Total No. of Questions : 12]

SEAT No. :

P1456

[4759] - 213

[Total No. of Pages :3

B.E. (Computer Engineering)
MOBILE COMPUTING
(2008 Course) (Semester - I) (Elective -II) (410445)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:
  1) *Answers to the two sections should be written in separate books.*
  2) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 from Section - I & Q7 or Q8, Q9 or Q10, Q11 or Q12 from Section - II.*
  3) *Neat diagrams must be drawn whenever necessary.*
  4) *Assume suitable data, if necessary.*

SECTION - I

Q1) a) State reasons behind the design of GSM system. **[8]**

  b) Define the following terms: **[10]**

    i)   Teleservices,

    ii) Bearer services

    iii) Supplementary services

OR

Q2) a) State main objectives of future PLMTS. **[8]**

  b) Explain in detail GSM network structure. **[10]**

Q3) a) State reasons for choosing two different multiframe timings for speech and signaling channels. **[8]**

  b) List the messages (information) transmitted over BCCH, FCCH, and SCH. Justify why hopping cannot be used for these channels. **[8]**

OR

P.T.O.

Q4) a) State reasons for using a dummy burst over the air. **[8]**

b) Explain frequency hopping in detail. What is slow frequency hopping (SFH) and fast frequency hopping(FFH)? **[8]**

Q5) a) What are various factors for which the location update reject message may be sent from MSC to mobile? Elaborate on each of those reasons.**[8]**

b) Explain the concept of "Off-Air Call Setup." What are the advantages of this scheme? **[8]**

OR

Q6) a) Define functions performed within the following procedures: **[8]**

i) Identification

ii) Encryption and ciphering

iii) Call clearing

iv) IMSI attach and detach

v) Location update

b) Why is initialization necessary for mobile after the power is turned on?**[8]**

SECTION - II

Q7) a) Explain four different tyeps of security services provided by GSM. **[8]**

b) Describe the following terms: **[8]**

i) Challenge

ii) Response

iii) Anonymity

iv) Authentication

v) Encryption

vi) TMSI

vii) IMSI

viii) LAI

OR

Q8) a) Why do you think that PLMN needs increased protection against eavesdropping compared to a regular telephone system? State the main objectives of the operator and the subscribers in this area. **[8]**

b) Why is it absolutely essential for the operator to have authentication of the visiting subscriber? **[8]**

Q9) a) Narrate all reasons of handoff. Define the term "Directed handoff". **[8]**

b) Compare spectrum efficiency of CDMA with TDMA. **[8]**

OR

Q10) a) Name the three classes of handover. What are the two modes of handover? **[8]**

b) Explain both the spread spectrum technologies. **[8]**

Q11) a) What is the difference between acknowledged and unacknowledged modes of operation in LAPD messages? **[8]**

b) Enumerate the basic functions of MM,CC and RR layers. Illustrate with some examples. **[10]**

OR

Q12) a) What is the main purpose of TMSI reallocation? **[8]**

b) Show the complete message coding for: call confirmed, call proceeding, location updating request, channel release, immediate assignment, and partial release. **[10]**

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