

**3765**  
**BOARD DIPLOMA EXAMINATION, (C-09)**  
**MARCH/APRIL - 2019**  
**DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING**  
**POWER ELECTRONICS**  
**SIXTH SEMESTER EXAMINATION**

**Time: 3 Hours****Total Marks: 80**

**PART - A (10 x 3 = 30 Marks)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. Mention the ratings of SCR.
2. State any three advantages of TRIAC.
3. Draw the Volt-Ampere Characteristics of IGBT.
4. Define Chopper and state the control modes.
5. State the Need of Free Wheeling Diode.
6. Define Cyclo-Converter and state its types.
7. State the factors affecting the speed of a D.C. Motor.
8. State the factors affecting the speed of A.C. Motors.
9. Draw the Light Dimmer Circuit using DIAC and TRIAC.
10. State the different types of Batteries used in UPS.

**PART - B (5 x 10 = 50 Marks)**

*Note 1: Answer any five questions and each question carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. State the need of commutation of SCR and explain any one method of Commutation of SCR.
12. Draw and explain the TRIAC firing circuit using DIAC.
- \* 13. Explain the working of Single-Phase Half-wave fully Controlled converter with Resistive load.
14. Explain the following operations of Chopper
  - a). Voltage frequency Control
  - b). Constant frequency control
15. Explain the working of PWM ( Pulse Width Modulation) Inverter.
16. Explain the speed control of Induction Motor by using Converter and Inverter Method (V/F Control).
17. Draw and explain Battery Charger circuit using SCR.
- 18A. Describe the constructional details of SCR.
- B. Draw the block diagram of OFF-Line UPS.

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