



Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH(CSE)/SEPARATE SUPPLE /SEM-8/CS-802A/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.*

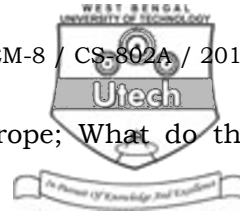
GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$
 - i) allows for the sending of brief text message on certain cell phone.
 - a) Bluetooth
 - b) Wireless Application Protocol
 - c) Short message service
 - d) Wi-Fi.
 - ii) This wireless technology will provide faster display of multimedia
 - a) 4G
 - b) 2G
 - c) 2.5G
 - d) 3G.



- iii) GPRS technology is a
 - a) service used in 3G mobile
 - b) general packed radio service used in personal computer
 - c) mobile internet service used in 3G mobile
 - d) all of these.
- iv) This transmission media is used for short distance wireless communication between computers
 - a) Microwave
 - b) Radio
 - c) Bluetooth
 - d) Satellite.
- v) The 3G standard does not yet support multimedia such as video clips.
 - a) true
 - b) false.
- vi) Bluetooth is a technology that allows for the transmission of data using a
 - a) Uplink frequency
 - b) Downlink frequency
 - c) Radio frequency
 - d) none of these.
- vii) Which of the following is not an interaction paradigm ?
 - a) Personal computing
 - b) Mobile computing
 - c) Web navigation
 - d) Embodied virtuality.
- viii) What does mobility mean in Data Communications ?
 - a) The user can move around with his/her computer while transmitting/receiving data
 - b) A connection to the cellular network can be made in any cell, but once the connection is established, the user must stay within that cell
 - c) A connection to the cellular network can only be made in the 'home' cell of the user
 - d) All of these.



- ix) GSM is the digital standard for Europe; What do the letters GSM currently mean ?
- Global Special Mobile
 - Greater System's Mobile
 - Global Systems for Mobile Communications
 - None of these.
- x) Why is a digital network preferred over an analogue one ?
- It is newer
 - It is smaller
 - It has lower power consumption
 - It has higher capacity for the same bandwidth.

GROUP – B

(Short Answer Type Questions)

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

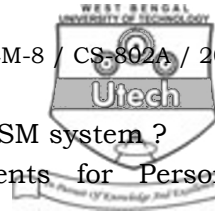
- What is WAP gateway ? Write down its functionalities. $3 + 2$
- Write down the differences between Iridium and Globalstar orbiting.
- What are the different Bluetooth protocols ? Explain one of them. $2 + 3$
- Briefly describe the 3G mobile services.
- Describe system architecture and protocol architecture of IEEE 802.11 with suitable diagram.

GROUP – C

(Long Answer Type Questions)

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

- What are the major differences between WAP 2.0 WAP 1.x ? 4
 - Explain with proper diagram the WAP 1.x architecture. 5
 - Briefly describe the Basic transaction, WTP class 1 with user acknowledgement; WSP/B Session termination; WSP/B confirmed push. 6



8. a) What are the services provided in a GSM system ? 4
- b) What are the end-user requirements for Personal Communication Systems ? 2
- c) Explain the GSM Architecture. 7
- d) What are uplink and downlink frequency for GSM 1900 ? 2
9. a) What is the difference between care-of-address and co-located care-of address ? 3
- b) Explain IP-in-IP encapsulation. 3
- c) How does a reverse tunnel differ from a forward tunnel in the mobile IP protocol ? 4
- d) How does reverse tunnel help when the time-to-live for the packets at a foreign agent is small ? 5
10. a) How much of the original GSM network does GPRS need ? Which elements of network perform the data transfer ? 3 + 3
- b) Using the best delay class in GPRS and a data rate of 115.2 k bit/s – how many bytes are in transit before a first acknowledgement from the receiver could reach the sender (neglect further delays in the fixed network and receiver system) ? 4
- c) What is handoff ? What is the difference between the hard handoff and soft handoff ? 2 + 3
11. a) What do you mean by satellite network ? 3
- b) Briefly explain different types of satellites. 6
- c) Discuss the GLOBESTAR satellite system. 6
12. Write short notes on any *three* of the following : 3 × 5
 - a) Wireless Local Loop or WLL
 - b) Wideband CDMA or W-CDMA
 - c) Bluetooth
 - d) Pervasive web application
 - e) GPRS.

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