

TS18 - Pre-Instructional Survey

1. Rising Stem valves belong in which group?
 - a. Rotary Motion
 - b. Linear Motion
 - c. Sliding Motion
 - d. Motion Control

2. Control valve positioning devices can be:
 - a. Pneumatic
 - b. Electronic
 - c. Hydraulic
 - d. All of the above

3. Fail-safe conditions in a valve happen when:
 - a. Electrical signal is lost
 - b. Actuation energy is lost
 - c. Pneumatic signal is lost
 - d. Control system signals a failure

4. Control valve flange ratings are consistent with:
 - a. Instrument specifications
 - b. DCS specifications
 - c. Piping Specifications
 - d. Process physical properties

5. The terms **Valve Trim** refers to:
 - a. The stem, plug and seat
 - b. The orientation of the actuator on the body
 - c. The control valve color
 - d. The accessories mounted on the valve

6. Valve packing selection is based on:
 - a. Stiction forces generated
 - b. The pressure drop across the valve
 - c. The size of the actuator
 - d. The operating properties of the process

7. Double seated valves are for which of the following?
- Diverging flow
 - Converging flow
 - Multi-ported operation
 - High pressure drop applications
8. Bench set is a term associated with:
- $\frac{1}{4}$ turn valves
 - Linear Motion valves
 - Spring-opposed diaphragm actuated valves
 - Fail-closed valves
9. Mechanical seating of valves is accomplished by:
- Adjusting the supply pressure
 - Adjusting the stem length
 - Adjusting the starting pressure
 - Adjusting the packing pressure
10. Solenoids can be 2-way, 3-way, 4-way, or 5-way?
- True
 - False
11. Double acting ON/OFF actuators require a 4-way solenoid for operation?
- True
 - False
12. Spring-opposed diaphragm actuators typical require full plant air pressure?
- True
 - False
13. Valve positioning devices are used to overcome:
- Packing friction forces
 - Differential pressure forces
 - Breakout forces
 - All of the above

14. I/P transducers perform which function?

- a. Convert 4- 20 mA to 6- 30#
- b. Convert 4- 20 mA to 3- 15#
- c. Convert current signals to pressure signals
- d. Convert voltage signals to pressure signals

15. Limit switches are typically identified on P&IDs as a/an:

- a. EV
- b. ZSC/ZSO
- c. LSO/LSC
- d. PSO/PSC

16. There is a two-stage phenomenon in liquid flow. The first stage is the formation of voids and cavities within the liquid system when the line pressure falls below the vapor pressure. The second stage is the collapse or implosion of these cavities back into an all-liquid state when the line pressure recovers above the vapor pressure and this stage is called:

- a. Cavitation
- b. Abrasion
- c. Erosion
- d. Flashing

17. Noise generation in a control valve can be the result of:

- a. High pressure drops
- b. Moisture in the air supply
- c. Loose packing bolts
- d. Low actuator stiffness

18. The CV rating of a valve is used:

- a. Calculate the flow thru a valve
- b. Calculate the Δp across a valve
- c. Calculate the % valve open
- d. All of the above

19. Valve flow characteristics can only be changed by:

- a. Changing the valve
- b. Changing the valve type
- c. Adding upstream restrictors

d. Changing valve plug mechanical configurations
20. Digital Valve Controllers

- a. Must always have a 4- 20 mA signal
- b. Must always have a HART digital signal
- c. Will always have a pneumatic output
- d. None of the above

21. DVCs are configured to:

- a. Monitor valve status
- b. Control the valve response to changing input signals
- c. Provide alarms status reports
- d. All of the above

22. DVCs can be configured with:

- a. The local touch panel
- b. Hand Held Communicator
- c. Blue tooth communications
- d. All of the above

23. DVCs can perform diagnostic procedures?

- a. True
- b. False

24. A regulator can be used to

- a. Monitor a process
- b. Control a process
- c. Report process alarm status
- d. Communicate with DCS systems

25. Regulator can be:

- a. Reducing pressure
- b. Back pressure
- c. Relief
- d. All of the above

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1. A
2. D
3. B
4. C
5. A
6. D
7. D
8. C
9. B:
- 10.A
- 11.A
- 12.B
- 13.D
- 14.C
- 15.B
- 16.A
- 17.A
- 18.D
- 19.D
- 20.D
- 21.D
- 22.D
- 23.A
- 24.B
- 25.D