



C09-AEI-406

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**BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2014
DAEIE—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 the terms 'process' and 'process control'.
2. Give the need for tuning of PID controller.
3. Define the proportional band.
4. List the different types of actuators.
5. Give the constructional details of control valve.
6. Give the applications of adaptive control system.
7. Distinguish between feedback and feed forward control systems.
8. Define the term 'single-variable control'.

* 9. Draw the symbols of the following :

(a) Electric line

(b) Pneumatic line

10. List the different standards used in instrumentation.

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 about the batch process and continuous process. 5+5

12. (a) Explain about PI control mode. 5

(b) Write a short note on PID control mode. 5

13. (a) Explain about derivative control mode. 6

(b) Give the advantages of derivative control mode. 4

14. Explain the process of curve reaction method of tuning of PID controllers. 10

15. Explain the following actuators :

(a) Electrical actuator 5

(b) Pneumatic actuator 5

16. Write short notes on flow lift characteristics of quick opening, linear and equal percentage valve. 10

17. Draw and explain the block diagram of cascade control system. 10

18. Write short notes on ANSI and ISA. 10
