



Name :

Roll No. :

Invigilator's Signature :

CS/B.TECH(ECE)/SEP.SUPPLE/SEM-8/EC-804C/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) GSM services use
 - a) FDMA for multiple users
 - b) FDMA for multiple channels and TDMA for multiple users of a channel
 - c) TDMA for multiple channels
 - d) none of these.
- ii) Middleware is used
 - a) for service discovery, application adaptability, retrieving backend database
 - b) only application adaptability and retrieving backend databases
 - c) for connecting to a mobile service
 - d) none of these.



- iii) CDMA systems exhibit soft handover due to
- a) autocorrelation codes used in each cell transceiver
 - b) negligible narrow band and co-channel interference of signals
 - c) each cell using same spread spectrum frequency
 - d) each cell having a pseudo noise code offset, so hand over to adjacent cell is simply by adding offset to the mobile terminal pseudo noise code.
- iv) FDMA is suitable for
- a) analog signal
 - b) digital signal
 - c) both (a) and (b)
 - d) none of these.
- v) In GSM network the interface between BTS and BSC is known as
- a) A bis
 - b) E
 - c) A
 - d) none of these.
- vi) In IEEE 802.11 PHY frame the length of 'synchronization' field is
- a) 128 bits
 - b) 16 bits
 - c) 32 bits
 - d) 64 bits.
- vii) Windows CE is a
- a) 16 bit OS
 - b) 32 bit OS
 - c) 64 bit OS
 - d) none of these.
- viii) Uplink frequency range for GSM is
- a) 890-915 MHz
 - b) 870-920 MHz
 - c) 880-915 MHz
 - d) none of these.

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

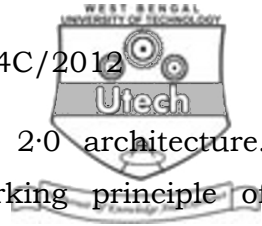
2. Discuss in brief (a) Pervasive Computing, (b) Ubiquitous Computing. 2 + 3
3. Discuss in brief with diagram mobile computing architecture in an automobile system.
4. Discuss in brief the limitations of Mobile computing.
5. What is spread spectrum ? Discuss in brief FHSS and DSS. 2 + 3
6. Explain using proper block diagram the process of authentication in GSM service.
7. What are 'snooping of TCP' and 'TCP Reno' ? 2 + 3

GROUP – C

(Long Answer Type Questions)

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

8. Discuss the layered protocol architecture of Bluetooth. State the frame format of Bluetooth. What is NAV ? 7 + 5 + 3



9. What is WAP ? Discuss in brief WAP 2.0 architecture. Compare Wi-Fi with WiMax. State working principle of WiMax. $2 + 5 + 4 + 4$
10. What is MANET ? What are the differences between a cellular network and a MANET ? What are Hidden and Exposed Terminal problems in Wireless LAN ? What is Polling ? $3 + 4 + 6 + 2$
11. Why wireless LANs cannot use CSMA/CD ? Discuss in brief operation of MIPv6. State in brief the architecture and working principle of GPRS network. $3 + 6 + 6$
12. Compare among SDMA, FDMA and TDMA. What are the demerits of multipath propagation ? Illustrate GSM frame format. What do you mean by Generic Routing Encapsulation ? $4 + 3 + 5 + 3$
13. What is Wearable Computing ? Discuss in brief different issues of it. Distinguish between GSM and CDMA. In cellular network why Uplink frequency is less than Downlink frequency ? $2 + 5 + 5 + 3$
14. Write short notes on any *three* the following : $3 \times 5 = 15$
- a) W-CDMA
 - b) Advantages of Wireless LAN
 - c) Palm OS
 - d) Hyperlan v.2
 - e) DHCP.

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