(3 hours) [Total Marks: 80]

NB:

1) Question No.1 is **compulsory.**
2) Attempt any **three** questions out of the remaining questions.
3) Make suitable assumptions wherever necessary.

1. a) Compare WCDMA and CDMA 2000. (5)
   b) What is the relationship between the Base Station and Mobile Switching Centre? Discuss the role of EIR entity of GSM network. (5)
   c) Why do Hidden and Exposed terminal problems arise?How would you propose to solve it? (5)
   d) Define footprint w.r.t satellite systems. Draw and explain how communication within the footprint happens? (5)

2. a) Explain power management in IEEE 802.11 infrastructure networks and ad-hoc networks. (10)
   b) Looking at the HLR/VLR database used in GSM how does this architecture limit the scalability in terms of users, especially moving users? Explain the control channels of GSM. (10)

3. a) How the agent can be discovered using Mobile IP? Give the overlay of agent advertisement packet which includes mobility extension.Also, discuss how tunneling works for Mobile IP using IP-in-IP encapsulation. (10)
   b) Draw and explain the architecture of TETRA and specify the standards and services offered by TETRA. (10)

4. a) Explain the various security issues involved in mobile computing. (10)
   b) Compare and contrast HIPERLAN2 and IEEE 802.11. (10)

5. a) Describe Bluetooth architecture and protocol stack. Also, discuss its limitations. (10)
   b) Explain the data rate enhancement with the help of GPRS network model. What is the maximum data rate obtained by GPRS network? (10)

6. Write short notes on the following :
   a) Dalvik Virtual Machine (DVM). (5)
   b) M-TCP. (5)
   c) Wireless Local Loop (WLL). (5)
   d) QoS in 3G. (5)

****