

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- VI (Old) EXAMINATION – WINTER 2019****Subject Code: 161003****Date: 04/12/2019****Subject Name: Antenna & Wave Propagation****Time: 02:30 PM TO 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 (i) Directivity (ii) HPBW (iii) FNBW (iv) Radiation Resistance (v) Radiation intensity (vi) Gain (vii) Beam area. **07**
- (b) Write a detail note on types of antenna with necessary diagrams. **07**
- Q.2** (a) Discuss feeding Methods of Dipole. **07**
- (b) Write a short note on Antenna Radiation Pattern with necessary figure. **07**
- OR**
- (b) Derive Friss Transmission formula. **07**
- Q.3** (a) Explain Antenna Field zones. **07**
- (b) Derive the Expressions of Maxima, Minima and Half power points for End fire array. **07**
- OR**
- Q.3** (a) Derive the Expressions of Maxima, Minima and Half power points for Broad side array. **07**
- (b) Explain principle of Pattern Multiplication. **07**
- Q.4** (a) What do you mean by Antenna Synthesis? Explain Schelkunoff theorem in brief. **07**
- (b) Write a short note on Loop antenna. **07**
- OR**
- Q.4** (a) Discuss two Modes of Helical antenna. Enlist the design step for any one mode with the help of necessary formula. **07**
- (b) Explain Yagi Uda antenna in detail. **07**
- Q.5** (a) Explain different types of Reflector antennas. **07**
- (b) Explain Babibet's principal for slot antenna. **07**
- OR**
- Q.5** (a) Explain different Modes of Propagation with its Practical significance. **07**
- (b) Explain (i) Skip Distance (ii) Critical Frequency (iii) MUF **07**
