

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-Vth Examination December 2010****Subject code: 150905****Subject Name: SWITCHGEAR****Date: 20 /12 /2010****Time: 03.00 pm - 05.30 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) Discuss The Following Term Relation to Circuit Breaking. **07**
(1) Rated Breaking Capacity.
(2) Rated Making Capacity.
(3) Rated Operating Duty.

- Q.2** (a) Explain Low Resistance Arc Interruption Theories. **07**
(b) In Connection with Switchgear Clearly explain the Significance of the term **07**
RRRV and Calculate the RRRV and Frequency of Oscillations for the
Following Test Data:-
(1) Time to Reach the Peak Restriking Voltage is 50 Micro second.
(2) The Peak Restriking Voltage is 110 KV.

OR

- (b) Explain The Duties of Switchgear. **07**

- Q.3** (a) Explain The Construction, Working Principle ,Merits and Demerits of Air **07**
Break Circuit Breakers.
(b) Explain The Construction, Working Principle ,Merits and Demerits of Air **07**
Blast Circuit Breaker.

OR

- Q.3** (a) Explain The Modification of Circuit Breaker Duty By Shunt Resistors and **07**
Series Resistors.
(b) Explain The Construction, Working Principle ,Merits and Demerits of **07**
Minimum Oil Circuit Breaker.

- Q.4** (a) Explain The Properties of SF₆ gas in Recent Developments of Circuit **07**
Breaker.
(b) Draw and Explain the Essential Parts of SF₆ Circuit Breaker. **07**

OR

- Q.4** (a) Explain the D.C. Circuit Breakers. **07**
(b) Explain The Construction, Working Principle ,Merits and Demerits of **07**
Vacuum Circuit Breakers.

- Q.5** (a) Classify The Different Testing Carried Out On Circuit Breakers and Explain **07**
Any Two of Them.
(b) Explain the Equipments Used in Testing Station of the Circuit Breakers. **07**

OR

- Q.5** (a) Explain the Direct Testing And Indirect Testing of the Circuit Breakers. **07**
(b) Explain the Current Chopping. **07**
