

Time:3Hrs

marks:80

**Instructions:**

1. Question No 1 is Compulsory, Attempt any Three from Q no 2 to Q No. 6
2. Describe your answers with neat sketches and examples wherever necessary
3. Assume Suitable Data if required and mention the same in your Answer.

**Q1 a) What are various Mobile Communication and Application Environments for the Following: 10**

- i) Business
- ii) Location Based Services.
- iii) Banking Services
- iv) Vehicles

**b) Explain Various Types of antennas along with their Radiation Pattern. 10**

**Q2 a) What is Spread Spectrum? What are the various advantages for the same? 5**

- b) What are Various Advantages and Disadvantages of Small Cells in Cellular system 5
- c) Explain DSSS and FHSS in detail. 10

**Q3 a) What do you mean by hidden & Exposed station Problem? How they can be avoided. 10**

**b) Explain GSM System Architecture in Detail 10**

**Q4 a) Why it is necessary to have Handover Mechanism in GSM? Explain possible handover scenarios in short. 10**

**b) List various Security services offered by GSM. Explain A3 A5 and A8 Algorithm in brief. 10**

**Q5 a) Explain Packet Delivery Mechanism “To and From Mobile Node” with the help of Mobile IP Network Diagram. 10**

**b) Explain Tunnelling and Encapsulation in brief. What are the various types of Encapsulation techniques. 10**

**Q6. Write a Short Note on the Following. (ANY FOUR). 20**

- a) Bluetooth
- b) HIPERLAN
- c) IPV6
- d) CDMA
- e) Snooping TCP

\*\*\*\*\*