MOBILE COMPUTING (SEMESTER - 8)

CS/B.TECH(ECE-NEW)/SEM-8/EC-804C/09

1. .....
Signature of Invigilator

2. .....
Signature of the Officer-in-Charge

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

CS/B.TECH(ECE-NEW)/SEM-8/EC-804C/09

ENGINEERING & MANAGEMENT EXAMINATIONS, APRIL – 2009

MOBILE COMPUTING (SEMESTER - 8)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

	Group – A										Group – B			Group – C			***Total Marks***	***Examiner's Signature***
Question Number																		
Marks Obtained																		

.....
Head-Examiner/Co-Ordinator/Scrutineer

8878-C/E (27/04)

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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct answer for any *ten* of the following : 10 × 1 = 10

i) A mobile node is assigned to a particular network known as its

a) home address b) home network

c) care of address d) foreign network. ☐

ii) Which of the following is not a part of TCP/IP protocol architecture ?

a) Transport b) Physical

c) Internet d) Application. ☐

iii) In IEEE 802.11 standard the DSSS operating in 2.4 GHz ISM band has data rate of

a) 10 Mbps b) 1 Mbps

c) 100 Mbps d) 1000 Mbps. ☐

iv) The path followed by a datagram, while it is encapsulated, is known as

a) Tunnel b) Link

c) Node d) IP Layer. ☐

v) Which of the following Bluetooth layer is responsible for the process of searching for other devices to establish a connection with them ?

a) L2CAP b) HCI

c) LMP d) Broadband and radio layer. ☐

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vi) Which of the following transmission is specified by IEEE802.11 standard ?

a) FHSS b) DSSS

c) CDMA d) Both (a) and (b). ☐

vii) In WTP, class 2 transaction provides

a) request service and supports the execution of multiple transactions

b) a reliable datagram service

c) an unreliable datagram service

d) both (b) and (c). ☐

viii) The modulation technique used in direct beam infrared WLAN is

a) FSK b) QPSK

c) ASK d) FS/QPSK. ☐

ix) Any device that contain an IEEE 802.11 conformant MAC and physical layer is called

a) BSS b) AP

c) DS d) Station. ☐

x) Which of the following is not a MAC control frame subtype ?

a) PS-Poll b) RTS

c) Data + CF-Poll d) CTS. ☐

xi) The Bluetooth regularity frequency range is

a) 2.4 to 2.48 GHz b) 2.7 to 2.88 GHz

c) 2.9 to 3.99 GHz d) None of these. ☐

xii) The number of seconds before the registration is considered expired is called

a) Registration b) Lifetime

c) Identification d) Authentication. ☐

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GROUP – B

(Short Answer Type Questions)

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

2. a) What is multip-path propagation ?

   b) Compute the absolute mean-path loss at $d_0 = 3$ m and at $d = 22$ m for a mobile radio system operated in the 2.4 to 2.48 GHz authorized band (FCC). Assume the path loss exponent is $n = 3.5$.

   Assume the first two metres are LOS, afterwards NLOS propagation. 1 + 4

3. a) Draw and explain the waveform of MSK scheme used in Wireless System.

   b) State the advantage of MSK over BFSK. 4 + 1

4. a) What is normadic access ?

   b) Differentiate normadic aceess from ad-hoc networking. 2 + 3

5. What are the requirements of mobile IP ? Mention the different entities in a mobile IP. Define traingular routing. $1\frac{1}{2} + 1\frac{1}{2} + 2$

6. Why are special protocols for the support of micro mobility on the network layer needed ? 5

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions. $3 \times 15 = 45$

7. a) What is Mobile IP ? 2

   b) Explain the operation of mobile IP with a diagram. 5

   c) What is tunneling ? Explain tunneling operation in a mobile network. 2 + 6

8. a) What are *discovery* and *registration* in mobile network ? 4

   b) Give the format of registration request and registration reply message. 3

   c) What is encapsulation for mobile IP ? What are the various types of encapsulation ? Explain any one encapsulation method. 2 + 2 + 4

9. a) Explain packet flow in mobile IP, if two mobile nodes communicate and both are in foreign Networks. What additional routes do packets take if reverse tunneling is required ? 6 + 2

   b) What is ICMP ? 2

   c) Compare the Palm OS and window CE based devices. 5

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10. What is location managment in cellular communication ? What are the various methods of location management ? What are static and dynamic location update ? Explain various dynamic location update schemes. Compare location update and paging. 2 + 2 + 3 + 6 + 2

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

a) WIMAX

b) DSDV

c) Mobile IP agent advertisement measage

d) WAP infrastructure

e) WTLS.

END

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