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C16-AEI-402

**6415**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JUNE/JULY—2022**

**DAEI - FOURTH SEMESTER EXAMINATION**

**PROCESS CONTROL**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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 manipulated variable.
2. Define process load.
3. Define the term error.
4. State the need for tuning of PID controller.
5. Draw the diagram of solenoid valve actuator.
6. List any three types of control valves.
7. State the need for electric to pressure converter.
8. Define single variable control system.
9. List any three applications of adaptive control system.
10. Define piping and instrumentation diagram.

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**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain the batch process with diagram.
12. Explain the tuning of PID controller using ultimate gain method with diagram.
13. Explain two position control modes with example.
14. Explain the principle of nozzle-flapper system with diagram.
15. Explain the principle of hydraulic actuator with diagram.
16. Explain cascade control system with a block diagram.
17. Explain the operation of ratio control system with diagram.
18. Explain the use of letter codes for identification of instruments with example.

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