Total No. of Questions : 12]

SEAT No. :

**P2797**

[Total No. of Pages : 3

# [5154]-179
# B.E.(Computer)
# MOBILE COMPUTING
## (2008 Pattern) (Semester - I) (Elective-II ) (410445)

*Time : 3 Hours]* *[Max. Marks : 100*

***Instructions to the candidates:***

1) ***Answer 3 questions from Section I and 3 questions from Section II.***
2) ***Answers to the two Sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data, if necessary.***

## SECTION-I

***Q1)*** a) Explain the primary objectives of Future Public Land Mobile Telecommunication Systems (FPLMTS). **[8]**

b) Enlist and explain the applications of mobile computing. **[8]**

OR

***Q2)*** a) Explain the cell layout and frequency planning in GSM.(Provide the appropriate diagrams) **[8]**

b) Explain the functions of Home Location Register and Visitor Location Register. **[8]**

***Q3)*** a) With the help of a diagram, explain frame, multiframe, superframe and Hyperframe for a GSM network. **[8]**

b) Explain the structure of a TDMA slot with a frame for **[8]**

i) Normal Burst

ii) Synchronization Burst.

OR

***P.T.O.***

**Q4)** a) Explain the structure of a TDMA slot with a frame for **[8]**

i) Access Burst

ii) Dummy Burst.

b) Explain the time organization of Full and Half Rate Traffic Channels. **[8]**

***Q5)*** a) Explain following two proceducers, in detail, used in formation of a call: **[10]**

i) Connection Request.

ii) Paging procedure

b) With the help of a signaling diagram, explain the call-clearing process for a Mobile-Terminated call. **[8]**

OR

***Q6)*** a) With the help of a signaling diagram, explain IMSI Attach procedure. **[8]**

b) With the help of a signaling diagram, explain the procedure for PSTN originating-MS terminating (PSTN-MS call) call establishment. **[10]**

## SECTION-II

***Q7)*** a) Explain the four basic security services provided by GSM. **[8]**

b) With the help of a signaling diagram, explain TMSI assignment process as a result of location update. **[10]**

OR

***Q8)*** a) With the help of a block diagram, briefly explain the procedure for generation of $K_C$, SRES, and RAND at Authentication center. **[10]**

b) Explain the characteristics of SIM. Also enlist the storage capabilities of SIM. **[8]**

***Q9)*** a) Provide a simple layout of a typical FDMA/TDMA system. **[8]**

b) Compare TDMA, FDMA and CDMA. **[8]**

OR

***Q10)***a) What is a mobile station? Explain functions of a mobile station. **[8]**

b) Provide the codings used for **[8]**

i) IMSI

ii) MSISDN

***Q11)***a) Explain format type A and format type B of $LAPD_m$. **[8]**

b) Write short notes on : **[8]**

i) MM Specific Procedure.

ii) MM Common Procedure.

OR

***Q12)***a) Provide the simple structure of DTAP protocol and BSSMAP protocol. **[8]**

b) Briefly explain following interfaces in GSM **[8]**

i) $V_m$ interface

ii) A-bis interface

iii) A-interface