53 (EC 713) WRSY

2021

WIRELESS SYSTEM

Paper : EC 713

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. (a) What is IEEE 802.11 family of standards ? Write down its various implementations mentioning their special features.   10

   (b) Find out expressions for efficiency and no. of channels for FDMA system.   10

2. (a) Explain a CDMA system. What are its specific advantages over TDMA and FDMA systems ?   5+5=10

(b) Explain the bluetooth packet format.
                                          10

3. *(a)* Elaborate the advantageous characteristics of Direct Sequence Spread Spectrum (DSSS) systems.   10

   (b) Explain OFDM system with the help of a block diagram.   10

4. *(a)* How is spectral efficiency achieved in OFDM using pulse-shaping technique ?
                                          10

   (b) Consider an AMPS uplink (mobile to base station). The total available bandwidth is 12.5 *MHz*, per channel bandwidth is 30 *kHz*, and the guard band is 10 *kHz*, of which 21 are used for control. Find the no. of user channels.   5

   (c) What are the various wireless data services ?   5

5. *(a)* What is a WiMAX system ? Mention its special features. What are its advantages over Wi-Fi systems ?   10

   (b) Write the channel characteristics of CDPD, ARDIS and RMD systems.   10

6. (a) Explain with block diagram, frequency-hopping spread spectrum technique.
10

(b) Elaborate various packet radio access techniques.
10

7. (a) What is an IS-95 standard? Write a short note on forward CDMA channel in IS-95 standard.
10

(b) Explain *any two* third-generation cellular standards in detail.
10