Code No.: EC731PE | **R20** | **H.T.No.** | | | **8** | **R** | | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Supply) – April – 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)	What is meant by hard handoff?	[2M]
	b)	List the techniques used to expand the capacity of cellular system.	[2M]
	c)	What is intrinsic impedance and Brewster angle?	[2M]
	d)	Name some of the outdoor propagation models?	[2M]
	e)	Define Doppler shift.	[2M]
	f)	Define Coherence Bandwidth.	[2M]
	g)	Why Diversity and Equalization techniques are used?	[2M]
	h)	Why non-linear equalizers are preferred?	[2M]
	i)	Mention the design goals of WLANs.	[2M]
	j)	What are the different features of MAC Protocols?	[2M]

PART-B **(50 Marks)**

2.	Illustrate the Channel Assignment and handoff Strategies in detail.	[10M]
	OR	
3.	Mention in detail how to improve coverage and channel capacity in cellular system.	[10M]
4.	Explain the advantages and disadvantages of two ray ground reflection model in the analysis of path loss.	[10M]
	OR	
5.	Derive Okumura-Hata empirical in detail.	[10M]
6.	Derive the expressions for coherence time and coherence bandwidth.	[10M]
	OR	
7.	Illustrate the effects of multipath time delay spread and fading effects due to Doppler spread.	[10M]
8.	Explain the principles of RAKE receiver in detail.	[10M]
	OR	
9.	Explain in detail various factors to determine the algorithm for adaptive equalizer. Also derive the least Mean Square algorithm for adaptive equalizer.	[10M]
10.	Explain and compare the media access control mechanism of DCF methods adopted in IEEE 802.11WLAN.	[10M]
	OR	
11.	Explain Hiper LAN in detail.	[10M]

****