



C09-EE-604

3765

BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2013
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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State any three advantages of TRIAC.
2. Draw the volt-ampere characteristics of IGBT.
3. State the need of commutation of SCR.
4. State the need of freewheeling diode.
5. Define chopper and state its types.
6. State the different types of pulse-width modulated inverters.
7. State the factors affecting the speed control of AC motors.
8. State any three factors which affect the speed of a DC motor.

9. Draw the light dimmer circuit using DIAC and TRIAC.
10. State the need 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 forward bias and reverse bias characteristics of SCR.
12. Draw and explain the TRIAC firing circuit using DIAC.
13. Explain the control methods of chopper with neat sketches.
14. Explain the working of single-phase half-wave fully controlled converter with *R-L* load.
15. Explain the working principle of cyclo-converter with a neat sketch.
16. Explain the working of single-phase AC voltage controller with a sketch.
17. Explain the working of SMPS with a block diagram.
18. (a) Compare GTOSCR with SCR in five aspects.
(b) State any five advantages of SMPS.
