



- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Assume suitable data wherever necessary.
  4. Illustrate your answer necessary with the help of neat sketches.

**SECTION – A**

1. a) Derive an expression for channel capacity for flat fading channel. 7  
b) Explain what is: i) Reflection ii) Diffraction in mobile communication. 7

**OR**

2. a) A mobile user travels at a uniform speed of 60 km/hr. compute the time between fades if the mobile uses: 7  
i) A cellphone operating at 900 MHz.  
ii) A PCS phone operating at 1900 MHz  
b) Discuss wide band fading model in brief. 7
3. a) Explain the various traffic and control channels used in GSM. 7  
b) Discuss in brief the GSM radio specifications. 6

**OR**

4. a) Discuss the TDMA frame structure of the GSM. Hence explain the frame hierarchy. 8  
b) Briefly explain the reverse CDMA channel modulation process for IS-95 system. 5
5. a) What is the need of network security in mobile networks? Explain any one network security technique in detail. 10  
b) Discuss the applications of wireless sensor networks. 3

**OR**

6. a) Discuss the various design issues sensor network in detail. 7  
b) Explain in brief the fixed wireless sensor networks. 6

**SECTION – B**

7. a) Explain the architecture and characteristics of DECT. 8

- b) Explain the IEEE 802.15 standards for Bluetooth. 6

**OR**

8. a) Explain the IEEE 802.11 standard for wireless LAN in brief. 8  
b) Discuss the radio specifications of PCS in detail. 6
9. a) Discuss in detail the security issues related to the Wi-Fi environment in wireless communication. 8  
b) Explain in brief the WAP. 5

**OR**

10. a) Explain in brief the Bluetooth packet header fields. 7  
b) Enlist the applications of i) Wi-Fi ii) Wi-Max 6
11. a) Explain the functional architecture of UPT in brief. 6  
b) What is TETRA system? Describe TETRA network architecture in brief. 7

**OR**

12. a) Explain in detail the Universal Mobile Telecommunication System (UMTS). 6  
b) What is private mobile networks? Explain in brief the various requirements of PMR services 7

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