Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/B.Tech (ECE)/SEM-8/EC-804C/2013

2013
MOBILE COMPUTING

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

GROUP – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* the following : $10 \times 1 = 10$

i) In which of the following handoff method the BSs or APs monitor the signal quality from the mobile and report the measurements to the MSC ?

a) Mobile Controlled Handoff (MCHO)

b) Network Controlled Handoff (NCHO)

c) Mobile Assisted Handoff (MAHO)

d) Both (b) and (c).

ii) The speed of the HIPERLAN/2 is

a) 11 Mbps b) 20 Mbps

c) 35 Mbps d) 54 Mbps.

iii) IN CSMA/CA medium access method the waiting time between RTS and CTS is known as

a) DIFS b) SIFS

c) Back off time d) ACK time.

iv) The profile synchronization in Bluetooth is achieved by

a) OBEX b) TCS BIN

c) AT Commands d) PPP.

v) The wireless standard which is a set of protocols that allows portable devices to communicate with the Internet

a) TDMA b) CDMA

c) WAP d) VXML.

vi) When a primary device asks a secondary device if it has data to send, then it is called

a) Polling b) Selecting

c) Reserving d) Backing off.

vii) TEQUILA performs dynamic administration control, as well as

a) policy management

b) attack management

c) dynamic route and resources management

d) none of these.

viii) AQUILA (Adaptive Resource Control for QoS using an IP based layered architecture) performs global management of the resources via the

a) resource control agent (RCA)

b) IAM

c) ICC

d) none of these.

ix) No. of bits in MIPv4 address is

a) 64 b) 32

c) 128 d) 256.

x) IEEE802·11b standards are used for

a) WLAN b) LAN

c) WAN d) WiMax.

xi) DSDV stands for

a) Destination Serial Distance Vector

b) Destination Sequence Distance Vector

c) Distance Serial Destination Vector

d) Distance Sequence Destination Vector.

xii) A random backoff time is used following a busy medium condition for

a) CSMA/CA b) CSMA/CD

c) Polling d) Reverse tunnelling.

xiii) The station which is not mobile in ESS is

a) BSS b) Server

c) AP d) MT.

xiv) The length of the RTS packet is

a) 10 bytes b) 20 bytes

c) 30 bytes d) 40 bytes.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What is Handover ? Discuss with diagram Intra-MSC handover procedure in GSM network. 2 + 3

3. What are the limitations of fixed IPv4 ? How is the movement of a mobile node from one network to another identified in MIPv4 ? 2 + 3

4. Why is route optimization required in MIPv6 ? How is route optimization performed in MIPv6. 2 + 3

5. What is MANET ? What are the main challenges in ad-hoc networking ? Give some applications of ad-hoc networking.

2 + 2 + 1

6. What are the modes of operation in HiperLAN2 ? Explain each of them with neat diagram. 1 + 4

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. With a neat diagram explain the authentication procedure of GSM. Draw and explain the protocol architecture for signalling in GSM. What do you mean by PDP context for GPRS network ? What are the two new nodes are used in GPRS for packet data service. Explain each of them.

4 + 4 + 3 + 4

8. Explain the different type of transmission technologies which are used in WLAN. What are the challenges of WLAN over LAN ? How does mobile Station (MS) select their Access Points (APs) in WLAN environment ? Explain the physical and logical architecture of WLAN. Explain with neat diagram how data are transferred in-between two stations using DCF with RTS and CTS. 3 + 2 + 2 + 5 + 3

9. What are the main three phases of MIPv4 ? Explain with neat diagram how Mobile Node registers its current location with Foreign Agent and Home Agent in MIPv4. What is Denial of-Service Attack in MIPv4 and how it can be solved ? What is tunneling in MIPv4 ? 2 + 6 + 4 + 3

10. What is Bluetooth ? Why the name is Bluetooth ? Briefly describe the Bluetooth protocol stack with a suitable diagram. Explain the basic operational states of Bluetooth. What are the power control modes of connected state in Bluetooth ? 2 + 1 + 6 + 4 + 2

11. What are the characteristics of an ideal routing protocol in ad hoc networking ? How does dynamic source routing (DSR) handle routing ? Explain the route discovery and route maintenance process in AODV protocol. 2 + 5 + 8