



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

B TECH
(SEM-VII) THEORY EXAMINATION 2021-22
WIRELESS & MOBILE COMMUNICATION

Time: 3 Hours**Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- Explain the tradeoffs between the system capacity and co-channel interference.
 - Write the name of channel assignment strategies in mobile radio propagation.
 - Define the term Multiple Access.
 - Write down the types of space diversity techniques.
 - Illustrate various persistent methods in CSMA.
 - Define the term Equalization.
 - Discuss the uplink and downlink frequency band of GSM.
 - Define specifications of LEO, MEO and GEO.
 - Discuss the advantages of NGN networks.
 - Compare Wi-Fi and WiMax.

SECTION B

- 2. Attempt any three of the following: 10 x 3 = 30**
- Illustrate the MAHO technique and Queuing concept in hand off. Also explain the different types of handoff in mobile communication.
 - Explain pn sequence generation process with the help of 3 bit linear feedback Shift register.
 - Compare the throughput efficiencies and vulnerable time of pure ALOHA and Slotted ALOHA with the help of proper formulation.
 - Explain the network architecture of UMTS. Also give brief view of IMT2000.
 - Explain Wi-Fi and WiMax Standards.

SECTION C

- 3. Attempt any one part of the following: 10 x 1 = 10**
- If a signal to interference ration of 15dB is required for satisfactory forward channel performance of a cellular system, Calculate the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is (a) $n=4$, (b) $n=3$? Assume that there are 6 co-channel cells in first tier, and all of them are at the same distance from the mobile. Use suitable approximations.
 - Explain Frequency Reuse concept with the help of proper cellular diagram. Also draw a cellular system with 19-cell reuse and locate the co-channel cells for this system.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- Classify and explain different types of vocoders. Also give properties of speech signal.
 - Illustrate the different types of Frequency Hopped Multiple Access with the help of proper hop timing diagram.
- 5. Attempt any one part of the following: 10 x 1 = 10**
- Illustrate various Equalization techniques with the help of proper block diagram.
 - Explain FDMA and TDMA in detail with suitable diagram.
- 6. Attempt any one part of the following: 10 x 1 = 10**
- Explain GSM with the help of proper network architecture block diagram. Also give brief view of various Interface standards in GSM.
 - Explain Long term evolution (LTE) architecture in detail with diagram. Also give brief view of mobile satellite communication.
- 7. Attempt any one part of the following: 10 x 1 = 10**
- Write Short Note on (i) Mobile Adhoc Network (MANET) (ii) Bluetooth
 - Write Short Note on (i) Light Fidelity (ii) Introduction to 4g and 5g