

FG07 - Pre-Instructional Survey

Name: _____ Date: _____

1. Which type of drawing provides detailed piping and process information, in addition to instrumentation and control information?
 - a. Loop Wiring Diagrams
 - b. Piping and Instrument Diagrams (P&IDs)
 - c. SAMA Diagrams
 - d. Wiring Schedules

2. Which variable does the control system attempt to hold at a constant value?
 - a. Final Control Element
 - b. Manipulated Variable
 - c. Controlled Variable
 - d. Disturbance

3. In which of the following types of processes is material first added to a vessel, some operation takes place, and then material is removed from the vessel?
 - a. Batch
 - b. Continuous
 - c. Discrete Parts Manufacturing
 - d. Open Loop

4. If a standard electronic pressure transmitter has a range of 50 to 250 psig (345 to 1724 kPa gage), and the pressure is 150 psig (1034 kPa gage), what is the output in mA?
 - a. 4 mA
 - b. 12 mA
 - c. 13.6 mA
 - d. 50 mA

5. Which level measurement is based on the weight of the liquid?
 - a. Ultrasonic
 - b. Pressure transmitter
 - c. Capacitor Probe
 - d. Radioactive

6. Which of the following is a measurement unit for volumetric flow measurement?
 - a. Pounds per hour
 - b. Gallons per minute
 - c. Kilograms per hour
 - d. Pounds per minute

7. Which of the following flow measurement devices requires square root extraction?
 - a. Orifice plate
 - b. Magnetic flow meter
 - c. Coriolis flowmeter
 - d. Vortex shedding flowmeter

8. Which of the following temperature measurement devices is based on change in resistance with temperature change?
 - a. Thermocouple
 - b. RTD
 - c. Thermometer
 - d. Bimetallic element

9. Which of the following is an example of a Final Control Element?
 - a. Damper
 - b. Transducer
 - c. Transmitter
 - d. Manipulated variable

10. Which of the following types of valves has the highest gain when the valve is nearly closed?
 - a. Quick opening
 - b. Equal percentage
 - c. Fail open
 - d. Linear

11. A controller in which an increase in output to the manipulated variable results in a decrease in the controlled variable is called?
 - a. Reverse acting
 - b. Direct acting
 - c. Fail safe
 - d. Non-linear

12. Which of the following control modes causes the controller output to increase or decrease at the same time the input increases or decreases?
 - a. Integral
 - b. Proportional
 - c. Derivative
 - d. Reset

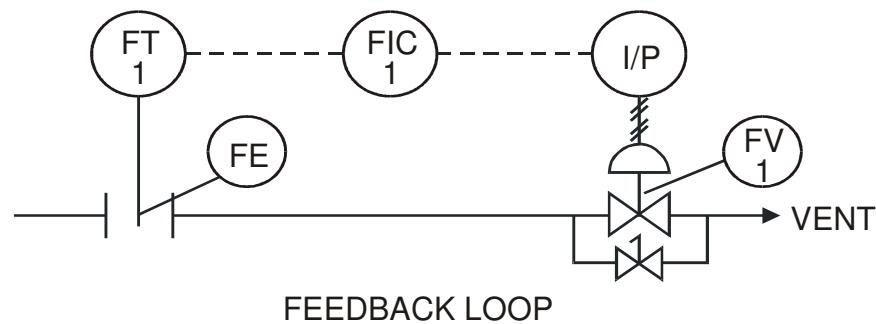
13. Which of the following terms describe a control strategy in which the output of one controller is used to manipulate the setpoint of another controller?
 - a. Ratio
 - b. Cascade
 - c. Feedforward
 - d. Fail safe

14. Which of the following types of control systems is typically programmed in ladder logic:
 - a. Programmable Logic Controllers (PLC)
 - b. Distributed Control Systems (DCS)
 - c. Single Loop Digital Controllers (SLDC)
 - d. Analog Electronic Controllers

15. You are calibrating an electronic D/P transmitter. The positive terminal of the transmitter should be connected to the:
 - a. negative terminal of the power supply
 - b. positive terminal of the power supply
 - c. positive terminal of the multimeter
 - d. positive terminal of an ohmmeter

16. When performing a zero-based calibration on a D/P transmitter, the low pressure port of the transmitter:
 - a. should be closed
 - b. should be vented to the atmosphere
 - c. should be connected to the high pressure air supply
 - d. should be connected to a 2.04 "Hg vacuum source

17. During a calibration, you notice that the “as found” measurements are always 5% less than the “ideal” measurement. This is an example of:
- span error
 - zero shift error
 - non-linearity
 - hysteresis
18. When checking accuracy of a type-J thermocouple, using a temperature calibrator, the white thermocouple wire should be attached to the:
- negative input of the calibrator
 - positive input of the calibrator
 - negative output of the calibrator
 - positive output of the calibrator



19. From the figure above, the output of FT-1 is a:
- electric signal
 - hydraulic signal
 - pneumatic signal
 - capillary signal
20. From the figure above, FIC-1 is a:
- controller.
 - control valve
 - flow meter
 - floppy integrated circuit

FG07 - Pre-Instructional Survey Answer Sheet

1. b
2. c
3. a
4. b
5. b
6. b
7. a
8. b
9. a
10. a
11. a
12. b
13. b
14. a
15. b
16. b
17. b
18. b
19. a
20. a