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C09-AEI-406

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BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

DAEIE - FOURTH SEMESTER EXAMINATION

PROCESS CONTROL

Time : 3 hours]

[Total Marks : 80

PART—A

4×5=20

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

1. Define process.
2. Define control lag.
3. Define proportional band.
4. List types of plugs.
5. State the need for electric to pressure converter.
6. List the applications of adaptive control system.
7. List the applications of cascade control system.
8. Define independent single variable control system.
9. Draw the symbols of electric signal and pneumatic line.
10. Define piping and instrumentation diagram.

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PART—B

15×4=60

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

11. Explain batch process with diagram.
12. Explain tuning of PID controller using ultimate gain method.
13. Explain PI control mode and list its advantages and disadvantages.
14. Explain the implementation of two position controller mode using OP-Amps.
15. Explain the principle of operation of electro pneumatic actuator with diagram.
16. Explain the operation of hydraulic actuator with diagram.
17. Explain the feed forward control system with an example.
18. Explain the following standards used in instrumentation :
 - (a) BS
 - (b) ISA

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