



C09-EE-604

3765

**BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2016
DEEE—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. State the need of commutation of SCR.
2. Draw the Volt-Ampere characteristics of IGBT.
3. Draw the SCR firing circuit using UJT.
4. State the need of free wheeling diode.
5. Briefly explain the constant frequency control method of chopper.
6. State the any three applications of cyclo-converters.
7. State any three factors which affect the speed of a DC motor.
8. State the factors affecting the speed control of AC motors.

9. State different ^{*} types of batteries used in UPS.
10. State 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 the construction and working of DIAC.
12. Explain different modes of triggering of TRIAC.
13. Explain the working of single-phase half-wave fully-controlled converter with *R-L* load.
14. Explain the working principle of chopper with a neat sketch.
15. Explain the working of single-phase bridge inverter using MOSFET.
16. Explain the speed control of DC shunt motor using converters.
17. Draw and explain the battery charger circuit using SCR.
18. (a) State the ratings of SCR.
(b) Draw and explain the working of emergency lamp circuit using SCR.

★ ★ ★