

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-V • EXAMINATION – WINTER 2013**

**Subject Code: 150905****Date: 11-12-2013****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 & Maintenance of arc. **07**  
 (b) Write short note on minimum oil circuit breaker. **07**
- Q.2** (a) Describe in detail the ratings of a circuit breaker. **07**  
 (b) Discuss the energy balance theory of arc interruption in circuit breaker. **07**
- OR**
- (b) Draw and explain the essential parts of SF6 circuit breaker. **07**
- Q.3** (a) Discuss the following term relation to circuit breaking. **07**  
 (1) Rated Breaking Capacity.  
 (2) Rated Making Capacity.  
 (3) Rated Operating Duty.  
 (b) Write a short note on factors affecting performance of air blast circuit breaker. **07**
- OR**
- Q.3** (a) Define the term “switchgear” and describe the voltage distribution in multi-break circuit breakers in ABCB. **07**  
 (b) Explain the construction, working principle, merits and demerits of Air break circuit breakers. **07**
- Q.4** (a) Describe the construction operating principle and application of vacuum circuit breaker. **07**  
 (b) Explain the D.C. Circuit Breakers. **07**
- OR**
- Q.4** (a) Draw a basic short circuit testing plant of circuit breaker **07**  
 (b) Explain the equipments used in Testing station of the circuit breakers. **07**
- Q.5** (a) Discuss the performance of circuit breaker when capacitive current are interrupted. **07**  
 (b) Write a short note on current chopping. **07**
- OR**
- Q.5** (a) Explain resistance switching. **07**  
 (b) Explain the Direct testing & Indirect testing of the circuit breakers. **07**

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