



C14-AEI-406

4418

BOARD DIPLOMA EXAMINATION, (C-14)
SEPTEMBER/OCTOBER - 2020
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. State the principle of photo-conductive device.
2. State the working of optocoupler.
3. Draw the diagram of dielectric heating.
4. List the methods of coupling, electrodes with RF generator in dielectric heating.
5. Draw the diagram of water level control for open-loop control system.
6. Distinguish between linear and non-linear control system.
7. Find the Laplace transform of unit ramp.

- * 8. Define Laplace transform function.
9. Define type and order of control system.
10. Define relative stability.

PART—B

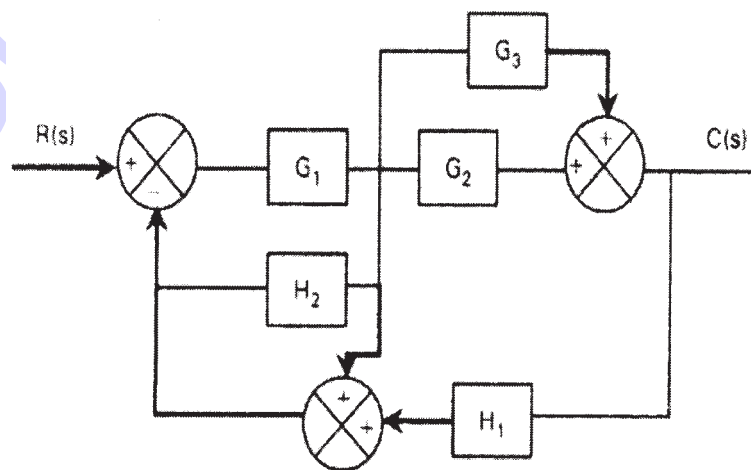
10×5=50

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 of solar cells with diagram and list the applications.
12. Explain the principle of induction heating with diagram and list the applications.
13. Explain the working of basic AC resistance welding circuit.
14. Explain the continuous data control system and sampled data control system.
15. Find $C(s) / R(s)$ for the given problem :



- * 16. Derive the transfer function of *RLC* series circuit.
17. (a) Mention any five rules for block diagram reduction.
(b) Explain Routh-Hurwitz criterion concept.
18. Derive the expression for steady-state error of type 0 system.
