7643

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER / NOVEMBER—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 any six thyristor family devices.

2. Draw the ISI circuit symbols of SCR, DIAC, TRIAC.

3. List any three applications of SCR.

4. List any three applications of photo transistor.

5. State the concept of photovoltaic effect.

6. Define the term transducer.

7. State any three different types of resistive transducers.

8. List different industrial heating methods.

9. Compare open loop and closed loop control systems.

10. List any three applications of UPS.

PART—B

8×5=40

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 the construction and working of SCR.

(OR)

(b) Explain speed control of DC motor using SCR.

12. *(a)* Explain the construction and operation of photo diode.

(OR)

(b) Explain the construction and working of photovoltaic cell.

13. *(a)* Explain the construction and applications of potentiometric transducer.

(OR)

(b) Explain the working principle, construction and applcations of resistance strain gauge.

14. *(a)* Explain the working principle of induction heating and write its applications.

(OR)

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

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

(OR)

(b) Explain the PLC system with a block diagram

/7643　　　　　　　　**2**　　　　　[*Contd...*

PART—C

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 closed loop control system with the help of the block diagram of a real time example.

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