Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 160904 **Date: 28/11/2011**

Subject Name: High Voltage Engineering

Time: 10.30 am -1.00 pm **Total marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Discuss Paschen's Law for breakdown in Gases	**07**
	(b)	Explain corona Discharges	**07**
Q.2	**(a)**	Explain breakdown in Electronegative Gases.	**07**
	(b)	Discuss Vaccum Breakdown	**07**
		OR	
	(b)	Explain Purification & Breakdown Tests for Liquid Dielectric.	**07**
Q.3	**(a)**	Why is controlled triggering required in an impulse generator ? Explain typical trigger arrangement.	**07**
	(b)	Explain how are switching impulse generated in Laboratory.	**07**
		OR	
Q.3	**(a)**	Explain solid breakdown due to Treeing & Tracking.	**07**
	(b)	Discuss Epoxy Resins & Polyesters as solid Dielectrics.	**07**
Q.4	**(a)**	Discuss Marx circuit for Multistage impulse generators.	**07**
	(b)	An impulse generator has 8 stages with each condenser rated for 0.16 μF and 125 KV. The load capacitor available is 1000 pF. Find the series resistance and damping resistance needed to produce 1.2/50 μs impulse wave. What is the Maximum output voltage of the generator, if the charging voltage is 120 KV ?	**07**
		OR	
Q.4	**(a)**	Explain capacitance voltage Transformer with its schematic representation, Equivalent circuit & its phasor diagram	**07**
	(b)	Which are different factors that affect the sparkover voltage of sphere gap ? Discuss it in brief.	**07**
Q.5	**(a)**	Draw & Explain series capacitor peak voltmeter.	**07**
	(b)	Discuss High voltage Schering Bridge	**07**
		OR	
Q.5	**(a)**	Discuss measurement of Dielectric constant & Loss tangent of capacitor.	**07**
	(b)	Explain High voltage Test on Insulator.	**07**

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