

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER 2013****Subject Code: 150905****Date: 29-05-2013****Subject Name: Switchgear****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 physics of Arc phenomena and maintenance of Arc. **07**
(b) Explain Low Resistance Arc Interruption theories. **07**

- Q.2** (a) Describe in detail the ratings of a circuit breaker. **07**
(b) Discuss the rate recovery theory of arc interruption in circuit breaker. **07**

OR

- (b) Explain the construction, working principle, merits and demerits of Air Break Circuit Breakers. **07**

- Q.3** (a) Explain the properties of SF₆ gas in recent developments of Circuit Breaker. **07**
(b) Explain the D.C. Circuit Breakers. **07**

OR

- Q.3** (a) In what respect is a M.O.C.B an improvement over B.O.C.B. what are limitation of M.O.C.B. **07**
(b) Write a short note on HVDC circuit breaker. **07**

- Q.4** (a) Explain resistance switching. **07**
(b) Explain current chopping in circuit breaker. **07**

OR

- Q.4** (a) Short Note on Vacuum Circuit Breaker. **07**
(b) Discuss the principle of arc extinction in an oil circuit breaker. Describe the phenomenon of pre-arcing. **07**

- Q.5** (a) Describe the following : **07**
(i) Problem associated with the interruption of Small inductive currents
(ii) Effect of Power Factor on TRV.
(b) What is the important of testing of Circuit Breaker? Describe direct testing method of a Circuit Breaker. **07**

OR

- Q.5** (a) Draw and Explain the Essential Parts of SF₆ Circuit Breaker. **07**
(b) What is Switchgear ? Explain The Duties of Switchgear. **07**
