Ref. No. :EX/PE/PE/PC/B/T/412

B. E. POWER ENGG. 4TH YEAR 1ST SEMESTER EXAMINATION 2024

Protection and Switchgear

TIME: THREE HOURS **FULL MARKS:100**

1. Describe switching over voltage. 20 [CO1]

OR

1. Describe restriking voltage. 20 [CO1]

2. a) Describe different types of back up relay? 8 [CO2]
b) What are the fundamental requirements of protective relay? 12 [CO2]

3. a) Describe arc formation in a circuit breaker. 8 [CO3]
b) Give a detail description of air blast circuit breaker. 12 [CO3]

OR

3. a) Why circuit breaker is necessary at every switching point in the substation? 8 [CO3]
b) Give a detail description of SF_6 breaker 12 [C03]

4) Give a detail description of alternator protection. 20 [CO4]

OR

4. a) Give a detail description of transformer protection. 10 [CO4]
b) Describe lightning arrester. 10 [CO4]

5. The power system shown in Fig. 5 has a dead short circuit at the mid point of the transmission line. Find the fault current for a single line-to-ground fault. Both generator G and motor M are operating at their rated voltage. Neglect prefault current. Reactances are given in pu on the same base. 20 [CO5]

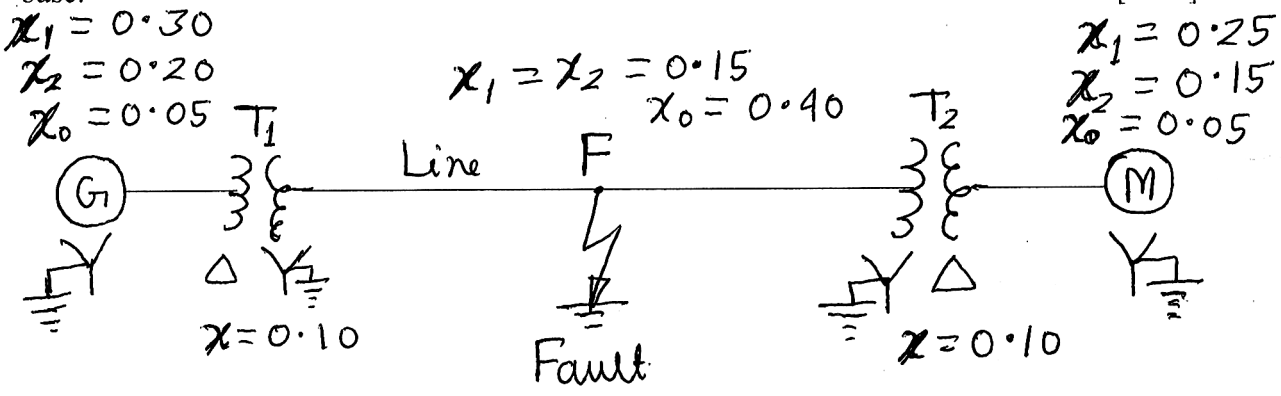

Figure 5