

**6418****BOARD DIPLOMA EXAMINATION, (C-16)****MARCH / APRIL — 2021****DAEI — FOURTH SEMESTER EXAMINATION****INDUSTRIAL ELECTRONICS & CONTROL SYSTEMS**

Time : Three Hours]

[Maximum Marks : 80

PART-A

3×10=30

Instructions :

- (i) Answer **all** questions.
- (ii) Each question carries **three** marks.
- (iii) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List the applications of solar cell.
2. Draw the diagram of opto coupler.
3. List the different industrial heating methods.
4. Draw the basic AC Resistance welding.
5. Define time variant and time invariant systems.
6. List any three properties of transfer function of a system.
7. Define Laplace transform of a function.
8. Write the Mason's Gain formula.
9. List any three test signals in control system.
10. Define Gain margin.

- * **Instructions :** (i) Answer any **five** questions.
 (ii) Each question carries **ten** marks.
 (iii) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the working of Photomultiplier.

12. (a) Explain the principle of Dielectric heating.

(b) List any three applications of Dielectric heating.

13. Explain the principle of AC Resistance welding with diagram.

14. Explain the closed loop control system with an example.

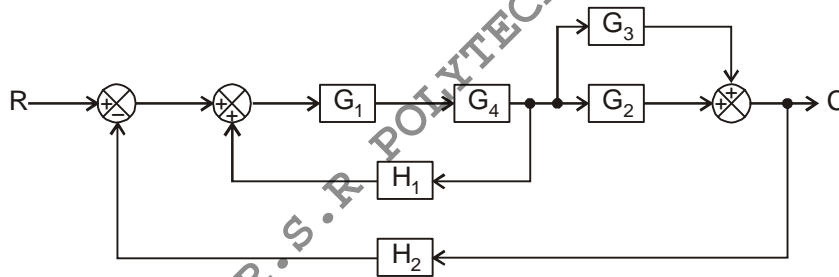
15. Find the Laplace transform of the following functions :

5+5

(a) e^{at}

(b) $\cos at$

16. For the system represented by the block diagram shown in below fig. determine overall transfer function C/R.



17. (a) State and prove final value theorem.

(b) Define type and order of a control system.

18. Obtain the time response of first order system for a unit step input.

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