Code No.: R22EC601PC

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
III–B.TECH–II–Semester End Examinations (Supply) - December- 2025
ANTENNAS AND WAVE PROPAGATION
(ECE)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 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 **(10 Marks)**

1. a)	Classify the Antennas.	[1M]
b)	Define propagation.	[1M]
c)	Define pattern multiplication.	[1M]
d)	List the advantage of Antenna Arrays.	[1M]
e)	Define Antenna gain.	[1M]
f)	Write the importance of microwave Antennas.	[1M]
g)	Compare VHF and UHF Antenna.	[1M]
h)	List the frequency range for UHF Antenna.	[1M]]
i)	Classify the types of propagation.	[1M]
j)	Define LUF.	[1M]

PART-B **(50 Marks)**

2.a)	Explain Helmholtz Theorem for Antennas.	[5M]
b)	Explain directivity, radiation pattern.	[5M]
	OR	
3.a)	Explain front to back ratio.	[3M]
b)	Explain antenna theorems.	[7M]
4.	Explain the broadside Array Antenna with neat diagram.	[10M]
	OR	
5.	Explain End Fire Antenna with Increased Directivity.	[10M]
6.	Demonstrate Helical Antenna with its geometry.	[10M]
	OR	
7.	Explain Yagi Uda antenna with neat sketch.	[10M]
8.	Explain the Rectangular patch Antenna with its importance.	[10M]
	OR	
9.	Explain feed methods of parabolic reflector antenna with neat diagram.	[10M]
10.	Explain the different modes of wave Propagation with neat sketch.	[10M]
	OR	
11.	Explain the effect of earth on the characteristics of Ground wave & Space wave propagation and also mention its applications.	[10M]

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