

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 162403

Date: 25/11/2011

Subject Name: Switch Gear & Fault Analysis

Time: 10.30 am -1.00 pm

Total marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Notations used have usual meaning.

- Q.1** (a) Explain zones of protection with illustration. **07**
(b) Discuss the types of faults in power system. **07**
- Q.2** (a) Explain working of Air Blast circuit breaker with neat diagram. **07**
(b) Explain arc phenomena in circuit breaker. **07**
- OR**
- (b) Describe resistive switching. **07**
- Q.3** (a) Explain SF6 circuit breaker with neat diagram **07**
(b) Explain arc extinction methods briefly in circuit breaker **07**
- OR**
- Q.3** (a) Write short note on current limiting reactor. **07**
(b) Explain working principle of Electromagnetic attraction type relay. **07**
- Q.4** (a) Write a short note on Buchholz relay. **07**
(b) What are the different types of fuses? Discuss the construction and working principle of HRC fuse. **07**
- OR**
- Q.4** (a) Explain the working principle of induction type electromagnetic relays. **07**
(b) Compute the symmetrical components of the three phase voltages. **07**
 $V_A=100\angle 0^\circ$, $V_B=110\angle -100^\circ$ and $V_C=115\angle 110^\circ$
- Q.5** (a) What are the causes of unsymmetrical faults in power systems? Derive an expression for the fault current for single line to ground fault. **07**
(b) Explain different characteristics of over current relay. **07**
- OR**
- Q.5** (a) Draw and explain basic block diagram of static relay. **07**
(b) Obtain an expression for restriking voltage transient. **07**
-