. List down the problems associates with mobility management.
d) What are the fundamental differences between wired networks and ad-hoc wireless networks related to routing?
e) What are the advantages and disadvantages of Mobile TCP?
f) What is Mobile Device Management? What must be the features of Mobile Device Management tool?
g) How does the mobile node transfer data from source to destination in Clusterhead Gateway Switch Routing Protocol?

(7x4)

2.
a) By drawing suitable diagram, explain working of Dynamic Source Routing protocol.
b) HiperLAN (High Performance Radio LAN) is a Wireless LAN standard. What are the features of Hiper LAN/1 and Hiper LAN/2?

(10+8)

3.
a) TCP uses slow start mechanism to send packet after detecting congestion in network. What are the Implications on mobility of slow-start mechanism in TCP?
b) A mobile database is a database that can be connected by a mobile computing device over a mobile network. What are the requirements to have a mobile database? Name the tools supporting mobile database.

(9+9)

4.
a) What are the Applications of Mobile Computing?
b) What are the advantages of Wireless LAN?
c) With the increasing number of mobile workers, a secure mobile architecture specification is needed to allow businesses and individuals to maintain secure connections when mobile. What are the components of Secure Mobile Architecture?

(6+4+8)

5.
a) IEEE 802.11 specifies standard for wireless networking. Draw and explain protocol architecture of it.
b) Symbian OS is used in Mobile phones as Operating System. What are the characteristics of Symbian OS?
c) WEP is the privacy protocol specified in IEEE 802.11 to provide wireless LAN users protection against casual eavesdropping. What are the weaknesses of WEP?

(6+6+6)

6.
a)   What are the limitations of Mobile Devices?
b)   Multiple accesses with collision avoidance (MACA) present a simple scheme that solves the hidden terminal problem. Justify the statement.
c)   Write a program in J2ME which shows "Hello World" string when the application is started.

(5+6+7)

7.   Write short notes on following:
a)   Mobile File System
b)   GSM Architecture
c)   Security vulnerabilities of a general Mobile Computing System

(6+6+6)