



C09-AEI-606 A

**3719**

**BOARD DIPLOMA EXAMINATION, (C-09)  
OCT/NOV—2015  
DAEI—SIXTH SEMESTER EXAMINATION  
POWER ELECTRONICS**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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 three ratings of SCR.
2. Draw the power control circuit of SCR.
3. Classify converters.
4. State the need of free-wheeling diode.
5. Draw the diagram of single-phase bridge inverter using MOSFET.
6. State the principle of cycloconverter.

- \* 7. List any three factors affecting speed of AC motors.
8. State the principle of AC voltage control using phase control.
9. Classify UPSs.
10. List different types of disturbance in commercial power supply.

**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. Give the constructional details of DIAC and TRIAC. 5+5=10
12. (a) Explain the power control circuit of DIAC. 5  
(b) Explain the working of single-phase AC regulator. 5
13. Explain the operation of chopper in all four quadrants.
14. Explain the working of voltage source inverter.
15. Explain the speed control for DC shunt motor using converter.
16. Explain the speed control of induction motor by using AC voltage controller.

- \* 17. Draw and explain the light dimmer circuit using TRIAC.
18. Draw and explain the working of SMPS.

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