

- 1) Explain shortly the following terms dealing with distribution automation:
  - a) DMS
  - b) PLC
  - c) IEC61850
  - d) AMR
  - e) SCADA
- 2) Explain typical feeder protection solution, which can be applied in radially operated and neutral isolated medium voltage network. Which protection functions are used, what are the principles in definition of relay settings?
- 3) Describe briefly, how the development of distribution automation has changed the following operational processes:
  - a) Location of short circuit faults in medium voltage network
  - b) Handling of low voltage network faults
  - c) Customer service during fault situations
- 4) Calculate the reliability indices SAIFI, SAIDI and MAIFI in the following simple feeder. Calculate the indices also in case when the disconnecter is remote controlled (switching time is 5 minutes) and in the case when the disconnecter is replaced by a circuit breaker. What else method could be used to evaluate reliability?

