	VASIREDDY VENKATADRI INSTITUTE OF TECHNOLOGY NAMBUR (AUTONOMOUS)	
	YEAR/SEM : IV – B.Tech I-SEM	**NAME OF THE EXAM :** MID – II
	SUBJECT : RADAR SYSTEMS	**SUBJECT CODE :**
	BRANCH : ECE	**DATE :** 18-01-2022

ANSWER ALL QUESTIONS

Time: 90 Minutes **Max. Marks:** 30

			CO	BL	PO	XM
1.	**a.**	Describe the phase comparison mono pulse tracking technique in a radar system.	4	1	1	5
	b.	Explain sequential lobing type of tracking technique with necessary illustrations.	4	2	1	5
2.	**a.**	Show that the impulse response of a matched filter used in radar receiver is a delayed version of mirror image of the signal form.	5	2	2	5
3.	**a.**	Describe various types of duplexers.	6	1	1	5
	b.	Write short notes on advantages, limitations and applications of antenna arrays in radar systems	6	1	1	5

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			CO	BL	PO	XM
1.	**a.**	Describe the conical scan tracking radar. How is it different from sequential lobing tracking radar?	4	1	1	5
	b.	Describe the process of acquiring a moving target prior to tracking it along with the patterns used for acquisition.	4	1	1	5
2.	**a.**	Describe how a correlator can replace a matched filter in a radar receiver.	5	1	1	5
	b.	Discuss the efficiency of non-matched filters and write an expression for the frequency response of matched filter if the noise is nonwhite	5	2	2	5
3.	**a.**	With neat sketches explain series versus parallel feeds	6	1	1	5
	b.	Write notes on various antenna parameters with reference to radar.	6	1	1	5

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			CO	BL	PO	XM
1.	**a.**	Draw the block diagram of amplitude comparison monopulse radar and explain the functioning of this two dimensional tracking radar.	4	2	1	5
	b.	Compare various types of trackers	4	3	1	5
2.	**a.**	What is noise figure and noise temperature. Obtain an expression for system noise temperature of a radar receiver.	5	2	1	5
	b.	Write short notes on radar displays	6	1	1	5
3.	**a.**	Briefly explain the concept of beam steering of phased array antennas.	6	2	1	5
	b.	What are Radomes? Explain its characteristics.	6	1	1	5