

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– VII (New) EXAMINATION – WINTER 2019

Subject Code: 2171011**Date: 30/11/2019****Subject Name: Radar & Navigational Aids****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

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

		MARKS
Q.1	(a) Distinguish between COHO and STALO.	03
	(b) Explain the operation of radar with necessary diagram.	04
	(c) Write short note on radar transmitters.	07
Q.2	(a) Explain briefly: Pulse Repetition Frequency and range ambiguities	03
	(b) Write short note on pulse Doppler radar.	04
	(c) Explain principle of phased array for electronic scanning.	07
	OR	
	(c) Write short note on radar antenna.	07
Q.3	(a) Explain the block diagram of basic CW RADAR System.	03
	(b) Explain automatic direction finder through a block diagram.	04
	(c) Explain block diagram of simple digital MTI radar signal processor.	07
	OR	
Q.3	(a) Explain sea clutter and Land clutter.	03
	(b) Explain working of LORAN navigation system?	04
	(c) What is Duplexer? Discuss principle and working of balanced duplexer with the help of necessary diagram.	07
Q.4	(a) Explain briefly Minimum Detectable Signal and Receiver Noise.	03
	(b) Explain block diagram of amplitude comparison monopulse tracking radar.	04
	(c) For air surveillance radar, how tracking is done (TWS)?	07
	OR	
Q.4	(a) Explain briefly Goniometer.	03
	(b) Explain working of LORAN navigation system?	04
	(c) Discuss different types of modulators used for radar transmitter with the help of block diagram.	07
Q.5	(a) Explain with a neat diagram about sequential lobbing & Conical scanning.	03
	(b) Explain briefly Global Positioning system.	04
	(c) Write short note on FM CW radar	07
	OR	
Q.5	(a) Write limitations of CW radar.	03
	(b) Explain Airborne Doppler navigation.	04
	(c) Describe the electronics aids to approach and landing system.	07
