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 Examination: 20-05-2025

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS 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. **Write briefly :**

a) Define a basic cellular system.

b) What is frequency reuse in cellular systems?

c) List any two examples of wireless communication systems.

d) What is co-channel interference?

e) Define the concept of cell splitting.

f) Write any two characteristics of a fading channel.

g) What is selective diversity combining?

h) State the difference between FDMA and TDMA.

i) Mention any two services offered by GSM.

j) What is LTE-Advanced technology?

SECTION - B

2. Explain the operation of a basic cellular system.
3. Derive the formula for calculating co-channel interference ratio (C/I) for omni-directional antennas.
4. Compare Bluetooth and ZigBee wireless systems.
5. Explain the frame structure of GSM in detail.
6. Differentiate between Pure ALOHA and Slotted ALOHA with simple throughput calculations.

SECTION - C

7. Explain the concept of digital communication over a slow fading channel and discuss the impact on system performance.
8. Describe the GSM architecture, channel types and speech processing.
9. Compare IS-95 CDMA .system and 3G UMTS system with respect to channel specifications and technologies.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.