O.P.Code: 19EC0422 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations May/June-2024
MICROWAVE THOERY AND TECHNIQUES
(Electronics and Communication Engineering)

Time: 3 Hours **Max. Marks: 60**

(Answer all Five Units **5 x 12 = 60** Marks)

		UNIT-I				
1	a	Discuss in detail about the concept of mode	CO2	L2	6M
	b	Describe the concept of dominant mode and degenerate mode with suitable examples.	CO2	L2	6M
		OR				
2	a	What are the methods used to overcome losses in impedance matching?	CO4	L1	6M
	b	List out the features of TEM, TE and TM Modes.	CO1	L2	6M
		UNIT-II				
3	a	Discuss about Impedance & Admittance matrix representation of 2 port, NPort microwave network under analysis of RF and microwave transmission line.	CO1	L2	6M
	b	Derive the S-matrix for series connection of two port network.	CO4	L3	6M
		OR				
4	a	Explain the working of principle Circulator with a neat sketch.	CO3	L2	6M
	b	What is Isolator? Derive its S-matrix.	CO2	L1	6M
		UNIT-III				
5		Describe the following attenuators i) Resistive Card attenuator ii)Rotary Vane Attenuato	CO2	L2	12M
		OR				
6	a	What are the types of directional coupler? Explain in detail.	CO1	L1	6M
	b	Derive the S-matrix for Hybrid ring.	CO4	L2	6M
		UNIT-IV				
7	a	Explain the constructional details and principle of operation of two cavity klystron with the neat sketch.	CO6	L2	6M
	b	Illustrate the phenomenon of bunching with the help of Applegate diagram of two cavity Klystron tube.	CO5	L3	6M
		OR				
8		Explain in detail about 8- Cavity magnetron with suitable diagram.	CO6	L2	12M
		UNIT-V				
9	a	Discuss in detail about the microwave power measurement using Bolometric technique.	CO4	L2	6M
	b	List the possible errors in VSWR measurement.	CO4	L2	6M
		OR				
10	a	With the help of wave meter method explain the microwave frequency measurement.	CO5	L1	6M
	b	Describe the measurement of impedance using slotted line method.	CO4	L4	6M

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