

CE2-R3: WIRELESS AND MOBILE NETWORKS

NOTE:

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours

Total Marks: 100

1.
 - a) Explain Handover mechanism in satellite systems.
 - b) Briefly explain the operation of mobile IP.
 - c) Compare the efficiency of ALOHA and slotted ALOHA.
 - d) What are the advantages and disadvantages of SIP and H.232?
 - e) Draw block diagram of frequency hopping system for one channel modulation.
 - f) How is GPRS an enhancement on GSM?
 - g) Explain Ultra Wideband (UWB) with bandwidth specification.

(7x4)

2.
 - a) What are the goals and features of Universal Mobile Telecommunication System (UMTS)? Discuss UMTS architecture.
 - b) Discuss Quadrature Phase Shift Keying (QPSK) modulation scheme in detail. Why is it preferable to use Offset Quadrature Phase Shift Keying (OQPSK) instead of QPSK?

(10+8)

3.
 - a) Discuss briefly the cellular standards of 1G, 2G and 3G systems.
 - b) Explain GSM protocol model and mobility management.

(9+9)

4.
 - a) Determine capacity of cellular CDMA. How does it depend on the processing gain?
 - b) What is fading? Explain types of fading based on multi path time delay spread and doppler spread.

(9+9)

5.
 - a) What is channel allocation? Explain Dynamic channel allocation.
 - b) Discuss security issues in WLAN's.
 - c) How is Wireless-ATM suitable for multimedia applications?

(8+5+5)

6.
 - a) Explain Bluetooth Architecture and protocol stack. List the application of Bluetooth.
 - b) Explain the operation of IEEE 802.11 WLAN protocol.

(10+8)

7.
 - a) Why is CSMA/CD not suitable in WLAN's? Explain with examples.
 - b) Explain the concept of cell splitting and cell sectoring.
 - c) Explain network management in Local Multipoint Distribution Service (LMDS).

(6+6+6)

