

B.Tech. (ECE), 7th Semester (G-Scheme)

Examination, November-2023

MOBILE COMMUNICATION & NETWORKS

Paper -PCC-ECE-410-G

Time allowed : 3 hours]

[Maximum marks : 75

Note : *Attempt five questions in total. All questions carry equal marks. Question no. 1 is compulsory. Attempt one question from each unit.*

1. (a) Discuss in details the frequency re-use factor.
- (b) Explain the term RMS delay spread.
- (c) Enumerate salient features of TDMA.
- (d) List out advantages of 5G over 4G.
- (e) Explain effects due to Doppler shift.
- (f) How MIMO is used in LTE?

6×2.5=15

Unit-I

2. (a) Why the geometry of the cell is chosen to be hexagonal? Discuss frequency reuses ration. 7.5
- (b) Discuss in details the concept of Handoff. Also discuss in details soft handoff. 7.5

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3. (a) Derive the equation and discuss in details cellular system capacity. How it effects Grade of Service? 7.5
- (b) Discuss in detail 5G wireless standards and its salient features. 7.5

Unit-II

4. (a) Discuss the Okumara and Hata model for radio propagation. 7.5
- (b) Write briefly about multipath small scale fading. Also bring out its effects on wireless channel. 7.5
5. (a) Discuss various type of propagation mechanism for wireless communication system. 7.5
- (b) Discuss in detail losses due to partition between floors. 7.5

Unit-III

6. (a) What do you understand by diversity? Explain in detail the polarization and time diversity. 15
7. Write briefly about: $2 \times 7.5 = 15$
- (a) QPSK modulation technique.
- (b) Cellular CDMA access technique.

Unit-IV

8. (a) Explain the architecture of 5G mobile communication system. Also bring out its advantages. 7.5
- (b) Discuss in detail application of MIMO in LTE. 7.5
9. Write briefly about the following: $2 \times 7.5 = 15$
- (a) EDGE
- (b) WCDMA