

7643

BOARD DIPLOMA EXAMINATION, (C-20)

DECEMBER—2022

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. Sketch the ISI circuit symbol of GTO, SCR, SCS and SBS.
2. Define intrinsic stand-off ratio of UJT.
3. Draw emitter characteristics of UJT.
4. State the concept of photovoltaic effect.
- * 5. List the applications of LED.
6. State the concept of piezoelectric effect.
7. List applications of ultrasonics.
8. Classify different industrial heating methods.
9. Define the term transfer function in the context of control systems.
10. State the principle of operation of inverter.

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 speed control of DC motor using SCR.

(OR)

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

12. (a) Explain the construction and working of LDR.

(OR)

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

13. (a) Explain the working principle, construction and applications of resistance strain gauge.

(OR)

(b) Explain the construction and working of magnetostriction ultrasonic generator.

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

(OR)

(b) Explain HF power source for induction heating.

15. (a) Explain the working of SMPS with block diagram.

(OR)

(b) Explain the working of offline UPS and online UPS.

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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. Analyze the features of open-loop control system with the help of block diagram of a real time example.

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