Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – WINTER • 2014

Subject Code: 161003 **Date: 01-12-2014**

Subject Name: Antenna and Wave Propagation

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define Antenna and enlist its functions. Compare Antenna and Transmission line.	**07**
	(b)	Define Oscillating Dipole. Derive **E** and **H** field components due to Oscillating Dipole in spherical co-ordinate systems.	**07**
Q.2	**(a)**	Enlist applications of reciprocity theorems to antennas. Briefly explain any two applications.	**07**
	(b)	Briefly explain end-fire array with necessary equations.	**07**
		OR	
	(b)	Write short note on typical sources of error in antenna measurement.	**07**
Q.3	**(a)**	Briefly explain any two antennas for special applications.	**07**
	(b)	Write short note on space wave propagation.	**07**
		OR	
Q.3	**(a)**	Write short note on log periodic antennas.	**07**
	(b)	Explain detailed structure of Ionosphere.	**07**
Q.4	**(a)**	List various types of horn antennas. Briefly explain slot antenna with necessary figure.	**07**
	(b)	With neat sketches briefly explain patch antennas. Also write its applications.	**07**
		OR	
Q.4	**(a)**	State and explain Babinets principle with example.	**07**
	(b)	With neat sketches briefly explain reflector lens antennas. Also write its applications.	**07**
Q.5	**(a)**	Define the terms Antenna Temperature, Beam width, HPBW and Beam Efficiency.	**07**
	(b)	Write short note on antenna feeding methods.	**07**
		OR	
Q.5	**(a)**	State and explain Schelkunoff theorem.	**07**
	(b)	Write short note on Cassegrain feed system with neat figure.	**07**

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