



C14-EE-604

4744

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2017
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. Draw the symbols of the following :
 - (a) DIAC
 - (b) SCS
 - (c) RCT
2. Define turn-on and turn-off times of SCR.
3. Compare between LASCR and SCR in three aspects.
4. Classify converters in any three aspects.
5. Draw the circuit of four-quadrant chopper.
6. Define an inverter and state any four applications.
7. List any six applications of cycloconverters.

- * 8. State the factors affecting the speed control of DC motors.
- 9. List the factors affecting the speed of AC motors.
- 10. Draw the emergency lamp circuit using SCR.

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 working and *V-I* characteristics of SCR with a neat sketch.
- 12. Explain the power control circuit of SCR with waveforms.
- 13. (a) Explain the necessity of commutation of SCR.
(b) Explain class C commutation of SCR.
- 14. Explain the working of single-phase fully controlled converter with R load.
- 15. Explain the working principle of chopper with circuit diagram and waveforms.
- 16. Explain the working of single-phase centre-tapped cycloconverter with neat sketch.
- 17. Explain the speed control of three-phase induction motor using a.c. voltage regulator.
- * 18. (a) State any five types of disturbances in electrical power supply.
(b) Explain the working of light dimmer circuit using TRIAC and DIAC.
