



C09-AEI-606 A

3719

BOARD DIPLOMA EXAMINATION, (C-09)  
OCT/NOV—2016  
DAEI—SIXTH SEMESTER EXAMINATION

POWER ELECTRONICS

Time : 3 hours ]

[ Total Marks : 80

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**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 ISI symbols of SCR, GTOSCR and TRIAC.
2. Mention any three ratings of SCR.
3. State the need for free wheeling diode.
4. State the working principle of chopper.
5. Give the classification of inverters.
6. Draw the circuit diagram of single-phase bridge inverter.
7. Draw the circuit diagram for speed control of DC shunt motor, using single phase half controlled converter.

- \* 8. Mention any three factors affecting speed of AC motors.
- 9. List any three devices used to suppress spikes in supply voltage.
- 10. Mention any three storage batteries used in uninterruptible power supply (UPS).

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Draw and explain SCR triggered by UJT.
- 12. Draw and explain single-phase half-controlled converter with RL load.
- 13. Explain the operation of chopper in all the four quadrants.
- 14. Explain the working of PWM inverter.
- 15. Describe the speed control of DC shunt motor using single-phase full controlled converter.
- 16. Explain the speed control of induction motor by using converters and inverters.
- 17. Draw and explain the light dimmer circuit using DIAC and TRIAC.
- \* 18. Draw and explain the emergency lamp circuit using SCR.

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