R09

Code: 9A02703

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

SWITCH GEAR AND PROTECTION

(Electrical & Electronics Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain how an arc is imitated and sustained is a circuit breaker when the circuit breaker contacts separate.
(b) How its circuit breaker rating and specifications are fixed? Explain in detail.

2 (a) Discus operation of minimum oil circuit breaker.
(b) Explain working of vacuum circuit breaker.

3 (a) Explain working of direction and distance relays.
(b) Elucidate construction details of attracted armature and induction type relays.

4 (a) Explain working of microprocessor based relay with suitable diagram.
(b) Explain amplitude and phase comparators.

5 (a) Explain restricted earth fault protection in generations.
(b) Explain protection of generators in abnormal conditions.

6 For a 100 MVA, 132 kV/6.6 kV power transformer with delta-star connections, obtain the number of turns each current transformer should have, for the differential protection scheme to circulate a current of 5 A in the pilot wires.

7 (a) Discuss 3-zone protection using distance relays in transmission lines.
(b) Explain how to protect bus bars in transmission lines.

8 (a) Explain Valve type and Zinc-oxide lightning arresters.
(b) Discuss insulation coordination.

*****