



Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Radar Communication

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1				M	L	C
Q.1	a.	Derive Radar equation. Discuss the effects of each parameter on the maximum detection range of the radar.	10	L3	CO1	
	b.	Draw the block diagram of pulse radar with super heterodyne receiver and explain the function of each block and its operation.	10	L2	CO1	
OR						
Q.2	a.	Define Radar cross section of targets and explain its significance for various types of targets.	10	L2	CO1	
	b.	Explain the following : (i) Pulse Repetition Frequency (PRF) (ii) Range Ambiguities (iii) Minimum detectable signal	10	L2	CO1	
Module – 2						
Q.3	a.	With a neat block diagram, explain simple CW Doppler radar. Also mention the advantages and disadvantages.	10	L2	CO2	
	b.	Discuss the block diagram of MTI radar that uses a power amplifier as the transmitter.	10	L2	CO2	
OR						
Q.4	a.	Explain one angle co-ordinate amplitude comparison mono-pulse tracking with neat diagram.	10	L2	CO2	
	b.	What are the different types of tracking radar systems? Explain with diagrams, how angle tracking is done.	10	L2	CO2	
Module – 3						
Q.5	a.	Explain the parameters required for measurement of a point target.	10	L2	CO3	
	b.	Explain how the formula for time delay accuracy in radar measurement is simplified.	10	L2	CO3	
OR						
Q.6	a.	Derive surface clutter radar equation.	10	L3	CO3	
	b.	Explain the detection of radar signals in high resolution sea clutter.	10	L2	CO3	

Module – 4				M	L	C
Q.7	a.	Explain Klystron with a neat diagram.	10	L2	CO4	
	b.	Explain the working principle of a traveling wave tube with the help of a diagram.	10	L2	CO4	
OR						
Q.8	a.	List and explain different types of mixers used in radar receiver.	10	L2	CO4	
	b.	With diagram, explain the operation of balanced duplexer.	10	L2	CO4	
Module – 5						
Q.9	a.	Derive Radar equation for synthetic Aperture Radar system.	10	L3	CO4	
	b.	Explain the classification of OTHR systems. Explain ionosphere effect on OTHR systems.	10	L2	CO4	
OR						
Q.10	a.	Explain principles of secondary Surveillance Radar.	10	L2	CO4	
	b.	With related formula, explain range performance in secondary Surveillance Radar.	10	L2	CO4	
