Name:-------------------------------------

1.   The temperature range of a transmitter is 100 -300°F. The output signal range is 3-15 PSI. What would be the expected output signal for an input temperature of 175°F.

    a. 4.5 PSI
    b. 6 PSI
    c. 7.5 PSI
    d. 13.5 PSI

2.   What is the most common final control element in a continuous process plant?
    a. Damper
    b. Control Valve
    c. Gate Valve
    d. Vane

3.   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. 20 mA
    d. 50 mA

4.   Which of the following level measurements is based on the weight of the liquid?
    a. Ultrasonic
    b. Pressure transmitter
    c. Capacitor Probe
    d. Radioactive

5.   What powers a loop powered field device?
    a. Field devices cannot be loop powered as they need more than 20mA's to operate.
    b. A separate second mA signal is required to power up the transmitter.
    c. All field devices need external power.
    d. It is powered by part of the 4mA offset current signal.

6.   A magnetic flow meter determines the flow of a process material by measuring the _____ of the fluid.
    a. velocity
    b. density
    c. temperature
    d. volume

7.   The region between the limits within which a quantity is measured, received, or transmitted, expressed by stating the lower and upper limits is called the_____.
    a. span
    b. linearity
    c. zero
    d. range

Name:-------------------------------------

8. A closed loop feedback control system must have the minimum number of components or elements:
   a 3
   b. 2
   c. 4
   d. No minimum number
   e. Any number

9. The flow of water in a 6-inch pipe is measured with an orifice plate and differential pressure transmitter. At a flow rate of 200 GPM, the differential pressure is 35 inches of water. At a flow rate of 312 GPM, the differential pressure will be approximately equal to:
   a. 16.4 " wc
   b. 32.5" wc
   c. 85.4" wc
   d. 100" wc

10. Which of the following elements is designed to translate a pressure change to motion,.
   a. bellows
   b. bourdon tube
   c. diaphragm
   d. all of these

11. Which of followings is NOT an advantage for magnetic flowmeters:
   a. No Pressure Drop
   b. Wide range of Hydrocarbons
   c. bi-directional flow
   d. Accuracy

12. Which parameters you would prefer to know when you start to study a new type of instrument?

13. Draw an sketch and show main blocks inside a 4-20 mA transmitter:

Name:------------------------------------

14. Define following terms:

    - Smart Transmitter

    - Switch Hysteresis

    - Interlock\

    - Loop-Powered Transmitter

15. What is the usage of HART communicator?