



C14-EE-604

4744

BOARD DIPLOMA EXAMINATION, (C-14)  
OCT/NOV—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. List any six thyristor family devices.
2. Compare GTOSCR and SCR in any three aspects.
3. Write any three applications of TRIAC.
4. Draw the circuit of three phase fully controlled converter with  $R$  load.
5. Define AC regulator and list any four applications.
6. State any three disadvantages of series inverter.
7. Define cycloconverters and state its applications.

8. State the factors<sup>\*</sup> affecting the speed of DC motors.
9. Compare converter and chopper controlled DC motors in any three aspects.
10. List any three applications of power electronic circuits.

**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, operation and  $V-I$  characteristics of SCR.
12. Explain the TRIAC firing circuit using DIAC with waveforms.
13. State the necessity of commutation in SCR. Explain class A commutation.
14. Explain the working of single phase fully controlled converter with RL load.
15. Explain the operation of chopper in all four quadrants.
16. Explain the working of three phase inverter with necessary waveforms.
17. Explain the speed control of DC shunt motor using chopper.
18. Explain various types of disturbances in the commercial power supply.

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