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C14-AEI-406

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BOARD DIPLOMA EXAMINATION, (C-14)

JUNE—2019

DAEIE—FOURTH SEMESTER EXAMINATION

INDUSTRIAL ELECTRONICS AND CONTROL SYSTEMS

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. List any three advantages of solar cell.
2. Write the applications of photo transistor.
3. State the principle of resistance welding with diagram.
4. List applications of dielectric heating.
5. Define linear and non-linear control systems.
6. Write the limitations of transfer function of a system.
7. Define the test signals.
8. State Manson's gain formula.
9. Define stability of a control system.
10. Define rise time.

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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 the criterion for valuation is the content but not the length of the answer

11. Explain the working principle of photo multiplier tube and list the applications.
12. Explain the working of HF power source for induction heating with circuit diagram.
13. Explain the principle of dielectric heating with diagram.
14. (a) Define time variant and time invariant system.
(b) Draw and explain the block diagram of digital control system.
15. Derive the transfer functions of liquid level system.
16. Derive the transfer function of RLC series circuit.
17. (a) Explain the rules for block diagram reduction .
(b) State Routh Hurwitz stability criterion and mention the cases which come across while constructing the routh array.
18. Derive the time response of a first order control system for unit step and unit impulse input.

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