Exam.Code:0929
Sub. Code: 6595

2063

B.E. (Electronics and Communication Engineering)

Fifth Semester

EC-503: Antennas and Wave Propagation

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part.*

x-x-x

1.	i. Define Antenna efficiency	2
	ii. What is the relation between bandwidth and Q of the antenna?	2
	iii. dBi means _____. Why it is used?	2
	iv. Null to Null beam width of an end fire array is given by _____.	1
	v. Circumference of the ferrite loop is_____.	1
	vi. Half power beamwidth in broadside case is_____.	1
	vii. Maximum usable frequency for a layer is greater than f_c by factor_____.	1
	PART-A	
2.	(a) Explain different antenna parameters: directional pattern, radiation intensity, radiation resistance.	6, 4
	(b) Calculate the effective length of a $\lambda/2$ antenna. Given $R_r=73$, $(A_e)_{max}=0.13\lambda^2$ and $\eta= 120\pi$.	
3.	Describe the following:	3, 3, 4
	(a) Feed network array	
	(b) Folded dipole	
	(c) Baluns & stubs	
4.	(a) How current is distributed in short electric dipole? Derive the expression for power radiated of half wave dipole.	6, 4
	(b) What are the effects of earth on the patterns of antenna radiation?	
	PART-B	
5.	Explain receiving antenna, frequency independent antenna and top loading.	10
6.	What is virtual height, skip distance and optimum working frequency in wave propagation? Discuss.	10
7.	(a) What do you mean by tunning of an antenna? Why it is required?	4, 6
	(b) Give detailed description of the space wave propagation for line of sight propagation.	

x-x-x