

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VI • EXAMINATION – WINTER 2012

Subject code: 160803**Date: 04/01/2013****Subject Name: Switch Gear & Protection****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

Q.1 (a) Explain arc quenching properties of SF₆ gas suitable in SF₆ circuit breakers **07**

(b) Derive the necessary formula of Rate of Rise of Restriking Voltage. (RRRV) **07**

Q.2 (a) Explain electromagnetic induction relays with necessary mathematical equations. **07**

(b) Explain difference between instrument transformer and protective transformer. **07**

OR

(b) Explain minimum oil circuit breaker, with its advantages and disadvantages **07**

Q.3 (a) Explain the construction and working principle of Air blast circuit breaker. **07**

(b) Explain the CT- Saturation characteristic with necessary circuit diagram. **07**

OR

Q.3 (a) Explain the different types of faults in generator **07**

(b) Explain the construction and torque equation of induction cup type relay. **07**

Q.4 (a) Explain the construction, working principle and characteristic of HRC fuse. **07**

(b) Why neutral grounding is required? Explain any one method of neutral grounding. **07**

OR

Q.4 (a) Explain the phenomena of generation of over-voltage in power system **07**

(b) Draw the characteristic of IDMT relay and explain term TSM and PSM. **07**

Q.5 (a) Explain Buchholtz relay protection. **07**

(b) Explain bus-bar protection in detail. **07**

OR

Q.5 (a) Explain differential protection and biased differential protection. **07**

(b) Explain Translay relay with necessary diagram. **07**
