Roll No. | | | | | | | | | | | | |

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech (Pow Engg.) (Sem.–2)

POWER SYSTEM PROTECTION

Subject Code : PEE-509

Paper ID : [E0489]

Time : 3 Hrs. Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT question.
2. Each question carries TWENTY marks.

Q1. a) Explain the types of comparators used for static relaying and its duality for different applications.

b) Explain the working of different types of coincidence phase comparator with relevant diagrams.

Q2. a) Define 'under reach' and 'over reach'. Why does these occur in the system and how do they effect the performance of distance relays?

b) Explain the static Reactance Relay using phase comparator for three zone distance protection scheme.

Q3. a) Explain phase comparison carrier current protection scheme in brief with relevant diagrams.

b) Explain microwave channels used for protective relaying and list its applications.

Q4. a) Explain the ratio correction factor in CTs and derive the expression for the same.

b) Explain CT burden and how is it specified. Explain how saturation affects the accuracy of CTs.

Q5. a) Explain the working principle of Buchholz relay and enumerate the inferences drawn from Dissolved Gas Analysis.

b) Explain the percentage differential protection scheme for stator of an alternator.

Q6. a) Differentiate the electromagnetic and static percentage differential relay.

b) Explain the bias setting of percentage differential relay. Enumerate its advantages over simple differential relay.

Q7. a) Explain differential protection of a bus using high impedance differential relay,

b) Explain the numerical protection of busbar.

Q8. a) Describe the construction and working principle of Puffer type SF_6 circuit breaker with the help of appropriate diagram.

b) Enumerate the problems encountered in DC circuit breakers and suggest the remedies for the same.