Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/B.TECH (CSE)/SEM-8/CS-802A/2012

2012
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 the following :

$10 \times 1 = 10$

i)   Mobile Networks are essentially

a)   wired only   b)   ad-hoc only

c)   wireless   d)   infrastructured only.

ii)   Mobile devices register temporarily with

a)   AUC   b)   HLR

c)   VLR   d)   none of these.

iii)   ARP stands for

a)   Address Resolution Protocol

b)   Address Routing Protocol

c)   A synchronous Routing Protocol

d)   Asynchronous Resolution Protocol.

iv) MANET is

    a) infrastructured only

    b) infrastructured less

    c) wireless

    d) both (b) and (c)

v) Piconet is

    a) master-slave   b) client-server

    c) both (a) and (b)   d) none of these.

vi) Barker code is used for

    a) ISDN   b) IEEE 802.11

    c) both (a) and (b)   d) none of these.

vii) Gateway GPRS support node (GGSN) is a unit between

    a) GPRS network and packet data networks

    b) GPS enabled device network and GPRS network

    c) both (a) and (b)

    d) none of these.

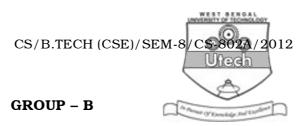viii) Authentication and encryption in Bluetooth are provided by

    a) SDP   b) L2CAP

    c) LMP   d) none of these.

ix) The default subnet mask of the IPV4 address 193.67.8.9 is

    a) 255.255.0.0   b) 255.255.255.0

    c) 255.0.0.0   d) none of these.

x) WML is a

    a) Tagged language

    b) Machine language

    c) Assembly level language

    d) none of these.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What do you understand by roaming ? What are the purposes of Association Request and Association Response ?

3. What are the five standardized groups of 3G radio access technologies ?

4. What are Frequency hopping spread spectrum and Direct sequence spread spectrum techniques ?

5. Explain the steps of communication using Mobile IP.

6. Draw a neat diagram of Bluetooth protocol stack and show the core protocols.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) Describe in detail the Link Manager Protocol (LMP).

   b) What are the two different types of physical links offered in Bluetooth ?

   c) What do you understand by Profiles ?

   d) What are the fields of a Bluetooth packet in Baseband layer ? 6 + 2 + 4 + 3

8. a) How does Wireless Transport Layer Security (WTLS) establish a secure session and transfer datagram ?

   b) What features are offered by Wireless Transaction Protocol (WTP) to higher layers ? How are they achieved ?

   c) What are the features of wireless markup language (WML) ? 6 + 5 + 4

9. a) With reference to the GPRS architecture reference model and GPRS transmission plane protocol reference model (neat diagrams to be provided for both models), describe the working of GPRS.

   b) Mention applications of any two that may use GPRS.

   13 + 2

10. a) How does localization take place in GSM ?

    b) What are the reasons behind handover ? What are the possible handover scenarios in GSM ?

    c) What security services are offered by GSM ? Mention the related security algorithms. 6 + 4 + 5

11. Write notes on any one of the following : 1 × 15

    a) Server-side programming in Java

    b) Wireless Local Loop Technologies and Architecture

    c) Medium Access Control Layer (with respect to IEEE 802.11)

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