

Process Inst<sup>n</sup> System.

Q.P. Code :09985

Duration: 03 Hrs.

Total Marks: 80

Note:

Q. No 1 is compulsory

Attempt any THREE questions from Q No 2 to Q No 6.

Q.1) Attempt Any Five

20 M

- Explain with Example Process Lag and Distance Velocity Lag.
- Why Pneumatic instrumentation is preferred in processing plants?
- Explain Dead Time process & Smith predictor compensator.
- State significance of process control actions.
- Compare Feed forward Vs. Feedback control system
- Explain in brief Relative gain analysis.

Q. No 2)

- Explain With a neat sketch working of pneumatic PID controller. 10 M
- Explain Dynamic Elements and inverse response behavior of a process control Loop. 10 M

Q. No 3)

- What is Controller? Give classification & explain working of ON OFF controller. State drawbacks of the same. 10 M
- Explain with suitable example Split Range Control scheme. 10 M

Q. No 4)

- Explain Block Diagram Analysis for MIMO system. 10 M
- Explain Dynamic behavior of Second order interacting & Non interacting systems. 10 M

Q. No 5)

a. Why Tuning is required? Explain process reaction curve method. 10 M

b. Explain with a suitable Example cascade control scheme. 10 M

Q. No 6 Write Short Notes on (Any Four) 20 M

a. Relay based Tuning.

b. Reset wind up.

c. Override control.

d. Self Regulation & Non self-Regulation characteristic.

e. Gain Margin and Phase Margin.