GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER-V • EXAMINATION – WINTER 2013

Subject Code: X 51101 Date: 04-12- Subject Name: Antenna and Wave Propagation			
Til	me: 1	10.30 AM - 01.00 PM Total Marks: 70	
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Definition of Antenna and explain functions of an antenna.	07
	(b)	Derive Oscillating electric dipole derivations for E and H field components in spherical coordinate systems.	07
Q.2	(a) (b)	Explain in details Broad-side Array and End-fire Array. Draw and Explain Helical geometry and practical design considerations.	07 07
		OR	
	(b)	Explain yagi-uda array-function and Draw its design.	07
Q.3	(a)	Explain and Draw Radio communication link with transmitting antenna and	07
	(b)	receiving antenna. Derivation for radiation resistance and application of reciprocity theorem to antennas.	07
		OR	
Q.3	(a) (b)	Explain Babinet's principle and complementary antennas in details. Explain Broadband antenna and log periodic antennas.	07 07
Q.4	(a) (b)	Explain Horn antenna-function and Draw types of Horn antenna. Draw and Explain Structure of troposphere and jonosphere	07 07
	(0)	OR	07
Q.4	(a) (b)	Definitions for virtual height and MUF in detail. Explain GPR and Embedded antennas.	07 07
Q.5	(a) (b)	Explain in details: Sky wave propagation. Explain experimental set ups for measurement of radiation patterns, Gain and Phase	07 07
		OR	
Q.5	(a) (b)	Explain Antennas design consideration for satellite communication. Explain Nonmetallic Dielectric lens and artificial dielectric lens antennas.	07 07
