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BOARD DIPLOMA EXAMINATION, (C-20)

MAY/JUNE—2023

DECE - FIFTH SEMESTER EXAMINATION

INDUSTRIAL ELECTRONICS

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. List the ratings of SCR.
2. Draw the equivalent circuit of a UJT.
3. State the different modes of TRIAC triggering.
4. List any three specifications of photo voltaic cell.
- * 5. List the applications of opto-couplers.
6. Classify different electrical/electronic transducers on the basis of principle of operation.
7. State the concept of magnetostriction effect.
8. List the applications of induction heating.
9. List the applications of resistance welding.
10. State the need of industrial automation.

PART—B

8×5=40

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

11. (a) Explain SCR triggering using UJT.

(OR)

(b) Explain the volt-ampere characteristics of DIAC.

12. (a) Explain the construction, working principle and characteristics of LED.

(OR)

(b) Explain the construction, operation and characteristics of photo transistor.

13. (a) Explain the working principle, construction and operations of potentiometric transducer.

(OR)

(b) Explain the construction and working of pulsed echo ultrasonic flaw detector.

* 14. (a) Draw the basic circuit of AC resistance welding and explain its working.

(OR)

(b) Explain about HF power source for induction heating.

15. (a) Explain the working of MOSFET based inverter circuit.

(OR)

(b) Explain the PLC system with block diagram.

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PART—C

10×1=10

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

16. Explain closed loop control system with some examples.

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