## Power System Analysis I

Three-Phase Power Systems

**P1:** The figure below shows the one-line diagram of a three-phase power system. The generator is supplying the rated power at 0.9 power factor lagging at 5% **below** the rated terminal voltage. Assume that motors absorbing equal active and reactive powers.

- a) Draw the per-unit impedance diagram of the system including the transformer phase shifts. Use the ratings of the generator as the base values.
- b) Determine the voltage at the Motor2 terminals.
- c) Determine the total real and reactive power absorbed by the Motor2 in per-unit and in real values.



## **Answers:**



