



C16-AEI-402

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BOARD DIPLOMA EXAMINATION, (C-16)
MARCH/APRIL—2018
DAEI-FOURTH SEMESTER EXAMINATION
PROCESS CONTROL

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed **five** simple sentences.

1. Define controlled variable and manipulated variable.
2. List different discontinuous control mode.
3. Define process lag in a process control system.
4. What is dead time in process control system?
5. List different types of control valve.
6. Draw the diagram of stepper motor actuator.
7. State the need for electric to pressure converters.
8. List any three applications of ratio control system.

- * 9. Define adaptive control.
10. Draw the following general instruments by Balloon symbols :
- (a) Instrument at locally mounted
 - (b) Instrument at control centre
 - (c) Instrument-bifunctional/two services

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain a physical control system with block diagram.
12. Explain proportional-integral control mode and list its characteristics.
13. Explain the turning of PID controller using ultimate gain method.
14. Explain the principle of pneumatic actuator with diagram.
15. Explain the flow-lift characteristics of quick opening and linear control valves with diagrams.
16. Explain the block diagram of cascade control system.
17. Explain the feed forward control system with an example.
- * 18. Explain the following standards used in instrumentation :
- (a) ISI
 - (b) ANSI
