

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 Babinet's 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**
