

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V • EXAMINATION – SUMMER 2014

Subject Code: 150905

Date: 26-06-2014

Subject Name: Switchgear

Time: 10:30 am to 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 D.C. Circuit Breakers. **07**
(b) Differentiate :- **07**
(i) Circuit breaker and Fuse
(ii) Circuit breaker and isolators.
- Q.2** (a) Discuss the chemical, physical and dielectric properties of SF₆ gas. **07**
(b) Discuss the process of arc initiation in Circuit Breaker. Describe properties of arc and arc extinction. **07**
- OR**
- (b) Short Note on Vacuum Circuit Breaker. **07**
- Q.3** (a) Discuss the principle of arc extinction in an oil circuit breaker. Describe the phenomenon of pre-arcing. **07**
(b) Write a short note on factors affecting performance of air blast circuit breaker. **07**
- OR**
- Q.3** (a) Explain the modification of Circuit Breaker duty by shunt resistors and series resistors. **07**
(b) Discuss the energy balance theory of arc interruption in circuit breaker. **07**
- Q.4** (a) Explain the construction, working principle, merits and demerits of Air Break Circuit Breakers. **07**
(b) Explain current chopping in circuit breaker. **07**
- OR**
- Q.4** (a) Describe the following : **07**
(i) Problem associated with the interruption of Small inductive currents.
(ii) Effect of Power Factor on TRV.
(b) Short note on MOCB. **07**
- Q.5** (a) Explain resistance switching. **07**
(b) Explain the equipments used in Testing station of the circuit breakers. **07**
- OR**
- Q.5** (a) Classify the different testing carried out on Circuit Breakers and Explain any two of them. **07**
(b) Discuss the performance of circuit breaker when capacitive current are interrupted. **07**
