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C16-AEI-405

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BOARD DIPLOMA EXAMINATION, (C-16)

OCT/NOV—2018

DAEI—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. State the principle of opto coupler.
2. Draw the diagram of photo transistor.
3. State the principle of induction heating.
4. Draw the diagram of resistance welding.
5. Define open loop control system.
6. List the properties of transfer function.
7. Define inverse Laplace transform.
8. Define a signal flow graph of a system.
9. List the specifications of transient response of second order system.
10. Define absolute and relative stability.

PART-B

10×5=50

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

11. Explain the working of dot matrix and bar matrix displays.
12. Explain the methods of coupling electrode with RF generator in dielectric heating
13. (a) List the applications of induction heating.
(b) List the different dielectrics used for dielectric heating.
(c) List the types of resistance welding.
14. (a) Explain linear and non linear control system.
(b) Explain time variant and time invariant systems.
15. State and prove final value theorem and initial value theorem.
16. Obtain the laplace transform of unit step and unit ramp inputs.
17. (a) Define and list the components of block diagram of a system.
(b) Define gain margin and phase margin.
18. Obtain bode plot for the transfer function $G(S)=K/s (1+sT)$

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