

B.TECH
(SEM VIII) THEORY EXAMINATION 2022-23
WIRELESS & MOBILE COMMUNICATION

Time: 3 Hours**Total Marks: 70****Note:** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.**2 x 7 = 14**

- (a) What are the main advantages of wireless technologies?
- (b) Differentiate hard and soft handoff.
- (c) Define diversity?
- (d) Differentiate hard and soft handoff?
- (e) What is ALOHA?
- (f) What is universal mobile terrestrial telecommunication system (UMTS) technology?
- (g) What is Wi-Fi?

SECTION B

2. Attempt any three of the following:**7x 3 = 21**

- (a) What do you understand by coverage and capacity in cellular systems? Name the techniques used to increase the capacity of a cellular system and compare them.
- (b) What is frequency reuse concept? And describe the hand off strategies in wireless communication.
- (c) What is linear predictive coders (LPC) vocoder? Explain it in brief with block diagram.
- (d) What are the different type of small-scale fading and describe fading effects due to Doppler spread.
- (e) Write a short note on interference in cellular system. Explain the types of interference in cellular system.

SECTION C

3. Attempt any one part of the following:**7 x 1 = 7**

- (a) Explain the term Long Term Evolution in wireless communication.
- (b) Explain the structure of RAKE receiver with the help of neat diagram. What is m branch RAKE receiver?

4. Attempt any one part of the following:**7 x 1 = 7**

- (a) Explain the term Evolution of mobile radio communication fundamentals and describe the operation of cellular system
- (b) Explain the term GSM in detail in mobile radio communication using system architecture.

5. **Attempt any *one* part of the following:** **7 x 1 = 7**
- (a) How does CDMA technology works? Give detailed features of GSM and CDMA mobile standards.
 - (b) Explain the different type of diversity technique used in wireless communication system.
6. **Attempt any *one* part of the following:** **7 x 1 = 7**
- (a) Discuss a complete model of Next Generation Network (NGN) systems for mobile communication. How it is useful for network security?
 - (b) What do you understand by Mobile Data Network? Describe challenges and issues in Mobile AD-HOC Networks (MANETs) in wireless communication.
7. **Attempt any *one* part of the following:** **7 x 1 = 7**
- (a) What do you understand by channel assignment? What are the types discuss in detail.
 - (b) Write short note on
 - (i) Wireless sensor network,
 - (ii) The IMT-2000 global standards
 - (iii) 5-G Technology