Printed Pages: 02 **Sub Code:KEC076**

Paper Id: 231764 **Roll No.**

B.TECH.
(SEM VII) THEORY EXAMINATION 2022-23
WIRELESS AND MOBILE COMMUNICATION

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2x10 = 20

(a) Draw general model of wireless communication system.
(b) Illustrate the condition for zero ISI.
(c) Discuss Selection Diversity.
(d) Write pdf for Rician fading channel.
(e) Write down the efficiency of Slotted ALOHA and Pure ALOHA.
(f) Discuss Pooling.
(g) Illustrate LTE.
(h) Discuss GPRS.
(i) Explain Wireless Ad-hoc Network.
(j) Discuss Li-Fi communication.

SECTION B

2. Attempt any *three* of the following: 10x3 = 30

(a) Illustrate Nakagami Fading Channel. Write and draw its pdf and explain all the parameters.
(b) Explain Direct Sequence Spread Spectrum with the help of block diagram of transmitter and receiver.
(c) Discuss Transversal Filters and its working using its block diagram. How is its response generated?
(d) Illustrate Mobile satellite communication in detail. Also explain main segments of Mobile Satellite communication.
(e) Discuss Bluetooth in detail which includes its architecture, specifications, and applications.

SECTION C

3. Attempt any *one* part of the following: 10x1 = 10

(a) Explain different strategies used to increase the capacity of a wireless communication systems.
(b) Describe different Hand-off strategies based on various parameters/implementation techniques. Discuss Ping-Pong.

4. Attempt any *one* part of the following: 10 x1 = 10

(a) Explain different Diversity combining techniques. What are the advantages of Diversity Techniques?
(b) Describe different types of Vocoders and their working with the help of neat and cleanblock diagram.

5. Attempt any *one* part of the following: 10x1 = 10

(a) Why is Equalization required? Discuss Decision Feedback Equalizers in detail.

(b) Explain RAKE receiver. Describe its working with explanation of each stage. What is the main advantage of a RAKE receiver?

6. Attempt any *one* part of the following: 10x1 = 10

(a) Describe IMT 2000 in detail with complete specifications and features.

(b) Discuss Wireless Local Loop. How it operates?

7. Attempt any *one* part of the following: 10x1 = 10

(a) Illustrate Wi-Max standard. What are main challenges present in of Wi-Max.

(b) Write short notes on Next Generation networks and its services. What are the fundamental characteristics for defining NGN