



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Tech(IT-SE)/SEM-3/MSE-303D/2011-12**

**2011**

**MOBILE COMMUNICATION**

*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.*

Answer any *five* questions.

5 × 14 = 70

1. Describe GSM services and with a suitable diagram, describe different architectural components. 6 + 8
2. In GSM architecture, describe the role of SIM, taking into account the network authentication mechanism and also the security mechanism. 2 + 4 + 8
3. a) Describe the role of the following : 4
  - i) PIN
  - ii) PUK
  - iii) HLR
  - iv) VLR.



- b) Describe the three types of services in GSM.  $2 \times 3$
- c) What are IMSI, MSISDN, IMEI and TMST ?  $4 \times 1$
4. a) What are the advantages of WLAN ? 5
- b) What are its disadvantages ? 5
- c) What are the artefacts of designing a Wireless LAN ? 4
5. a) Describe IEEE 802-11g protocol stack. 10
- b) How does it differ from JrDA in respect of advantages and disadvantages ? 4
6. a) Describe IEEE 802.15 stack. 10
- b) What are different services that a standard Bluetooth stack offers ? 4
7. a) Describe SDP, SPP, DUN.  $3 \times 4$
- b) What is an AP ? 2
8. a) Describe the security mechanism of Bluetooth ( IEEE 802.15 ). 12
- b) What is JSR-82 ? 2



9. a) Why do we go for hexagonal cells in mobile communication ? 4
- b) Deduce the empirical formula of co-channels. 4
- c) What is mobile TCP ? 6

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