

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI EXAMINATION – WINTER 2015

Subject Code:162403**Date:08 /12/ 2015****Subject Name: Switch Gear & Fault Analysis****Time:2:30pm to 5:00pm****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) Define 'fault' in power system. Enlist the causes of fault. Enumerate the various types of fault. How can be minimized the fault? **07**
 (b) Discuss the necessity of protection system and explain fault clearing process. **07**
- Q.2** (a) Explain the construction and working of HRC fuse. List the advantages and disadvantages of HRC fuse. Justify the use of silver for the fuse - link. **07**
 (b) Write a comprehensive note on Auto - reclosure. **07**
- OR**
- (b) Discuss on present trend in choice of circuit breakers. **07**
- Q.3** (a) Discuss on Sub-station equipment's and its functions. **07**
 (b) Explain the principle of current limiting reactors. Explain the location of series reactors with necessary diagram. **07**
- OR**
- Q.3** (a) Illustrate fault analysis of unloaded synchronous generator. **07**
 (b) Discuss on positive sequence network and negative sequence network of three phase alternator. Also explain the single line to ground fault on unloaded three phase alternator at rated terminal voltage. **07**
- Q.4** (a) Explain current interruption in ACCB. **07**
 (b) Discuss on Resistance Switching & Current Chopping with necessary diagram. **07**
- OR**
- Q.4** (a) List various types of Isolator. Explain Earth-switches and their interlocking. **07**
 (b) Explain construction and working of electromagnetic induction disc relay. Explain Plug – setting and Time – setting in induction disc relay. **07**
- Q.5** (a) Explain SF₆ circuit breaker with neat and clean diagram. **07**
 (b) Explain Vacuum circuit breaker. **07**
- OR**
- Q.5** (a) Discuss on microcontroller based digital relay **07**
 (b) Discuss on working principle of thermal relay. **07**
