

Roll No.:.....

National Institute of Technology, Delhi

Name of the Examination: B. Tech.

Branch : Electrical & Electronics Engg.

Semester : 6th

Title of the Course : Switch Gear and Protection

Course Code : EEL 352

Time: 1.5 Hours

Maximum Marks: 25

Note : 1. Answer all the questions.

2. Each question carries 5 marks.

4. Do not write anything on the question paper except Roll number

1. In a 400 kV system, the reactance and capacitance up to the location of circuit breaker is 10 ohms and 0.05 microfarad, respectively. A resistance of 600 ohms is connected across the contacts of the circuit breaker. Determine (a) natural frequency of oscillations, (b) damped frequency of oscillation, (c) critical value of resistance which will give no transient oscillations.
2. In short circuit on a 3 pole, 110 kV circuit breaker, the following observations are made: p.f. of fault 0.4, recovery voltage 0.85 times full line value, the breaker current is symmetrical, frequency of oscillations of restriking voltage 15 kHz. Assuming neutral is grounded and the fault is not grounded. Determine average RRRV.
3. Which type of faults are taken into account while determining the rating of the circuit breaker? What are symmetrical fault current and unsymmetrical fault current? Which type of fault causes them?
4. What are the different types of distance relays? Compare their merits and demerits. Discuss their fields of applications.
5. Explain the Constriction and working of shaded pole type induction relay. What are its advantages and disadvantages?