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221542

4th Semester/Instrumentation & Control
Subject: Process Control

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 In a feedback system, the feedback signal is taken from:

a) Input b) Output
c) Controller d) Set point

Q.2 An example of a final control element is:

a) Thermometer b) Pressure sensor
c) Actuators d) Strain gauge

Q.3 A feedback control system

a) Measures output and feeds it back to input
b) Measures input only
c) Is always open loop
d) Does not need sensor

Q.4 In a PID controller, the 'D' stands for:

a) Derivative b) Diode
c) Direct d) Defined

Q.5 In a control loop, the value we want to maintain is called:

a) Output b) Set point

c) Disturbance d) Gain

Q.6 Which of the following is a type of control system?

a) Open loop b) Closed loop

c) Both A & B d) None of the above

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Write the name of all process variables in a process.

Q.8 Define manipulated variable.

Q.9 Expand PID.

Q.10 What is the difference between set point and output called?

Q.11 What is Measurement Lag?

Q.12 _____ system has feedback.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Explain the Cascade control system.

Q.14 Explain the working of Ratio control system with an example.

Q.15 Explain the basic building block of a process control.

Q.16 Explain the PI controller with their advantages and disadvantages.

Q.17 Write down the difference between Pneumatic and Hydraulic control system.

Q.18 Explain PD controller with their advantages.

Q.19 Explain the construction and working of Butterfly operated valve

Q.20 Define the pressure switches.

Q.21 Write a short note on Flapper Nozzle.

Q.22 Explain the working of P/I converter.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the propositional Integral derivative controller with their merits and demerits.

Q.24 Explain the working of Split range control system with an industrial example.

Q.25 Write a short note on any two

1. Limit switch
2. Ball valve
3. Interlocking and Sequencing Circuit