

- 1) Explain shortly the following terms dealing with distribution automation:
 - a) auto reclosing
 - b) directional relay
 - c) gas relay
 - d) DMS
 - e) IEC61850
- 2) Remote control of disconnectors is traditional feeder automation function. Explain, what else functions there could be in feeder level (disconnector stations, MV/LV substations, LV network) as part of modern distribution automation system.
- 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 disconnector is remote controlled, which means that switching time is 5 minutes. What else method could be used to evaluate reliability?

Failure rate = 5 faults / 100 km, a

Temporary failure rate = 40 faults / 100 km, a

Switching time of disconnector 1 h, repair time 3 h

