

Seat No.: \_\_\_\_\_

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# GUJARAT TECHNOLOGICAL UNIVERSITY

## PDDC SEM-V Examination-Nov-2011

**Subject code: X51101**

**Date: 19/11/2011**

**Subject Name: Antenna and Wave Propagation**

**Time: 2.30 pm -5.00 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 the terms: Radio antenna, Radiation intensity, Directivity, Effective height. **07**  
(b) Compare Broadside array, Binomial array and Dolph-Tchebyscheff with radiation pattern. **07**

- Q.2** (a) Explain Babinet's principle. **07**  
(b) Write short-notes on (any one) **07**  
1) Yagi-Uda antenna  
2) Folded dipole antenna

**OR**

- (b) Write short-notes on (any one) **07**  
1) Reflected antenna  
2) Lens antenna

- Q.3** (a) Explain frequency independent Log-periodic antenna. **07**  
(b) Explain Microstrip antenna with application. **07**

**OR**

- Q.3** (a) Explain smart antenna. **07**  
(b) Explain various types of horn antenna with neat sketches. **07**

- Q.4** (a) Explain construction of Ionosphere layers. Define terms: MUF, Virtual height, Skip distance. **07**  
(b) Explain all types of long wire antenna. **07**

**OR**

- Q.4** (a) Explain helical geometry with neat sketches. **07**  
(b) Explain Embedded antenna and Plasma antenna **07**

- Q.5** (a) Explain antennas design consideration for satellite communication. **07**  
(b) Explain Ground wave propagation. Why vertical polarization is used for ground wave propagation. **07**

**OR**

- Q.5** (a) List polarization measurement methods. Explain any one. **07**  
(b) Explain Space wave propagation and super refraction. **07**

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