Q.P. Code : 25203

[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. Solve any 4 of the following   20
   (a) Explain the meaning of process load. When can we say that a process load change has occurred?
   (b) Compare conventional and smart transmitters.
   (c) Explain the term 'Control Valve Rangiability'.
   (d) Write a short note on Digital PID controller.
   (e) What is the differences between fixed PLC and modular PLC?

2. (a) Explain the concept of self regulation with an example.   7
   (b) Explain two and four wire transmitters with neat diagram.   7
   (c) Write short note on Butterfly valves.   6

3. (a) Explain the operating principle of current to pressure converter with diagram.   7
   (b) Compare conventional and smart transmitters.   7
   (c) Write short note on solenoid actuator for fluid valves.   6

4. (a) Explain construction and working of spring diaphragm type pneumatic actuator.   7
   (b) Differentiate between continuous and discrete process control.   6
   (c) What is the need of tuning of PID controller? Explain process reaction curve method for tuning of PID controller.   7

5. (a) Explain floating-position discontinuous controller with examples.   8
   (b) Explain in brief the concept of bump less transfers in PID controller.   6
   (c) Explain the various types of input output modules in a PLC.   6

6. (a) Explain quarter amplitude decay ratio with graph.   6
   (b) Write short note on steps of programming a PLC for process control application with examples.   14