

Code: 9A02703

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

**SWITCH GEAR & PROTECTION**

(Electrical &amp; Electronics Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) What are CB ratings and specifications of circuit breakers?  
(b) Explain about resistance switching in circuit breaker.
- 2 (a) Explain construction and operation of air blast circuit breaker with neat sketch.  
(b) Explain construction and operation of SF<sub>6</sub> circuit breaker with neat sketch.
- 3 (a) What are the functional characteristics of protective relays?  
(b) Explain the construction and operation of induction type relay with neat sketch.
- 4 (a) Write the advantages and disadvantages of microprocessor based relays.  
(b) Draw the block diagram for distance relay and its flow chart.
- 5 (a) Explain the protection of generator against stator faults.  
(b) Explain the restricted earth fault protection in alternator.
- 6 (a) A three phase transformer has a voltage ratio of 33 kV: 6.6 kV and is star/delta connected. The rating of C.T at 6.6 kV side is of 500/5 in each phase. What must be the ratio of protective C.T on H.V side?  
(b) Describe with the aid of diagram of connections for Merz price circulating current system for the protection of transformers.
- 7 (a) Explain about the protection of feeder using over current relays.  
(b) Explain about carrier current protection scheme.
- 8 Write short notes on:  
(a) Insulation coordination.  
(b) Valve type and zinc oxide lightning arrestors.

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