Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS/B.TECH(IT)/SEP.SUPPLE/SEM-8/IT-802D/2012

2012
MOBILE COMMUNICATION

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* of the following :

                                                            10 × 1 = 10

   i)   Mobile IP refers to

      a)   mobility   b)   IP tunneling

      c)   IP within IP   d)   all of these.

   ii) GSM phones work on which technology ?

      a)   TDMA

      b)   FDMA

      c)   Both TDMA & FDMA combined

      d)   None of these.

   iii) The bandwidth requirement for Bluetooth is

      a)   5 GHz   b)   2·4 GHz

      c)   2·714 GHz   d)   none of these.

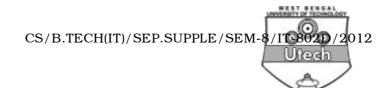   iv) The interface between BSC and MSC is called

      a)   A interface   b)   Abis interface

      c)   Radio Air interface   d)   None of these.

SS-424   [Turn over

v) WML script

    a) is used in wireless application protocol

    b) is like Java script

    c) is used in normal internet browser

    d) both (a) and (b).

vi) A single frame in GSM frame consists of

    a) 4 time slots   b) 8 time slots

    c) 7 time slots   d) 10 time slots.

vii) IEEE 802. 11B has data transfer rate up to

    a) 54 mbps   b) 11 mbps

    c) 400 mbps   d) None of these.

viii) At mobility the data rate of 4G is

    a) 200 mbps   b) 300 mbps

    c) 1 gbps   d) 100 mbps.

ix) MANET stands for

    a) mobile access network

    b) multiple area network

    c) mobile adhoc network

    d) multiple access network.

x) In GPRS data transfer rate is up to

    a) 170 kbps   b) 70 kbps

    c) 179 kbps   d) 53 kbps.

xi) Modulation scheme used in DSSS based physical layer of IEEE 802.11 is

    a) DBPSK   b) GFSK

    c) DQPSK   d) both (a) and (c).

xii) Basic Service Set (BSS) in IEEE 802.11 is controlled by a Base Station called

    a)   CDMA   b)   Access point

    c)   Internal access   d)   None of these.

xiii) The functions of the Station Management layer are

    a)   bridging

    b)   interaction with DS

    c)   both (a) and (b)

    d)   none of these.

GROUP – B

(Short Answer Type Questions)

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

2. What are the difficulties in using CSMA/CD in wireless LAN ? What are the alternative methods used for it ?   5

3. What is hand off ? Differentiate between hard handoff and soft handoff.   5

4. State and explain the WAP architecture design principles.   5

5. Discuss the advantages and disadvantages of radio wave and IR transmission technology.   5

6. What are tunneling and encapsulation ?   5

GROUP – C

(Long Answer Type Questions)

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

7. What is handover ? Why is it used ? Show the steps required for a hadndover from one foreign agent to another foreign agent. What are the problems in message routing in ad-hoc wireless network ? Distinguish between proactive and reactive routing protocols.   3 + 2 + 5 + 5

8. Compare the different types of transmission errors that can occur in wireless and wired networks. How and why does I-TCP isolate problems on the Wireless Link ? What are main drawbacks of this solution ?   5 + 5 + 5

9. Describe the protocol stack of WAP. What are the functions of WAP 1.1 gateway ? How does WAP provide connectivity to a web server ?   5 + 5 + 5

10. a) Explain the concept of frequency re-use in cellular system.

    b) What do you mean by co-channel interference and system capacity ?

    c) Define three mechanism to improve the cell capacity and coverage area in cellular system.

11. Write short notes on any *three* of the following :   3 × 5

    a) UMTS

    b) GPRS

    c) FHSS

    d) DSDV

    e) Snooping.