

Roll No.

Total No. of Pages : 01

Total No. of Questions : 08

**M.Tech. (EE) EI-II (2018 Batch) (Sem.-1)**  
**SCADA SYSTEM AND ITS APPLICATIONS**

**Subject Code : MTEE-104C-18**

**Paper ID : [75223]**

**Time : 3 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

1. **Attempt any FIVE questions out of EIGHT questions.**
  2. **Each question carries TWELVE marks.**
  3. **Make use of diagrams to explain.**
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1. What is data acquisition system? Explain the working of supervisory control data acquisition system. How SCADA is different from DAS? What are the advantages and applications of SCADA system? Discuss the evolution of SCADA system. (12)
  2. a) How the inputs are monitored in the SCADA system? How does SCADA system helps in taking the control action when any of the input changes from set point? Explain with suitable example. (6)  
b) What do you understand from utility automation? Briefly discuss the application of SCADA in utility automation. (6)
  3. a) What is RTU? Explain the schemes for installing Remote terminal units. (6)  
b) Explain different components of SCADA system with the help of eat diagram. (6)
  4. What is the architecture of SCADA systems used in various industries? Elaborately explain different available architectures of SCADA. What are the applications of different architectures? Discuss with appropriate example. (12)
  5. a) What is single unified standard architecture of IEC 61850? Explain. (7)  
b) What is SCADA server? Also discuss IED, intelligent electronic devices. (5)
  6. What is the difference between wired and wireless network? How does these SCADA systems communicate with inputs and outputs when are having wired connectivity or wireless connections? (12)
  7. a) What are the applications of SCADA kin transmission and distribution sector? (6)  
b) What are the applications of SCADA systems in improvement and analysis of different processes in process industry specially oil and gas? (6)
  8. a) What is the role of fibre optic cable in signal communication in the industry? (6)  
b) What are the open standard communication protocols? Where they are used? (6)