B. Tech. ESTC 2007 Sem-VI

33087

NARNALA – VII: WINTER - 2016 SUBJECT: MICROWAVE DEVICES & CIRCUITS

(2007 Course)

			WAVE DEVICES & CIRCUITS	
Day Date	Day: Saturday Date: 10-12-2016 Max. Marks:			2:30PM·T05:30PM. Marks: 80
N.B	2 3 4	TWO questions from each Figures to the right indicate Answers to both the section	e FULL marks. as should be written in SEPARATE an	swer books
			SECTION-I	u u
Q.1	a) b) c)	Write short note on microwave circulators.		(05)
Q.2	a)	Define: i) Cut off wave number ii) Resonant frequency iii) Phase constant existing in re	ectangular cavity	(07)
	b)	Discuss power transmission in	rectangular waveguide with power loss	es. (06)
Q.3	a) b)	Write short note on microwave high pass filter. Comment on microwave twist, bends and joints.		(07) (06)
Q.4	a) b)	Explain in detail construction at Compare two cavity klystron w	nd working of helix TWT. ith reflex klystron.	(07) (06)
			SECTION-II	
Q.5	a) b) c)	How varactor diode operate at r Explain Gunn effect. Discuss ohmic losses in strip lir		(05) (05) (04)
Q.6	a) b)	Write short note on Multicavity reflex Klystron. Explain beam and filed interaction in TWT.		(07) (06)
Q.7	a) b)	Write short note on construction Explain PIN diode.	and application of microstrip line.	(0 ⁷) (06)
Q.8	a) b)	Derive expression for characteri Discuss applications of microwa	stics impendence of microstrip line.	(07) (06)

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Time: 2:30 P.M. T05:30 P.M. 10-12-2016 Date: Max. Marks: 80 N.B.: 1) Q. No. 1 and Q. No. 5 are COMPULSORY. Out of the remaining attempt any TWO questions from each section. 2) Figures to the right indicate FULL marks. Answers to both the sections should be written in SEPARATE answer books 3) 4) Draw diagrams WHEREVER necessary. **SECTION-I** Q.1 a) Explain in detail TE and TM modes existing in rectangular wave guide. (05)b) Write short note on microwave circulators. (05)c) Give principles of operation, construction and working of reflex klystron. (04)Q.2 a) Define: (07)i) Cut off wave number ii) Resonant frequency iii) Phase constant existing in rectangular cavity b) Discuss power transmission in rectangular waveguide with power losses. (06)Q.3 a) Write short note on microwave high pass filter. (07)b) Comment on microwave twist, bends and joints. (06)Q.4 a) Explain in detail construction and working of helix TWT. (07)b) Compare two cavity klystron with reflex klystron. (06)SECTION-II Q.5 a) How varactor diode operate at microwave frequency. (05)b) Explain Gunn effect. (05)c) Discuss ohmic losses in strip line. (04)a) Write short note on Multicavity reflex Klystron. (07)b) Explain beam and filed interaction in TWT. (06)Write short note on construction and application of microstrip line. 0.7 a) (07)Explain PIN diode. (06)Derive expression for characteristics impendence of microstrip line. Q.8 a) (07)b) Discuss applications of microwave link. (06)

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