

**6415****BOARD DIPLOMA EXAMINATION, (C-16)****MARCH / APRIL — 2021****DAEI — FOURTH SEMESTER EXAMINATION****PROCESS CONTROL***Time* : Three Hours][*Maximum Marks* : 80**PART-A**

3×10=30

- Instructions :**
- (i) Answer **all** questions.
 - (ii) Each question carries **three** marks.
 - (iii) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define controlled variable.
2. List the Discontinuous control modes.
3. Define Error and Dead time.
4. Define proportional band.
5. Classify control valves.
6. List the different types of actuators.
7. State the need for Electric to Pressure converters.
8. List any three applications of Adaptive control system.
9. Define Compound variable control system.
10. Draw the process line diagram for the following :
 - (a) Electric signal
 - (b) Pneumatic signal
 - (c) Fluid pressure line

- * **Instructions :**
- (i) Answer any **five** questions.
 - (ii) Each question carries **ten** marks.
 - (iii) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Explain Batch process and Continuous process.
- 12. Explain Proportional-Derivative control mode and mention its characteristics.
- 13. Explain the tuning of PID controller by using ultimate gain method.
- 14. Explain the principle of operation of electric to pressure convertor with diagram.
- 15. Explain the stepper motor actuator with a diagram.
- 16. Explain the Cascade control system with a block diagram.
- 17. Explain the Feed Forward control system with a block diagram.
- 18. Explain the following Standards used in instrumentation :
 - (a) ANSI
 - (b) ISA

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