



C09-AEI-606A

3719

**BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2017
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 any three thyristor family devices.
2. Draw the power control circuit of SCR.
3. Give the classifications of converters.
4. Define Chopper and list any two control modes of chopper.
5. Draw the circuit diagram of three-phase inverter circuit.
6. State the basic principle of cycloconverter.
7. Write the principle of AC voltage control using phase control method.

- * 8. List any three thyristor drives used for the speed control of DC shunt motors.
9. List any three devices used to suppress the spikes in supply voltages.
10. Draw the block diagram of On-line 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 the construction details and volt-ampere characteristics of TRIAC with diagram.
12. Explain the working of single-phase half-controlled converter with resistive load.
13. Explain the working of three-phase half-controlled converter with waveforms for resistive load.
14. Explain the working of voltage source inverter with diagrams.
15. Explain the speed control for DC shunt motor using converter.
16. Explain the speed control of induction motor by using converters and inverters (V/F control).
17. Explain the Burglar alarm circuit using SCR with diagrams.
- * 18. Explain the Battery charger circuit using SCR with diagrams.

5+5=10

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