Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIth SEMESTER–EXAMINATION – MAY- 2012

Subject code: 160803 **Date: 15/05/2012**

Subject Name: Switch Gear & Protection

Time: 10:30 am – 01:00 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)**	Explain the construction and working principle of Air blast circuit breaker.	**07**
	(b)	Explain the properties of SF_6 Gas.	**07**
Q.2	**(a)**	Explain the types of arc interruption phenomena in circuit breaker.	**07**
	(b)	Derive the necessary formula of Rate of Rise of Restriking Voltage. (RRRV)	**07**
		OR	
	(b)	Define the following terms. (1) Recovery voltage (2) RRRV (3) Current chopping	**07**
Q.3	**(a)**	Explain the CT- Saturation characteristic with necessary circuit diagram.	**07**
	(b)	Explain the construction and torque equation of induction cup type relay.	**07**
		OR	
Q.3	**(a)**	Give the comparison between static and conventional (Electromagnetic) relay.	**07**
	(b)	Explain the different characteristic of distance relay. Explain ratings and specifications of circuit breaker in detail.	**07**
Q.4	**(a)**	Why neutral grounding is required? Explain any one method of neutral grounding.	**07**
	(b)	Explain the different types of faults in generator.	**07**
		OR	
Q.4	**(a)**	Explain differential protection scheme for protection of transformer.	**07**
	(b)	Explain the construction and working principle of Zinc Oxide lightning arrester. Explain three zone distance relay protection scheme using impedance relay for transmission line.	**07**
Q.5	**(a)**	Explain the phenomena of generation of over-voltage in power system.	**07**
	(b)	Explain the construction, working principle and characteristic of HRC fuse.	**07**
		OR	
Q.5	**(a)**	Explain the requirements of good protection system.	**07**
	(b)	Explain bus-bar protection in detail.	**07**

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