Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE) (Sem.–6)

WIRELESS COMMUNICATION SYSTEM

Subject Code : BTEC-602

M.Code : 71122

Date of Examintion : 29-05-2023

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Answer briefly :

a. Define rms delay spread and excess delay spread of a multipath fading channel.

b. Differentiate between frequency selective fast and slow fading.

c. What is frequency reuse in cellular communication system?

d. Define cell splitting and sectoring.

e. Define co-channel interference and co-channel reuse ratio.

f. Define TDMA and FDMA.

g. Define Equal Gain Combining.

h. Define forward and reverse CDMA channel.

i. Define handoff and its types.

j. What is the difference between Pure and Slotted ALLOHA?

SECTION-B

2. Explain the performance criteria and operation of cellular system. Draw the block diagram of basic cellular system.

3. Derive the desired Carries to Interference (C/I) Ratio from a normal case in an Omini Directional Antenna System.

4. How diversity technique improves the performance of receiver in multipath scenario? Explain maximal ratio combining in detail.

5. What are the advantages of spread spectrum multiple access over FDMA and TDMA? Explain direct sequence spread spectrum in detail.

6. Explain IS-54 and IS-136 US digital cellular system along with their key parameters.

SECTION-C

7. With the help of proper block diagram, explain the frame structure, architecture and speech processing of GSM system. Why are so many logical channels used in the GSM?

8. Explain the impulse response model of multi path channel. Using time dispersion and frequency dispersion parameter, classify and explain different types of fading in detail.

9. **Write a short note on :**

   a. Paging system

   b. Bluetooth

   c. CDMA 2000 standards and specification

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.