



C09-AEI-606 A

3719

BOARD DIPLOMA EXAMINATION, (C-09)
APRIL/MAY—2015
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. List the different thyristor family devices.
2. Plot VI characteristics of a TRIAC.
3. Define free-wheeling diode and mention two functions of it.
4. List the different modes of choppers.
5. Define series inverter and draw basic series inverter circuit.
6. Draw the circuit diagram of a 1- centre tapped cycloconverter and show the current directions.
7. List out different SCR converter drives used for the speed control of DC shunt motors.

- * 8. Draw the schematic circuit of speed control of a DC shunt motor using chopper.
9. Write down the advantages of SMPS.
10. Give the classification of 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. Explain two-transistor analogy of an SCR.
12. (a) List four applications of a DIAC.
(b) Briefly explain the working of a 1- half-wave fully controlled converter with resistive load.
13. Explain the working of an ICC regulator.
14. Explain the working of voltage source inverter with RL load.
15. Describe the speed control of DC shunt motor using 1- converter.
16. Describe the speed control of induction motor by using AC voltage controller.
17. (a) List the types of disturbances in commercial power supplies.
(b) List out various devices used to suppress spikes in supply voltages.
- * 18. Draw and explain the battery charger circuit using SCR.
