

Exam.Code:0935
Sub. Code: 6668

2074
B.E. (Electrical and Electronics Engineering)
Fifth Semester
PC-EE-501: Power System - II

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part. Assume any missing data.

x-x-x

1. (a) Write advantages of symmetrical components of currents and voltages.
- (b) Explain function of bias coil in differential relay.
- (c) Define making and breaking capacity of circuit breakers.
- (d) Define step voltage and touch voltage.
- (e) Draw zero sequence circuit of 3- ϕ , Δ -connected generator.

(5x2)

PART-A

2. (a) What are overreach and under reach of relays? How these can be overcome?
- (b) Generators A and B are identical and are rated 13.8 kV, 21 MVA and have a transient reactance of 30% at their own MVA base. The tie-line is 50 miles long having reactance of 0.848 Ω /mile. The three phase fault is assumed at 20 miles from station A. Find short circuit MVA. (5, 5)
3. Discuss in detail Merz-Price protection scheme for transformer protection using differential relays. Draw diagrams wherever necessary. Write advantages and disadvantages of this scheme. (10)
4. (a) What is an HRC fuse? Compare an HRC fuse with a circuit breaker as interrupting device.
- (b) What are static relays? List their advantages. Explain static differential relay. (5,5)

P.T.O.

(2)

PART-B

5. (a) An overcurrent relay of current rating 5A and setting 150 % is connected to the secondary of C.T. of ratio 300:5. Calculate the current in lines for which the relay picks up.
- (b) Discuss the phenomenon of current chopping and resistance switching in circuit breakers. (5,5)
6. (a) Write advantages of neutral grounding in power system. Discuss different types of it.
- (b) Discuss different internal and external causes of over voltages in power systems. (5,5)
7. (a) Explain the role of ground wires in power system. Discuss the significance of protection angle of ground wire.
- (b) Discuss working and operation of air-blast circuit-breaker and major tests to be performed to evaluate the various ratings. (5,5)

x-x-x