



C09-AEI-606A

**3719**

**BOARD DIPLOMA EXAMINATION, (C-09)  
MARCH/APRIL—2017  
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. Sketch the ISI circuit symbols for SCR, DIAC, TRIAC.
2. Draw the VI characteristics of diac.
3. Classify converter.
4. List different control modes of chopper.
5. Draw the diagram of three-phase inverter.
6. Classify inverter.
7. Mention any three factors affecting the speed of DC motor.

- \* 8. Mention any three factors affecting the speed of AC motor.
- 9. List the devices used to suppress voltage spikes in supply voltage.
- 10. List the storage batteries used in UPS.

**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. Draw VI characteristics and explain the construction details of SCR. 5+5=10
- 12. (a) Draw and explain SCR circuit triggered by UJT. 2+3=5  
(b) Explain the working of single-phase AC regulator. 5
- 13. Explain the working of single-phase fully controlled converter with resistive and *R-L* loads. 5+5=10
- 14. Explain the working of single-phase centre-tapped cyclo converter. 10
- 15. Explain the speed control for DC shunt motor using converter. 10
- 16. Explain the speed control of induction motor by using AC voltage controller. 10
- 17. Draw and explain SMPS with block diagram. 5+5=10
- \* 18. Draw and explain the battery charger circuit using SCR. 5+5=10

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