

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV-B.TECH-I-Semester End Examinations (Regular) - November- 2024
WIRELESS COMMUNICATIONS AND NETWORKS
(ECE)

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A**(20 Marks)**

1. a) Define channel assessment strategies. [2M]
- b) What is the use of cell splitting? [2M]
- c) Define effective isotropic radiated power (EIRP). [2M]
- d) Define Brewster angle. [2M]
- e) What are the techniques classified for the small-scale multipath measurements? [2M]
- f) What are the parameters of mobile multipath channels? [2M]
- g) Define diversity. [2M]
- h) What are the classifications of space diversity reception method? [2M]
- i) List the disadvantages of WLAN. [2M]
- j) Write a short note on Doppler spread. [2M]

PART-B**(50 Marks)**

2. Illustrate the handoff processes at cell boundary with a neat diagram. [10M]
- OR**
- 3.a) Explain the differences between Co-channel interference and Adjacent channel interference. [5M]
 - b) Explain the methods to reduce the Co-channel interference from multiple cells. [5M]
4. What are the Three Basic-propagation mechanisms in Mobile communication systems? Explain in detail. [10M]
- OR**
- 5.a) Write about the radio wave propagation and derive the equation for Two-ray model with neat diagrams. [5M]
 - b) Write about the partition losses considering indoor propagation models. [5M]
6. Derive the Impulse response of a Multipath channel. [10M]
- OR**
7. What is the difference between Frequency selective fading and Flat fading? Explain in detail. [10M]
8. Explain about
 - a) Least Mean Square (LMS) Algorithm. [5M]
 - b) Recursive Least Square Algorithm. [5M]
- OR**
9. Derive the expression for Maximal Ratio Combining Improvement. [10M]
10. State and explain about IEEE 802.11 a standard? List the properties of IEEE 802.11 a. [10M]
- OR**
11. Write short notes on: [10M]
 - i) Wireless PANS.
 - ii) Hiper LAN.
