



C16-AEI-405

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BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DAEI - FOURTH SEMESTER EXAMINATION

INDUSTRIAL ELECTRONICS AND CONTROL SYSTEM

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 transistor.
2. Draw the diagram of opto coupler.
3. State the principle of dielectric heating.
4. List the types of resistance welding.
5. Define system.
6. Define transfer function.
7. Define Laplace transform of function.
- * 8. List the basic components of block diagram.
9. Define the term 'time response' of the system.
10. State Routh Hurwitz criterion for stability of the system.

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[Contd...

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PART—B

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

11. Explain the working of seven segment display and list its applications. 10
12. Explain the working of high frequency power source for induction heating with diagram. 10
13. Explain the methods of coupling electrodes with RF generator in dielectric heating. 10
14. Explain the time variant control systems and digital control systems. 10
15. Obtain the inverse Laplace transforms of $F(s) = \frac{\omega}{(s+a)^2 + \omega^2}$. 10
16. Find the Laplace transform of $e^{at} \sin at$. 10
17. (a) Obtain the inverse Laplace transform of $F(s) = \frac{1}{s+a}$. 5
(b) Obtain steady state error for type 0 system. 5
18. Obtain static error quotients K_P, K_V, K_A . 10

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