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 advantages of Wireless LAN?
b)   Indirect TCP is widely used in Mobile TCP. What are the advantages of Indirect-TCP?
c)   In Mobile IP, data is transferred from mobile node to correspondent node is known as reverse tunneling. What are the problems associated with reverse tunneling.
d)   What is mechanism of transaction oriented TCP?
e)   What is WAP push? How is push different from pull?
f)   Snooping TCP is one of the ways to transmit data over Mobile Network. What are the disadvantages of Snooping TCP?
g)   What are the features of Hyper LAN1?

(7x4)

2.
a)   Normally Computer is used for computing and mobile is used for communication. But now days, mobile computing is emerging field of computing. In this regard what are the limitations of mobile devices as compared to computer?
b)   Write down Blue tooth Protocol Stack & give brief of each layer.

(9+9)

3.
a)   A Piconet is a collection of Bluetooth devices which are synchronized to the same hopping sequence. How is the Piconet formed? How does Bluetooth device communicate with each other in Piconet?
b)   Destination sequence distance vector (DSDV) routing is an enhancement to distance vector routing for ad-hoc networks. How does it work for Mobile Node?
c)   Mobile IP communication protocol is designed to allow wireless device users to move from one network to another while maintaining a permanent IP address. How does it provide location independent routing of IP datagram?

(6+6+6)

4.
a)   The IEEE standard 802.11 specifies the most famous family of Wireless LANs for wireless networking. Draw architecture of it and explain components of wireless LAN.
b)   Mobile computing applications are resource constrained. What are the networks and security related design issues to develop Mobile Computing applications?

(9+9)

5.
a)   CSMA/CD is not possible in wireless environment which resolve problem of contention easily. Which protocol is used to resolve contention? Write mechanism of it.
b)   Secure mobile architecture specification is needed to allow businesses and individuals to maintain secure connections when moving or mobile. What are the components of Security Mobile Architecture?
c)   Routing of Traditional IP is not suited to Mobile IP? Why is Traditional IP routing not applicable to Mobile IP?

(6+6+6)

6.

a) How does dynamic source routing handle routing? What is the motivation behind dynamic source routing compared to other routing algorithms from fixed networks?

b) Encapsulation is the mechanism of taking a packet consisting of packet header and data and putting it into the data part of a new packet. What is frame format of IP-in-IP request frame format and explain fields of it.

(9+9)

7.

a) What are the applications of mobile computing?

b) A mobile database is a database that can be connected by a mobile computing device over a mobile network. Which are the tools supporting mobile database.

c) With the help of Mobile IP, users can move from one location to any other location without disconnecting network.   What are the entities of Mobile IP?

(6+6+6)