

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- V(OLD) EXAMINATION – SUMMER 2019****Subject Code:150905****Date:06/06/2019****Subject Name:Switchgear****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) Discuss the energy balance theory of arc interruption in circuit breaker. **07**
(b) What is circuit breaker? Discuss the arc phenomenon in a circuit breaker. **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) Write a short note on: Resistance switching in HV circuit breakers. **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) What are the main parts of equipment which are used for testing of circuit breaker in laboratory type testing station? **07**
(b) Draw a basic short circuit testing plant of circuit breaker. **07**
