

# ELEC-E8413 POWER SYSTEMS

## EXAM 3.2.2020

1. Equal area criterion in assessing the transient stability of power systems.
2. Explain the modeling of electrical loads using the (SLY-type) index based load variation curves. What are the error sources?
3. Explain the regulations and means of limiting touch voltages in distribution networks.
4. Calculate the positive sequence reactance / km of a three phase power line having conductors in the same horizontal plane. The conductor diameter is 7 mm and the distance between outer conductors and the middle conductor is 1.1 meters. The height of the line is 10 meters and the soil resistivity is 2300  $\Omega\text{m}$ .
5. Explain the origin and means of mitigation of overvoltages when a) interrupting a capacitive current, b) interrupting a small inductive current.

Answers accepted in English, Finnish and Swedish.

Questions are available only in English.