Pre-Instructional Survey
TS03 V 2.5

Name: _____   Date: _____

1. In which of the following control strategies is a disturbance measured and effects compensated before they can cause the controlled variable to deviate from the setpoint?

    A. Feedforward
    B. Open loop
    C. Feedback
    D. Cascade

2. A transmitters steady state gain

    A. Is almost always linear and has little bearing on process control
    B. Has little effect on overall loop stability with respect to control
    C. Should be constant over the control range of the process
    D. Is usually compensated by self-tuning controllers

3. The time it takes to complete all continuous steps in an operating cycle performed by a PLC is known as:
    A. Update time
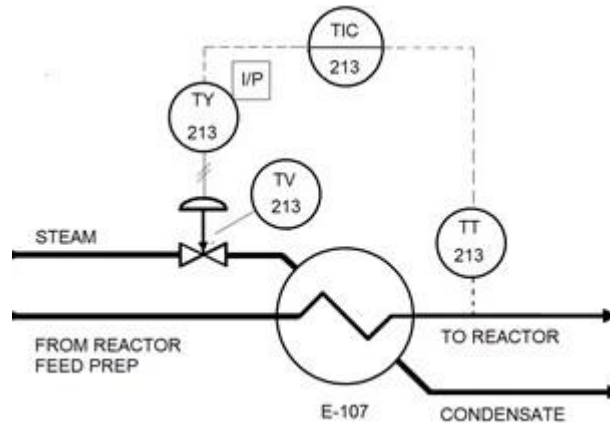   B. Scan time
    C. Poll time
    D. Zip time

4. Which of the following protection techniques is acceptable for equipment located in a Class I, Division 1 (Zone 0 or Zone 1) area?

    A. Explosion-proof apparatus and incendive equipment
    B. Explosion-proof apparatus and intrinsic safety
    C. Dust ignition-proof and incendive equipment
    D. Hermetically sealed and intrinsic safety

5. If you need an enclosure that resists corrosion and provides protection for outdoor use, dust, and hose-directed water, which type of enclosure would you select?

    A. Type 1 (NEMA 1)
    B. Type 4x (NEMA 4x)
    C. Type 12 (NEMA 12)
    D. Type 13 (NEMA 13)

6. How is PID defined in the phrase "PID control loop"?

   A. Proportional Instrument Device
   B. Piping Instrumentation Diagram
   C. Percentage Integration Delta
   D. Proportional Integral Derivative

7. Which PLC programming languages consists of logics, timers, and counters?

   A. Sequential Function Charts (SFC)
   B. Ladder Diagram (LD)
   C. Function Block Diagram (FBD)
   D. Structured Text (ST)

8. A binary number of 110110001110 has a hexadecimal equivalent of:

   A. 8FD.
   B. 97F.
   C. A9E.
   D. D8E.

9. A diagram that shows all electrical devices and wiring details specific to a particular physical location is commonly referred to as a(n) _____ diagram.

   A. Arrangement
   B. Termination
   C. Schematic
   D. Loop

10. A heat exchanger (as shown below) has steam as the manipulated variable to heat the controlled variable (feed stock), typically this calls for:

    A. AC valve and reverse acting controller
    B. AC valve and direct acting controller.
    C. AO valve and reverse acting controller
    D. AO valve and direct acting controller

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                                    TIC
                                    213
                          I/P
                  TY
                  213
                            TV
                            213
                                              TT
  STEAM                                       213

  FROM REACTOR                           TO REACTOR
  FEED PREP

                      E-107        CONDENSATE
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11. An HMI configured to communicate on a FAST Ethernet LAN will require a(n):

    A. FDDI MAU
    B. Token Ring adapter
    C. TCP/IP stack software
    D. Network Interface Port

12. What is the typical maintenance requirement for in-line magnetic flow meters?

    A. Impulse line leak detection
    B. Vibration analysis in span
    C. Cleaning and calibration
    D. Proof testing w/cal. Vat

13. Most standard control valves are subject to what range of hysteresis (percent to total stroke)?

    A. 0.5 to 1%
    B. 2 to 5%
    C. 8 to 10%
    D. 25 to 50%

14. A deterministic network when loaded to 70% capacity will:

    A. jabber
    B. beacon
    C. slow down
    D. block all traffic

15. During the design freeze phase of the project (development, deployment, operations, and maintenance) there are only three valid reasons to violate the design freeze, which one of the below is **not one** of those reasons:

    A. it won't work, and Plan B will work
    B. it will work but it is not a safe operation
    C. Plan B turns out to be somewhat better
    D. suggested change will give a 1000% return

16. Using the CPM (Critical Path Method) for project management, the CPM Chart provides you all information except:

    A. Importance of project tasks
    B. Project tasks to be performed
    C. Relationship between project tasks
    D. Sequence and duration of project tasks

17. The maximum particulate size specified by ISA 7.0 (1996) for plant instrument air is:

    A. 20 microns
    B. 40 microns
    C. 80 microns
    D. 100 microns

18. What buffer solution is used to standardize a pH meter?

    A. 4.0
    B. 7.0
    C.10.0
    D.12.0

19. The first step in the logical analysis method is to

    A. Repair (Replace) the problem
    B. Verify there is a problem
    C. Verify documentation
    D. Locate the problem

20. What does the term FOLPDT mean when referring to a process reaction curve?

    A. feed forward unit plus derivative time component
    B. dead time component plus an exponential component
    C. feedback options plus multi-derivative time component
    D. differential truncation plus Fourier transformation optimums

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1. A.
2. C.
3. B.
4. B.
5. B.

6. D.
7. B.
8. D.
9. D.
10. C.

11. D.
12. D.
13. B.
14. C.
15. C.

16. A.
17. B.
18. B.
19. B.
20. B.