Name : ....

Roll No. : ....

Invigilator's Signature : ....

CS / M.TECH (CSE) / SEM-2 / CST-1202-C3 / 2011

2011

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.
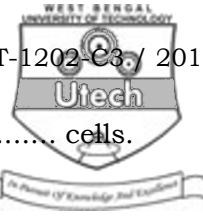
GROUP – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

$10 \times 1 = 10$

i)   Wireless network is a network of devices-computing and networking that are connected physically without wires.

   a)   Yes   b)   No

   c)   Yes / No   d)   None of these.

ii) .... communication involves radio frequency communication, microwave communication and infrared short-range communication.

   a)   Mobile   b)   Satellite

   c)   Wireless   d)   All of these.

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iii) Which is not the dimension of Mobile Computing ?

a) Location awareness

b) Quality of service

c) Mass Storage capability

d) None of these.

iv) A software layer between a user application and operating system can be termed as

a) gateway   b) migration of bits

c) migration of address   d) middleware.

v) Which is the correct frequency range for radio waves ?

a) Between 1 kHz and 2 GHz

b) Between 3 kHz and 1 GHz

c) Between 1 kHz and 3 GHz

d) Between 1 kHz and 300 GHz.

vi) A .... accepts a serial data stream and converts it into an analog format that matches the transmission medium.

a) modulator   b) demodulator

c) multiplexer   d) modem.

vii) An umbrella cell covers several .... cells.

    a) selective   b) micro

    c) macro   d) all of these.

viii) The current generation of GSM base stations cannot communicate over distances greater than

    a) 55 km   b) 45 km

    c) 35 km   d) 65 km.

ix) Which is not the merit of radio frequency ?

    a) Line of sight is not required

    b) Not block by common materials

    c) Longer range

    d) Light sensitive.

x) BSS stands for

    a) Base Station Service   b) Base Station Set

    c) Base Service Station   d) Bas Service Set.

xi) .... transmits at 5 GHz and send data up to 54 Mbps using orthogonal frequency division multiplexing.

    a) 802·11 b Standard   b) 802·11 g Standard

    c) 802·11 a Standard   d) 802·11 i Standard.

xii) WEPP stands for

    a)   Wired Equivalent Privacy Principle

    b)   Wired Equivalent Private Protocol

    c)   Wireless Equivalent Public Protocol

    d)   Wireless Equivalent Privacy Protocol.

xiii) Access point, Wi-Fi cards and Safeguards are the basic elements of

    a)   Ad-hoc Network   b)   Paging Network

    c)   Wi-Fi Network   d)   all of these.

xiv) Which of the following is not mobile processor ?

    a)   ARM   b)   MIPS
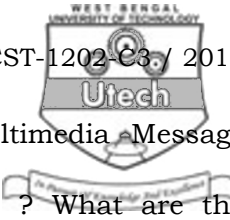
    c)   X86 and Centrino   d)   none of these.

GROUP – B
(Short Answer Type Questions)

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

2.   What is SMS ? What are the types of GSM-SMS ? Draw SMS architecture and explain.   1 + 1 + 3

3.   What is mobility ? Explain with diagram SMS protocol hierarchy.   1 + 4

4. What are the main components of Multimedia Message Service ? What are the benefits of SMS ? What are the characteristics of pervasive computing ?   2 + 1 + 2

5. Explain with diagram, Wireless Application Protocol.

6. Define communication mode of mobile computing. Explain with diagram different types of mode of communication used in Mobile Computing Technology.   1 + 4

7. What are the basic components of Mobile IP ? What are the types of Mobility Agents ? Explain with diagram the mobility agents.   1 + 1 + 3

8. Explain the difference between Mobile IPV4 and Mobile IPV6.

GROUP – C

(Long Answer Type Questions)

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

9. a)   Define GSM and Bluetooth.

   b)   Draw the GSM Architecture network and explain its various parts in brief.

   c)   What are the protocols used in Bluetooth Architecture ?

                2 + 10 + 3

10. a) What is Cell ? What is Ad-hoc network ? What is Mobile Computing ?

    b) Draw the architecture of General Packet Radio Service (GPRS) and explain.

    c) What is Smart Phone ? 4 + 10 + 1

11. a) Define 'Hand off' with neat diagram.

    b) What is Clusters ? Explain with diagram N-tier Architecture.

    c) Draw and explain Cellular System Components.

    3 + 7 + 5

12. a) What are the difference between Wireless Computing and Mobile Computing ? Explain with diagram and truth table.

    b) Explain with diagram the Mobile Computing Architecture.

    c) Draw WAP architecture and explain. 4 + 6 + 5

13. a) Explain with diagram the architecture of WWW.

b) Explain pervasive computing technologies.

c) Write a note on Universal Mobile Telecommunication System. 6 + 4 + 5

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

a) Mobile Communication Generations : 1G to 3G

b) Universal Mobile Telecommunication System Architecture

c) Basic Mobile Telephone Service Network

d) GSM Network Components.

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