



C09-AEI-606 A

3719

BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2014
DAEI—SIXTH SEMESTER EXAMINATION
POWER 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. Draw ISI symbols of TRIAC and IGBT.
2. Plot VI characteristics of GTOSCR.
3. Classify 1- controlled converters.
4. Write down the applications of AC voltage regulators.
5. Classify inverters based on commutation.
6. List down the different techniques used in PWM inverters.
7. Write down any three merits of thyristor control method of speed regulation of induction motors.
8. Draw circuit diagram of 1- full-wave AC voltage controller for resistive load along with load-current waveform.

* 9. Mention the disturbances in commercial power supplies.

10. List out the specifications of batteries used in 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 VI characteristics of a TRIAC and explain different modes of triggering it.

12. (a) Compare SCR and GTO SCR in any five aspects.

(b) Give the classification of converters.

13. Explain the operation of chopper in all four quadrants.

14. Explain the working of a 1- centre-tapped cycloconverter.

15. Explain the principle of AC voltage control using phase control with simple circuits and draw waveforms.

16. Describe the speed control of induction motors by using converters and inverters.

17. Explain the working of SMPS with the aid of a block diagram.

* 18. Draw and explain emergency lamp circuit using SCR.
