



C09-AEI-404

3414

**BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2014
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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Draw a neat sketch of optocoupler.
2. Define 'dyanode'.
3. Mention different industrial heating.
4. List the dielectrics used for dielectric heating.
5. Mention the properties of ultrasound.
6. Define 'control system'.
7. Define 'step signal' and 'ramp signal'.
8. State the final value theorem.

* 9. Define order of the system.

10. List the classification of the system.

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 principle of operation of a phototransistor with its *V-I*-characteristics. 10

12. (a) Explain briefly about photoconductive cell. 5

(b) Draw the circuit of HF power source for induction heating. 5

13. Explain the principle of operation dielectric heating. 10

14. Explain the magnetostriction oscillator. 10

15. Explain the open-loop and closed-loop control systems with practical examples. 10

16. Derive the transfer function of series *R-L-C* circuit. 10

17. Explain the rules for block diagram reduction. 10

* 18. Derive the time response of first-order system when subjected to unit step input signal. 10
