

**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]

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