CS/B.TECH(ECE) (SUPPLE)/SEM-8/EC-804C/09
MOBILE COMPUTING (SEMESTER - 8)

1. .....
Signature of Invigilator

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

Reg. No.

Roll No. of the Candidate

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

ENGINEERING & MANAGEMENT EXAMINATIONS, JULY – 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				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

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

S-53040 (30/07)

DO NOT WRITE ON THIS PAGE

CS/B.TECH(ECE) (SUPPLE)/SEM-8/EC-804C/09
MOBILE COMPUTING
SEMESTER - 8

Time : 3 Hours] [Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

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

i) In the *p*-persistent approach, when a station finds an idle time, it

a) waits 1 sec before sending

b) sends with probability 1–*p*

c) sends with probability *p*

d) sends immediately. ☐

ii) When a primary device asks a secondary device if it has data to send, then it is called

a) Polling b) Selecting

c) Reserving d) Backing off. ☐

iii) If a CDMA network has eight stations, the no. of frequency band(s) in the medium bandwidth is

a) 1 b) 2

c) 8 d) 16. ☐

iv) A wireless LAN using FHSS hops 10 times per cycle. If the bandwidth of the original signal is 10 MHz and 2 GHz is the lowest frequency, the highest frequency (in GHz) of the specturm is

a) 1 b) 2

c) 2.1 d) 3. ☐

v) The station which is not mobile in an ESS is

a) AP b) Server

c) BSS d) MT. ☐

vi) Which one of the following frames usually precedes an RTS frame ?

a) DIFS b) CIFS

c) CTS d) ATS. ☐

vii) The basic medium access method for WLANs as defined by IEEE 802.11 is based on

a) CSMA b) CSMA/CD

c) CSMA/CA d) token passing. ☐

viii) A router reads an address on a packet to determine the next hop. Which address is read by a router ?

a) IP b) MAC

c) Source d) ARP. ☐

ix) In Ipv4, what is the value of the total length field in bytes if the header is 28 bytes and the data field is 400 bytes ?

a) 428 b) 407

c) 107 d) 427. ☐

x) The IP header size

a) is 20 to 60 bytes long b) is 20 bytes long

c) is 60 bytes long d) depends on the MTU. ☐

xi) Which is a legal port address ?

a) 0 b) 513

c) 65.535 d) all of these. ☐

xii) IP is responsible for ..... communication while TCP is responsible for ..... communication.

a) Host–to–Host; Process–to–process

b) Process–to–process; Host–to–host

c) Process–to–process; Node–to–node

d) Node–to–node; Process–to–process.

GROUP – B

(Short Answer Type Questions)

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

2. Compare CSMA/CD and CSMA/CA. What is 'near and far' problem ? 3 + 2

3. What is Wireless LAN ? Compare various WLAN technologies. 1 + 4

4. Define the following IEEE 802.11 terminologies : 2 + 2 + 1

   a) Basic service set (BSS).

   b) MAC service data unit (MSDU).

   c) Access point (AP).

5. What is point coordination function (PCF) ? How does it differ from distribution coordination function (DCF) ? What is IFS ? 2 + 2 + 1

6. What is Wireless Application Environment (WAE) ? Explain its operation. 1 + 4

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions. 3 × 15 = 45

7. a) What is Mobile IP ? 2

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

   c) What is tunnelling ? Explain tunnelling 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) What is WAP ? 2

   b) Draw WAP programming model. 3

   c) Explain the functions of WSP and WTP. 2 + 2

   d) What are the various WTP transaction classes ? Explain with diagram. 6

10. a) What is nomadic access ? 2

    b) What are the differences between nomadic access and ad hoc networking ? 3

c) Write down the various requirements of WLAN. 4

d) Explain various WLAN technologies. 6

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

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

a) Pocket PC and smart phone

b) Windows mobile

c) Mobile IP agent advertisement message

d) WAP infrastructure

e) WTLS.

END