GUJARAT TECHNOLOGICAL UNIVERSITY					
BE - SEMESTER-VII (OLD) - EXAMINATION – SUMMER 2017					
Su	bject	Code: 171001 Date: 11/05/2	017		
Subject Name: Microwave Engineering Time: 02:30 PM to 05:00 PM Instructions:			s: 70		
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.			
Q.1	(a)	Draw block diagram of pulsed radar and derive the equation to determine the maximum range of radar	07		
	(b)	Define following : (i) Guide wave length (ii) Group velocity (iii) Phase velocity (iv) Wave impedance (v) VSWR (vi) Return loss (vii) Characteristics impedance	07		
Q.2	(a)	Write limitations of conventional tubes at UHF and microwave frequencies. Write advantages and applications of microwave frequencies.	07		
	(b)	Explain working of two cavity klystron with necessary diagram and waveforms OR	07		
	(b)	Draw and explain block diagram of MTI radar	07		
Q.3	(a)	Explain structure and working of TRAPATT diode with necessary waveforms and derivations. Write its limitations and applications.	07		
	(b)	Draw and explain equivalent circuit of length Δx of a transmission line at microwave frequencies. Derive basic equations for voltage and current on transmission line.	07		
OR					
Q.3	(a)	Explain Magic Tee with necessary sketch. Compare E-plane Tee with H-plane Tee.	07		

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(b) Write advantage of wave guide over co-axial cable and Explain working of Circular wave guide with necessary diagram and waveforms.

Q.4	(a)	Write short note on Circulators and isolators	07
	(b)	Explain construction, characteristic and application of Gunn diode.	07
		OR	
Q.4	(a)	What do you mean by stub? Explain impedance matching by use of stub with necessary circuit, waveforms and derivation	07
	(b)	Write short note on: Micro strip lines	07
Q.5	(a)	Explain working principle of varactor diode. Discuss the application of PIN diode and IMPATT diode	07
	(b)	Write properties of smith chart and explain its application with any one example.	07
		OR	
Q.5	(a)	Write short notes on: Directional couplers	07
	(b)	Explain working of multy cavity klystron with necessary diagram and waveforms	07
