T.E.(Electrical Engineering)

POWER SYSTEM - II

(2019Pattern) (Semester-VI)

1. Prove that per unit impedance of transformer on primary and secondary side is same.
2. Derive static load flow equations for n-bus system.
3. A 15 MVA, 6.6 kV, 3-phase star-connected alternator having a reactance of 20% is connected through a 10 MVA, 6.6 kV/33 kV transformers of 10% reactance to a transmission line having a resistance and reactance per conductor per kilometer of 0.2 Ω and 1 Ω respectively. Fifty kilometers along the line, a short-circuit occurs between the three conductors. Find the current fed to the fault by the alternator. Choose generator ratings are as base values.
4. State the advantages of per unit system in power system analysis.
5. Write short note on L-G, and L-L-G fault analysis.
6. Explain Classification and components of HVDC system
7. A three phase 11kV, 10MVA, generator has a direct axis steady state reactance of 20%. It is connected to a 3MVA transformer having 5% leakage reactance and ratio of 11/33kV. The 33kV side is connected to a transmission line having 30 ohm reactance. A three phase fault occurs at other end of transmission line. Calculate steady state fault MVA and current supplied by generator assuming no load prior to the fault. Take base of 11kV, 5MVA on generator.
8. Write advantages and limitations of HVDC transmission.
9. Explain the use of Single line diagram, Impedance and reactance diagrams.
10. Explain sub-transient, transient and steady state current and impedances for 3-phase short-circuit analysis of unloaded alternator.
11. Draw the complete single line diagram of HVDC system showing all components and elaborate any three components in detail.
12. Write short note on HVDC control methods.