

Roll No.

Total No. of Pages : 01

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M.Tech. (Electrical Engineering / Power Systems and Renewable Energy)
(Sem.-1)

ADVANCED POWER SYSTEM PROTECTION

Subject Code : PSRE-103B/21

M.Code : 91512

Date of Examination : 23-01-23

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.

2.Each question carries TWELVE marks.

1. Draw and explain the block diagram of microprocessor-based impedance relay. Explain its operation, with a flow chart.
2. What is the significance of back-up protection and explain the types of relays used for back-up protection? What are the merits and demerits of static relays?
3. Explain the impact of power surges/power swings on the performance of distance relays. Also, draw and explain the impedance characteristics during faults.
4. Distinguish between polarity detector and zero crossing detectors with relevant schematics.
5. Distinguish between rectifier bridge circulating and opposed voltage type amplitude comparators.
6. Explain the principle of operation of numerical relay. Explain **any one** algorithm signifying its protection characteristics. Draw the appropriate schematics.
7. Explain the following pilot-wire protection schemes: Circulating current scheme, Opposed voltage scheme, translay protection and translay scheme.
8. Realize the angle admittance (MHO) relay using amplitude comparator. Draw the relevant schematics.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.