SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations June-2024
ANTENNAS AND WAVE PROPAGATION
(Electronics & Communication Engineering)

Time: 3 Hours   Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

1	a	Explain the Front to Back Ratio and Antenna Theorem.	CO1	L5	6M
	b	Find the efficiency of antenna if radiation resistance is 72Ω and loss resistance is 8Ω .	CO1	L4	6M

OR

2	a	Discuss the Retardation Potential and Basic Maxwell Equation.	CO1	L5	6M
	b	Derive the expression for radiation resistance and Directivity of λ /2 Dipole.	CO1	L3	6M

UNIT-II

3	a	Compare fields of small loop and short dipole.	CO2	L2	6M
	b	Explain about construction and operation of Yagi-Uda antenna.	CO2	L5	6M

OR

4	a	Discuss about the horn antenna types & its characteristics.	CO2	L2	6M
	b	Design Yagi-Uda antenna of six elements to provide a gain of 12db if the operating frequency is 200 MHz.	CO2	L4	6M

UNIT-III

5	a	Explain the different tolerances in the lens antenna.	CO3	L2	6M
	b	Write short notes on non-metallic dielectric lenses.	CO3	L1	6M

OR

6	a	With a neat sketch explains the constructional features of parabolic reflector and obtain expression for its curved profile.	CO3	L3	6M
	b	Explain about flat sheet, corner &paraboloidal reflectors.	CO3	L2	6M

UNIT-IV

7	a	Explain near & far fields with respect to antenna measurements.	CO4	L2	6M
	b	Define directivity.Give the procedure for the measurement of directivity.	CO4	L3	6M

OR

8	a	Write short notes on broad side and end fire arrays.	CO4	L2	6M
	b	Explain any two techniques for antenna gain measurement.	CO4	L2	6M

UNIT-V

9	a	Explain about scattering phenomenon & Super refraction.	CO5	L2	6M
	b	Explain about plane earth reflections in ground wave propagation.	CO5	L3	6M

OR

10	a	Explain the terms i) Critical frequency ii) MUF.	CO5	L2	6M
	b	Discuss the structure of Atmosphere.	CO5	L3	6M

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