

Code No.: EC731PE

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H.T.No.

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS

IV–B.TECH–I–Semester End Examinations (Supply) - December- 2025

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) List the parameters that influence the hand-off. [2M]
- b) What is frequency reuse ratio? [2M]
- c) Define indoor propagation models. [2M]
- d) List merits and demerits of Okumara's model? [2M]
- e) Write the effects of fading. [2M]
- f) Write the condition for flat fading. [2M]
- g) What are the nonlinear equalization methods used? [2M]
- h) What is tracking mode in an adaptive equalizer? [2M]
- i) Explain the Problems with Wireless Networks. [2M]
- j) Give two types of data burst in HIPERLAN. [2M]

PART-B

(50 Marks)

2. Explain about co-channel interference and adjacent channel interference. Describe the technique to avoid interference. [10M]
- OR**
3. How is hand-off in a cellular system implemented. Explain the different types of hand-offs. [10M]
4. Discuss in brief about the Free-space propagation model. [10M]
- OR**
5. Write down the factors influencing small scale fading? [10M]
6. Describe small scale fading and derive the expressions for parameters of mobile multipath channels. [10M]
- OR**
7. Describe in detail Two Ray Rayleigh Fading Model. [10M]
8. What is zero forcing equalizer algorithm.Explain. [10M]
- OR**
9. Derive an expression for performance improvement due to maximal ratio combining. [10M]
10. Explain with an example the DSR Routing protocol. And Discuss how power management done in IEEE 802.11 infrastructure architecture. [10M]
- OR**
11. Describe the functions of MAC & Physical layer of IEEE 802.16 in detail? [10M]
