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B.Tech. (ECE) 7th Semester, Professional Elective-III
(G-Scheme) Examination, December-2022
WIRELESS COMMUNICATION
Paper-ECE-409-G

Time allowed : 3 hours]

[Maximum marks : 75

Note: Question no. 1 is compulsory. The students have to attempt five questions in total, first being compulsory and selecting one from each unit.

1. (a) Explain in detail Throughput and Propagation delay. 2.5
- (b) What do you mean by Nyquist Rate? 2.5
- (c) Write a short note on IEEE 802.11n 2.5
- (d) Explain in detail Hybrid FDMA/CDMA (FCDMA) 2.5
- (e) Write a short note on 3GPP1
- (f) What do you mean by Frequency diversity? 2.5

Unit-I

2. (a) Explain in detail Licensed and Unlicensed Bands with the bands used in IG for uplink and downlink frequencies. 7.5
- (b) Explain in detail Multipath Channel Characteristics and effects of fading. 7.5

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3. (a) Explain various examples of wireless communication systems. 7.5
- (b) Give a brief note on history and AMPS cellular system. 7.5

Unit-II

4. (a) Explain in detail Synchronous vs. Statistical Multiplexing. 7.5
- (b) What do you mean by Packet Radio Protocol? Explain in detail the difference between pure ALOHA and slotted ALOHA. 7.5
5. (a) Write a short note on Wireless Personal Area networks (PANS). 7.5
- (b) Give a brief note on Zigbee IEEE 802.15.4 and explain various version of it. 7.5

Unit-III

6. (a) Write any 8 features of CDMA and explain the near far effects in CDMA. 7.5
- (b) What do you mean by UMTS. Explain the evolution of WCDMA and various types of CDMA 200. 7.5

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7. (a) Explain the concept of MIMO system and how it is different from MISO and SIMO systems. 7.5
- (b) Explain in detail TDMA and the method of finding the number of channels in TDMA system. 7.5

Unit-IV

8. (a) Write short notes on Maximal Ratio Combining and Equal Gain Combining. 7.5
- (b) Explain in detail selection diversity and scanning diversity. 7.5
9. Write short note on:
 - (a) Rake Receiver 1.5
 - (b) Spatial Multiplexing

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