

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION – WINTER • 2014

Subject Code: 150905

Date: 10-12-2014

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 the properties of SF₆ gas in recent developments of Circuit Breaker. **07**
(b) Explain Slepian's theory of arc interruption and discuss its limitation. **07**
- Q.2** (a) With neat circuit diagram explain restriking and recovery voltage in brief. **07**
(b) Explain current chopping in circuit breaker. **07**
- OR**
- (b) Give classification of Circuit Breakers. Describe with neat sketch Air-Break Circuit Breaker. **07**
- Q.3** (a) Describe the working principle of axial air blast circuit breaker and explain why resistance switching is used with this type of circuit breaker. **07**
(b) Explain advantages of air blast circuit breaker over the oil circuit breaker. **07**
- OR**
- Q.3** (a) Write short note on minimum oil circuit breaker. **07**
(b) Describe the construction operating principle and application of vacuum circuit breaker. **07**
- Q.4** (a) Explain the Direct testing & Indirect testing of the circuit breakers. **07**
(b) Write short note on rating of circuit breaker. **07**
- OR**
- Q.4** (a) Describe the Temperature rise Test and Mechanical Test (Endurance Test) of HVAC Circuit Breaker. **07**
(b) Explain the equipments used in Testing station of the circuit breakers. **07**
- Q.5** (a) Write a short note on the properties of oil used for circuit breaker. **07**
(b) Explain the methods of increasing arc resistance. **07**
- OR**
- Q.5** (a) Write a short note on HVDC circuit breaker. **07**
(b) Discuss the performance of circuit breaker when capacitive current is interrupted. **07**
