

Seat  
No.

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मधुर - 053

**Process Instrumentation**  
**(New) (1300)**

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any two** sub questions from each unit.
5. Draw neat diagram if necessary.
6. Figure to right indicates full marks.
7. Assume suitable data if necessary.

**UNIT - I**

1. a) What is actuator ? Explain different types of it. 10  
b) Explain in detail block diagram of process control system. 10  
c) What are different objectives & advantages of process control system. 10

**UNIT - II**

2. a) What are different basic control elements ? Explain with example in detail. 10  
b) What is fluid valve ? What is principal of control valve ?  
Explain with neat diagram. 10  
c) Write short notes on.  
i) Cavitation. 5  
ii) Flashing. 5

**UNIT - III**

3. a) Explain pneumatic controller ? 10  
b) Explain tuning of p-type controller ? 10  
c) What is electronic controller ? Explain two position controller using op-amp. 10

**UNIT - IV**

4. a) Enlist difference between open loop & close loop control system. 10
- b) Explain Instrumentation schemes for boilers. 10
- c) Write short notes on.
- i) Selective control. 5
- ii) Adaptive control. 5

**UNIT - V**

5. a) Explain direct digital control in computer system. 10
- b) Draw & explain block diagram architecture of DCS in detail. 10
- c) What are basic elements & function in computer process control system. 10

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