

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VI • EXAMINATION – WINTER 2013

Subject Code: 160803**Date: 02-12-2013****Subject Name: Switch Gear and Protection****Time: 02:30 pm to 05:00 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 principles of Arc Interruption. Define (1) Recovery Voltage (2) RRRV (3) Restriking Voltage **07**
(b) Explain construction and working principle of Air Blast Circuit Breaker. **07**
- Q.2** (a) Draw and Explain Inverse, Very Inverse and Extremely Inverse characteristic of Relay. **07**
(b) Derive the equation for Ratio and Phase angle error of Current Transformer. **07**
- OR**
- (b) Derive the necessary equation of Restriking Voltage and RRRV for Circuit Breaker. **07**
- Q.3** (a) Explain construction and working principle of Induction Disc type relay. **07**
(b) Explain Impedance, Reactance and Mho characteristic of Distance Relay. **07**
- OR**
- Q.3** (a) Explain comparison between Static and Electromagnetic Relay. **07**
(b) Explain the faults in Power Transformer. **07**
- Q.4** (a) Why Neutral grounding is required? Explain any two methods of Neutral Grounding. **07**
(b) List out abnormalities of Generator. Explain Inter turn fault protection scheme. **07**
- OR**
- Q.4** (a) Explain the causes of over-voltages in Power System. Explain the working of Zinc Oxide Lightning Arrester. **07**
(b) Explain three zone protection schemes of lines. **07**
- Q.5** (a) Explain Percentage Differential Protection scheme for Transformer. **07**
(b) Explain the properties of SF₆ Gas. **07**
- OR**
- Q.5** (a) Explain construction and working principle of Buchholz relay. **07**
(b) Differentiate between Bulk and Minimum oil circuit breaker. **07**
