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
