

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI • EXAMINATION – WINTER • 2014

Subject Code: 160803

Date: 01-12-2014

Subject Name: Switch Gear and Protection

Time: 02:30 pm - 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 principle and different methods of Arc interruption. 07
(b) List out types of circuit breaker. Explain Circuit Breaker ratings and specifications. 07
- Q.2(a) What is the need of Instrument Transformer in power system protection? Why CT secondary should never open circuit? 07
(b) Define following terms: (1) Recovery Voltage (2) RRRV (3) Resistance Switching 07
OR
- (b) Explain the construction and working principle of SF₆ Circuit Breaker. 07
- Q.3(a) Give the comparison between Bulk and Minimum oil circuit breaker. 07
(b) What are the reasons for generation of over voltages in power system? 07
OR
- Q.3(a) What do you mean by insulation coordination? Explain volt-time characteristics of standard impulse wave. 07
(b) Explain 3-zone protection of transmission lines by distance relays. 07
- Q.4(a) Give the classification of electromagnetic relay. Explain construction and working principle of attracted armature type relay. 07
(b) Explain the faults and abnormalities in power transformer. Explain differential protection of transformer. 07
OR
- Q.4(a) Explain the construction and working principle of Buchholtz relay for the protection of power transformer against overloading. 07
(b) Explain impedance, Reactance and Mho characteristics of distance relay. 07
- Q.5(a) Explain carrier current protection scheme of transmission lines by necessary circuit diagram. 07
(b) Explain the effects of ungrounded neutral on power system performance. Explain any one method of neutral grounding. 07
OR
- Q.5(a) Explain the comparison between Static versus Electromagnetic relay. 07
(b) Explain the need of fuse in protection. Explain the current time characteristics of fuse. 07
