

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER • 2014****Subject Code: 160803****Date: 23-05-2014****Subject Name: Switch Gear and 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 CT- Saturation characteristic with necessary circuit diagram. **07**
(b) Derive the necessary formula of Rate of Rise of Restriking Voltage. (RRRV) **07**
- Q.2** (a) Explain the properties of SF₆ Gas. **07**
(b) Explain difference between instrument transformer and protective transformer. **07**
- OR**
- (b) Explain the construction and working principle of Air blast circuit breaker. **07**
- Q.3** (a) Draw the characteristic of IDMT relay and explain term TSM and PSM. **07**
(b) Explain Construction, Working Principle, Merits and Demerits of vacuum Circuit Breaker. **07**
- OR**
- Q.3** (a) Explain impedance relay with its mathematical equation and operating Characteristics. **07**
(b) Draw the block diagram of static relay and explain advantages and disadvantages of static relays. **07**
- Q.4** (a) Explain Translay relay with necessary diagram. **07**
(b) Explain differential protection and biased differential protection of transformer. **07**
- OR**
- Q.4** (a) Explain advantages and disadvantage of HRC fuse. **07**
(b) Explain construction and working principle of Zinc –Oxide type lightening arrestor. **07**
- Q.5** (a) Explain different types faults in generator. **07**
(b) Explain bus-bar protection in detail. **07**
- OR**
- Q.5** (a) What is incipient fault in case of transformer? Explain working of buchholtz relay. **07**
(b) Explain protection against lightening over voltages. **07**
