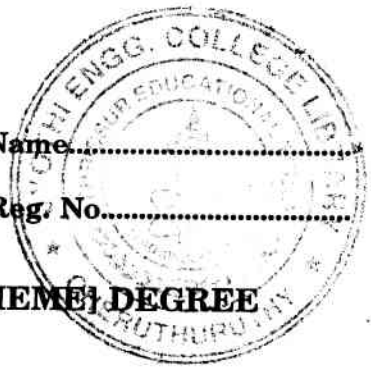


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Name.....

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**FIFTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE  
EXAMINATION, NOVEMBER 2015**

**AI 09 505 – POWER ELECTRONICS**

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

1. Define Latching current and Holding current.
2. What is dual converter? Mention its mode of operation.
3. Draw the turn-on characteristics of TRIAC.
4. List the advantages of SMPS over phase controlled rectifiers.
5. What is meant by current source inverter?

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

6. Compare power MOSFET and BJT.
7. Compare Half and full controlled rectifier.
8. Describe the RMS voltage output for single phase AC voltage controller with resistance load.
9. Explain the factors involved in design of converter circuits.
10. Describe MOSFET chopper.
11. Explain the significance of synchronization circuits.

(4 × 5 = 20 marks)

**Part C**

*Answer Section (a) or Section (b) of each question.*

12. (a) Explain the operation of SCR using two transistor analogy and also explain the V-I characteristics of SCR.

*Or*

- (b) Explain the switching characteristics of power MOSFET and discuss about MOSFET protection circuits.

**Turn over**

13. (a) Explain the operation of a single-phase two pulse bridge converter using 4 SCRs.

*Or*

- (b) Explain the working of single-phase two pulse bridge converter with RLE load.

14. (a) Explain the principle of operation of DC-DC step down chopper with suitable diagrams.

*Or*

- (b) Describe the principle of step up and step down operations of chopper.

15. (a) Describe SMPS with neat diagram.

*Or*

- (b) Explain the block diagram of UPS in detail.

(4 × 10 = 40 marks)