



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.
