You can answer in English or in Finnish

1. Are the following statements true?
   You have three options to be selected (Y=yes / N=no / DK = don't know). Right answer means one point (+1p) and the wrong answer one minus point (-1p). If you choose the option DK (= don't know), you will get zero point (0p).

   a) A microgrid can be determined as a segment of Smart Grid with intended island operation capability.

   b) Network tariff is directly dependent on customer location in the network.

   c) One essential feature of Smart Grids is that the power flows are controllable and multi-directional.

   d) In Nordic electricity market there is only one common electricity exchange for the wholesale market, but independent transmission system operators (TSOs) in each country.

   f) In meshed (i.e. ring) configuration relay protection practices are simple and power losses are higher than in radial configuration of power grid.

   g) Distributed generation along the medium voltage feeder have no effect on the voltage level of the feeder.

2. Define shortly the following terms or concepts (1.5 p/each)
   a) Day-ahead (spot) market
   b) Time-of-use pricing
   b) HEMS
   c) Virtual Power Plant (VPP)

3. List

   a) motivations and incentives of distributed generation (DG) (3p)

   b) drivers and barriers for electrification of road transportation (3p)

4. Describe briefly

   a) roles of electricity retailer and DSO (3p)

   b) the reclose sequence of MV feeder protection relay for temporary and permanent faults (3p)