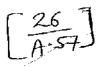
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SARDARPATEL UNIVERSITY

S.Y.B.Sc. (IVth SEM.)- Instrumentation (vocational) SUBJECT- POWER ELECTRONICS COURSE CODE-USO4CINV01 6th APRIL-2016

Time:	-10:30am to 1:30pm	Marks:-70	
Q-1	Multiple choice Questions.	[10]	
1.	The range of output frequency	of a relaxation oscillator usingis very	
	small.		
	(a) SUS	(c) CSCR	
	(b) UIT	(d) none of above	
2.	In phase control using TRIAC use to snubber circuit to avoid the highturn		
	on device.		
	(a) di/dt	(c) dv/di	
	(b) dv/dt	(d) all of above	
3.	Thyristor device mainly used t		
	(a) rectification	(c) power control	
	(b) amplification	(d) all of above	
4.	The turn on time depends on		
	(a) anode circuit parameter	(c) rise time	
	(b) gate signal amplitude	(d) all of above	
5	SCR is alayer device	• ` '	
	(a) Three	(c) Four	
	(b) Two	(d) none of above	
6	SCR are connected in parallel to improve the rating.		
	(a) current	(c) both (A) and (B)	
	(b) voltage	(d) none of above	
7	is bi-lateral device wi		
	(a) TRIAC	(c) SCR	
	(b) DIAC	(d) none of above	
8	The disadvantage of parallel	connection of compensation is that loss of	
	due to series resistance.		
	(a) current	(c) voltage	
	(b) power	(d) none of above	
9	used to insulate th	e conducting parts of electric iron and to avoid	
	the shock to the operator.		
	(a) Porcelain cleats	(c) both (A) and (B)	
	(b) Asbestos sheet	(d) none of above	
10	The Megger consists of magneto- generator andcombined in		
	same box.		
	(a) ohm-meter	(c) current-meter	
	(b)volt-meter	(d) none of above	

	Q-2	Diffit Billiage of accounting and and and	[20]
	1.	List the points designing gate control circuit of turning —on mechanism of an SCR.	
	2.	Define string efficiency.	
	3.	Which factor contributes to internal losses of thyristor?	
	4.	Differentiate TRIAC and SCR.	
	5.	Draw RC snubber circuit and briefly explain it.	
	6.	What is relaxation oscillator?	
	7.	Draw SCS symbol and characteristics.	
	8.	Enlist thyristor application.	
	9.	What is cycloconverter? And list its application.	
	10.	Briefly explain Thermostat principle in heating application.	
	11.	Briefly explain 'Continuity and Short circuit test' of an Electric Toasters.	
	12.	List different parts of Non-automatic iron.	
t	Q-3 (A)	Write note on a series operation of an SCR with necessary figure.	[6]
	Q-3(B)	Explain TURN-ON mechanism of an SCR with its characteristics.	[4]
		OR	
	Q-3 (A)	Write note on a parallel operation of an SCR with necessary figure.	[6]
	Q-3(B)	Explain principle operation of an SCR with its characteristics.	[4]
	Q-4(A)	Explain construction and Triggering mode of TRIAC with necessary figure.	[6]
	Q-4(B)	Explain phase control using TRIAC with necessary fig.	[4]
		OR	
	Q-4(A)	Discuss constructional mechanism and characteristics of UJT.	[6]
	Q-4(B)	Explain operation of UJT as relaxation oscillator.	[4]
	Q- 5	Explain Thyristor applications :	
	Q.J	(1) Over voltage protection.	[5]
		(2) Pulse circuit	[5]
		OR	
	Q-5(A)	Explain Static breaker circuit.	[5]
	Q-5(B)	Explain Astable and Pulse stretcher circuits using SCS.	[5]
	Q-6	Explain construction and working principle of Megger. List different tests can	[10]
		be performed by Megger, discuss any three of its.	
		OR	
	Q-6(A)	Draw an assembled diagram of washing machine and explain it. And enlist the possible faults.	[5]
	O-6(R)	والمرابع المرابع المرا	[5]