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BTECH
(SEM VIII) THEORY EXAMINATION 2021-22
WIRELESS & MOBILE COMMUNICATION

Time: 3 Hours**Total Marks: 70****Note: 1.** 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 is meant by frequency reuse?
b.	Differentiate hard and soft handoff.
c.	What are the factors influencing small scale fading?
d.	Why we are using Equalization in wireless communication?
e.	Define zero inter symbol interference communication techniques.
f.	Give the introduction of multiple access techniques.
g.	What is the goal of LTE?

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

a.	Explain the different types of channel assignment strategies.
b.	Explain the Rayleigh and Rician distribution fading model.
c.	Explain the different type of vocoders in wireless communication.
d.	Define the term CSMA. Explain CSMA/CD and CSMA/CA.
e.	Draw and explain GSM frame structure. Also explain the interfaces used in GSM system.

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

(a)	Explain the term evolution of mobile radio communication fundamentals.
(b)	Calculate the total available channel for a cellular system having a total bandwidth of 60MHz which uses two 50 KHz simplex channel to provide full duplex voice and control channel. Assume that the system uses 9 cell reuse pattern and 1 MHz for the total bandwidth is allocated for control channels. Also calculate the number of control channels and voice channels per cell.

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

(a)	Explain and derive stochastic and flat fading.
(b)	Explain briefly Ocumura model and Hata model

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

(a)	Describe adaptive equalization. What are the factors that determine the performance of the algorithms used for adaptive equalization?
(b)	Describe direct sequence spread spectrum (DSSS) and frequency hopping spread spectrum (FHSS) system.

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

(a)	Draw and explain the Rake Receiver in detail using proper block diagram.
(b)	Explain SC-FDMA, IDMA schemes and hybrid method of multiple access schemes.

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

(a)	What are the main characteristics of IMT-2000 standard? Explain the 4G system and its applications.
(b)	What do you understand by mobile Ad-Hoc network(MANETs)? Why and how a proper route is required to discover in Ad-Hoc network?