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B TECH
(SEM VIII) THEORY EXAMINATION 2017-18
SCADA

Time: 3 Hours

Total Marks 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A**1. Attempt all questions in brief.****2 x 10 = 20**

- a) Explain why SCADA in needed?
- b) What do you understand by PLCC?
- c) What are the advantages of report preparation in SCADA?
- d) What is time tagged data?
- e) Explain transient faults.
- f) How event reporting is done in SCADA.
- g) What do you understand by RTU?
- h) What do you mean by operator console?
- i) What are hard real time operating systems?
- j) Explain modularization of software.

SECTION B**2. Attempt any three of the following:****10 x 3 = 30**

- a) Explain the general structure of SCADA system and its components.
- b) Explain Data acquisition mechanism and data concentrators. What data is commonly acquired?
- c) What do you mean by Data Acquisition in SCADA? Explain monitoring and event processing.
- d) What do you mean by mimic diagrams in SCADA system? Explain its different functions and advantages.
- e) What are the different system classes? Explain redundant dual processor and multicontrol centers.

SECTION C**3. Attempt any one part of the following:****10 x 1 = 10**

- (a) With the help of block diagram explain the power system hierarchical structure.
- (b) What is various communication channels used in SCADA?

4. Attempt any one part of the following:**10 x 1 = 10**

- (a) Explain calculation and report preparation of data in SCADA.
- (b) What are the types of status indication? Explain Measured values and energy values.

5. Attempt any one part of the following:**10 x 1 = 10**

- (a) Explain Man machine communication system and its components in detail.
- (b) Explain alarms, event loggers and VDUs functions in man machine communication system

6. Attempt any one part of the following:**10 x 1 = 10**

- (a) What are functions performed at a centralized energy management system? Explain in detail.
- (b) Explain load management and production control in energy management center.

7. Attempt any one part of the following:**10 x 1 = 10**

- (a) Explain control functions of transformers, capacitors and ON and OFF of control lines in SCADA.
- (b) What are the requirements of real time operation of system?