

Name: **SOLUTION**

Reg. No: _____

1. The two classifications of industrial control systems are **Motion control** and **Process control**.
2. A closed loop industrial system typically uses **negative** feedback.
3. List two examples each for motion control system and position control system. (other than that discussed in the class)

Motion control system: CNC machine tool equipment, printing presses, packaging equipment

Process control system: Oil refining, Paper manufacturing

4. List atleast one example of a measurement device used in motion control application and one example for process control application.

Motion Control: speed sensor

Process Control: Throttle

5. Which of the following elements and signals of a control system do not exist in an open-loop configuration?
a) comparator **b) error signal** **c) feedback signal** d) measurement device
6. The set point typically remains unchanged in a _____ control system.
a) motion b) process **c) open-loop** d) none of above
7. The factor that upsets the manufacturing process being performed, causing a change in the controlled variable is referred to as **disturbance**.
8. List out the factors that cause process lag time.
Inertia, capacitance, resistance and dead time
9. Which of the following conditions are compensated for by using feed-forward control?
a) excessive lag time b) an error signal
c) large disturbances d) unmeasurable disturbances
10. Feed-forward control makes corrections for _____ disturbances, and feedback control makes corrections for _____ disturbances.
a) measurable , unmeasurable b) unmeasurable, measurable
c) measurable, measurable d) both (a) and (b)