



C09-AEI-404

3414

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2013

DAEIE—FOURTH SEMESTER EXAMINATION

INDUSTRIAL ELECTRONICS AND CONTROL ENGINEERING

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. Draw the photomultiplier tube.
2. List the applications of optocouplers.
3. List the applications of induction heating.
4. Draw the basic circuit of AC resistance welding.
5. List the applications of ultrasonics.
6. Write the importance of control engineering in our day-to-day life and industry.

7. Define Laplace transform.
8. Define the transfer function.
9. Distinguish between type and order.
10. Define gain margin.

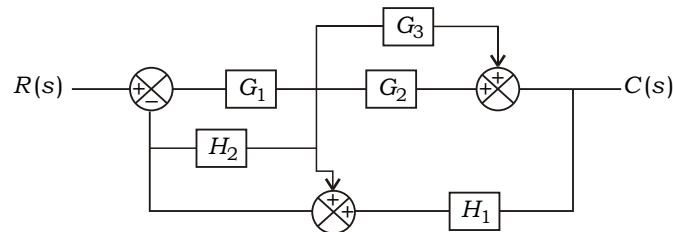
PART—B

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. (a) Explain the constructional details and working of a solar cell. 5
(b) List the advantages of solar cells. 5
12. (a) Explain about seven-segment display. 5
(b) Explain the principle of dielectric heating. 5
13. (a) Explain the types of resistance welding. 7
(b) List the applications of dielectric heating. 3
14. Explain about magnetostriction generator. 10
15. (a) Explain continuous data and sampling data. 5
(b) Distinguish between open-loop and closed-loop systems. 5

- 16.** (a) Derive the transfer function of liquid level systems. 5
 (b) Derive the transfer function of thermal systems. 5
- 17.** (a) Derive the transfer function of R - L - C parallel circuit. 5
 (b) Determine the transfer function for the following : 5



- 18.** Derive the time response of overdamped second-order system for unit-step input. 10
