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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH /APRIL-2019

DAEI – FIFTH SEMESTER EXAMINATION

PROCESS CONTROL

Time: 3 Hours

Max. Marks: 80

PART-A

10x3=30M

Instructions: 1) Answer **all** questions and each question carries **three** marks
2) Answer should be brief and straight to the point.

- 1) Draw the block diagram of process control loop.
- 2) List the continuous control modes.
- 3) Define proportional band and offset.
- 4) Define derivative control mode.
- 5) Draw the block diagram of final control element.
- 6) Draw Flow-lift characteristics of control valves such as Quick opening, Linear and Equal percentage valves.
- 7) Draw the diagram of Electro Pneumatic Actuator.
- 8) List any three applications of Ratio control system.
- 9) Draw the block diagram of cascade control system.
- 10) Define Piping and Instrumentation diagram.

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PART-B

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10X3=30M

Instructions: 1) Answer any **FIVE** questions and each question carries **Ten** marks.
2) The answer should be comprehensive and the criteria for valuation is the content but not the length of the answer.

- 11) Explain batch process and continuous process.
- 12) Explain the process reaction curve method for tuning of PID controllers.
- 13) a) Explain PI control mode. 6M
b) List the advantage and disadvantage of PI control mode. 4M
- 14) a) Explain the rotating shaft control valve. 5M
b) Explain the Pneumatic actuator with its diagram. 5M
- 15) Explain the pressure to current converter with its diagram.
- 16) Draw and explain the block diagram of feed forward control system.
- 17) Explain programmed adaptive control system with its block diagram.
- 18) List the standards used in Instrumentation and explain any two of them.

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