



C09-AEI-606 A

**3719**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**OCT/NOV—2013**

**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.

1. List any three thyristor family devices.
2. Draw the ISI symbols of triac and diac.
3. Write the classification of converters.
4. Draw the circuit of single-phase full-wave fully controlled converter.
5. Draw the circuit diagram of three-phase inverter circuit.
6. Classify inverters.
7. Draw the speed control of DC series motor using converter.
8. Mention factors affecting the speed of DC motors.
9. Draw the block diagram of on-line UPS.
10. List the types of disturbances in commercial power supply.

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**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

- 11.** Describe the construction details of SCR. Draw and explain the volt-ampere characteristics of SCR. 10
- 12.** (a) Draw *V-I* characteristics of diac. 5  
(b) Explain the working principle of chopper. 5
- 13.** Explain the working of single-phase fully controlled converter with resistive load. 10
- 14.** Explain the working of single-phase center-tapped cycloconverters. 10
- 15.** Explain the principle of AC voltage control using single-phase control. 10
- 16.** Describe the speed control of DC shunt motor using chopper. 10
- 17.** Explain the block diagram of SMPS, and also list its advantages. 8+2
- 18.** Draw and explain the emergency lamp circuit using SCR. 10

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