Seat No.: _____

Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY ME SEMESTER II EXAMINATION – SUMMER 2017

Subject Code: 2720503 Subject Name: Antenna Engineering Design Time:02:30 PM to 05:00 PM

Date: 29/05/2017

Total Marks: 70

Instructions:

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

Q.1	(a)	Define (1) Radiation resistance (2) Beam solid angle (3) HPBW (4) Near and far field (5) Array factor (6) Effective length (7) Gain and directivity.	07	
	(b)	Explain frequency independent concept. Also explain any one type of frequency independent antenna.	07	
Q.2	(a)	State fundamental theory of antennas and also explain Reciprocity theorem in brief.	07	
	(b)	Explain array analysis of two isotropic point sources. OR	07	
	(b)	Explain planar and circular array with their applications.	07	
Q.3	(a)	Explain Linear array of n isotropic point sources of equal amplitude and spacing. Also discuss the cases for (i) Broadside (ii) End fire (iii) End fire with increased directivity (iv) scanning array.	07	
	(b)	What are phase arrays? Explain with suitable example. OR	07	
Q.3	(a)	Explain nonisotropic but similar point sources and explain Pattern multiplication principle with suitable example.	07	
	(b)	What is different antenna analysis method? Explain any one of them in brief.	07	
Q.4	(a)	What is the Significance of D-T algorithm? Also explain the important property of the Tchebyscheff polynomial.	07	
	(b)	Explain salient features of Micro strip antenna with its advantages and limitations.	07	
OR				
Q.4	(a)	Explain characteristics of micro strip patch antenna.	07	
	(b)	Discuss the concept of smart antenna? Explain the need of smart antenna in cellular system.	07	
Q.5	(a)	Explain parabolic reflector antenna with different feed methods in detail.	07	
	(b)	Explain types of rectangular and circular horn antenna with their applications. OR	07	
Q.5	(a)	Write note on recent advances in fractal antenna with their applications.	07	
~	(b)	Explain any one antenna optimization technique.	07	
