



C14-AEI-502

4608

BOARD DIPLOMA EXAMINATION, (C-16)
OCT/NOV—2018
DAEIE—FIFTH 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. Define the terms control lag and cycling.
3. List any three advantages of PID controllers.
4. Define the terms proportional band and offset.
5. Draw the diagram of electropneumatic actuator.
6. State the need for pressure to electric converters.
7. Draw the block diagram of final control operation.
8. Define single variable control system.
9. List any three applications of adaptive control system.

- * **10.** Draw the symbols for the following :
- (a) Point of measurement
 - (b) Flow controller
 - (c) Solenoid valve

PART—B

10×5=50

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

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

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

- 11.** Explain any physical control system and draw its block diagram.
- 12.** (a) Explain PI control mode and list its any two advantages.
(b) Explain the multiposition control mode of a controller.
- 13.** Explain the process reaction curve method for tuning of PID controllers.
- 14.** Explain the operation of electrical stepper motor actuator with its diagram.
- 15.** (a) Explain about sliding-stem single-seat plug control valve with its diagram
(b) Explain the basic principle of flapper nozzle system with its diagram.
- 16.** Draw and explain the block diagram of cascade control system.
- 17.** Explain programmed adaptive control system with its block diagram.
- * **18.** Explain the following standards used in instrumentation :
- (a) ISI
 - (b) BS
