IC30C2 - Pre-Instructional Survey

Name: _____ Date: _____

1. What is the factor that makes SCADA different from other process control systems?

2. List two types of benefits that you would expect to gain from applying SCADA to your facility.

3. How many RTUs do you need to justify a SCADA system?

4. How does an RTU communicate with an MTU?

5. How would an HMI obtain real-time values from an RTU made by another manufacturer?

6. Suggest how environmental monitoring can be enhanced by SCADA.

7. Which industries are presently using SCADA applications extensively?

8. How can improvements in communication between RTUs and MTUs extend the opportunity for SCADA to be applied to a facility?

9. What two general types of field devices interface with RTUs?

10. Why would you not want to use SCADA in a safety system application?

IC30C2 - Pre Instructional Survey Answers

1. What is the factor that makes SCADA different from other process control systems?

   SCADA systems operate by using Supervisory Control, rather than Continuous Control, over the process. They use this concept to control geographically large processes.

2. List two types of benefits that you would expect to gain from applying SCADA to your facility.

   1. Faster response to out of limits conditions
   2 Ability to integrate the process control more effectively.
   3. Better paper trail of data gathered

3. How many RTUs do you need to justify a SCADA system?

   SCADA systems can be justified by as few as one RTU.

4. How does an RTU communicate with an MTU?

   RTUs communicate with low speed digital serial messages modulated onto carrier waves, usually radio.

5. How would an HMI obtain real-time values from an RTU made by another manufacturer?

   Either by using a special software driver to the RTU or by using OPC DA.

6. Suggest how environmental monitoring can be enhanced by SCADA.

   Because environmental monitoring points are usually scattered over a wide area or length (river), they are difficult to access. Using a SCADA system to gather data from points in such a system is economic. Note that if the entire system does nothing except gather information, it is not a SCADA system, but is a data telemetry system.

7. Which industries are presently using SCADA applications extensively?

   The two industries that use SCADA most extensively are Oil/Gas Production and Electric Generation/Transmission. Pipeline operation is third.

8. How can improvements in communication between RTUs and MTUs extend the opportunity for SCADA to be applied to a facility?

Communication is one of the expensive components of SCADA systems. Significantly reducing the cost of this component would improve the economics of potential systems.

9. What two general types of field devices interface with RTUs?

Field Sensors and Field Actuators.

10. Why would you not want to use SCADA in a safety system application?

It is inherent in SCADA systems that the communications system is a low reliability component. You cannot depend on SCADA communications to operate when they are needed. SCADA communication is slow.