Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V- EXAMINATION - SUMMER 2016

Su	bject	Code: 150905 Date: 13/05	/2016
Su	bject	Name: Switchgear	
Ti	me: 0	2:30 PM to 05:00 PM Total Mar	ks: 70
Ins	tructio	ns:	
		Attempt all questions.	
		Make suitable assumptions wherever necessary.	
	3.	Figures to the right indicate full marks.	
Q-1	(a)	Explain modes of arc extinction in A.C Circuit breakers.	07
	(b)	Define the term " switchgear " and describe fault clearing process with	07
	(-)	figure.	
Q-2	(a)	Explain current chopping	07
	(b)	Discuss the following term relation to circuit breaking.	07
	` /	(1) Rated Breaking Capacity.	
		(2) Rated Making Capacity.	
		(3) Rated Operating Duty.	
		OR	
	(b)	Discuss the energy balance theory of arc interruption in circuit breaker.	07
Q-3	(a)	i) Differentiate between Circuit breaker and Fuse	07
		(ii)Differentiate between Circuit breaker and isolators.	
	(b)	Explain the construction, working principle, merits and demerits of Air break circuit breakers	07
		OR	
	(a)	Explain switching of capacitor banks.	07
	(b)	Write a short note on minimum oil circuit breaker.	07
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Q-4	(a)	Draw a basic short circuit testing plant of circuit breaker	07
	(b)	Explain operating mechanism to open and close contact of circuit breaker	07
		OR	
	(a)	Explain the Direct testing & Indirect testing of the circuit breakers.	07
	(b)	Describe the working principle of axial air blast circuit breaker and	07
		explain why resistance switching is used with this type of circuit breaker.	
Q-5	(a)	Write the dielectric properties and arc quenching properties of SF6 gas.	07
Q s	(b)	Describe the desired properties of a vacuum circuit breaker contact material.	07
	(0)	OR	· ·
	(a)	Discuss the operating principle of SF 6 circuit breaker and what its	07
	()	Advantages over other circuit breakers.	- •
	(b)	Describe the construction operating principle and application of vacuum	07
	` /	circuit breaker	