DE- 8/6/2017

TE/MTRX/Sem-VI/CBSGS

Libr 03

Q.P. Code :18089

[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 set point, controlled variable and manipulated variable using an example	
	(b)	Compare conventional and smart transmitters.	
	(c)	What are final control elements? How are they classified?	
	(d)	Explain the effect of process characteristics on PID combination.	
	(e)	What is the differences between fixed PLC and modular PLC?	
2.	(a)	Explain the concept of self regulation with an example	**7**
	(b)	Write short note on Electronic Differential Pressure Transmitter	**7**
	(c)	Write short note on Globe valves	**6**
3.	(a)	Explain the operating principle of current to pressure converter with diagram	**7**
	(b)	With neat block diagram, explain the working of electrical to pneumatic converter.	**7**
	(c)	Write short note on volume booster	**6**
4.	(a)	Explain the inherent characteristics of 3 basic types of fluid control valves with diagram.	**7**
	(b)	Differentiate between continuous and discrete process control.	**6**
	(c)	What is the need of tuning of of PID controller? Explain process reaction curve method for tuning of PID controller.	**7**
5.	(a)	Explain multi-position discontinuous controller with examples.	**8**
	(b)	Explain process reaction curve method and ZN method of PID tuning	**6**
	(c)	Explain the basic elements of PLC ladder logic diagram	**6**
6.	(a)	Explain quarter amplitude decay ratio with graph	**6**
	(b)	Double acting cylinder is used to perform continuous to and fro motion. Cylinder has to move forward when PB1 button is pressed and once to and fro reciprocation starts it should continue till stop button PB2 is pressed. Limit switches are used for end position sensing. Draw the pneumatic circuit, PLC wiring diagram and ladder diagram to implement this task.	**14**