

Q.P. Code : 40192

[Time: Three Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question.No.1 is compulsory.
 2. Attempt any **three** questions out of the remaining **five** questions.
 3. Figures to the **right** indicate **full marks**.
 4. Assume suitable data wherever required but justify the same.

1. Write short note on **any 4** 20
 - (a) Reverse (control) action.
 - (b) Live and dead zero
 - (c) Volume booster
 - (d) Proportional control
 - (e) Continuous verses discrete process control
2.
 - (a) Explain self regulation with example 8
 - (b) Write short note on electronic differential pressure transmitter. 12
3.
 - (a) Write short note on pneumatic to current converter. 5
 - (b) Explain types, construction, advantages, disadvantages & applications of Globe valves. 15
4.
 - (a) Explain need of transmitters. 5
 - (b) What is control valve rangibility? 5
 - (c) Explain PID control action. 10
5.
 - (a) What is bumpless transfer in PID control? 5
 - (b) Pressing operation is to be performed using a double acting cylinder. Cylinder has to move forward when PB1 button is pressed and return for set time of 15 seconds before it automatically returns to initial position. Limit switch 'S' is used for end sensing of the forward motion of the cylinder. Draw the pneumatic circuit, PLC wiring diagram and ladder diagram to implement this task. 15
6.
 - (a) Explain process reaction curve method and ZN method of PID tuning. 12
 - (b) What is PLC scan cycle? Explain basic instructions in ladder programming. 8