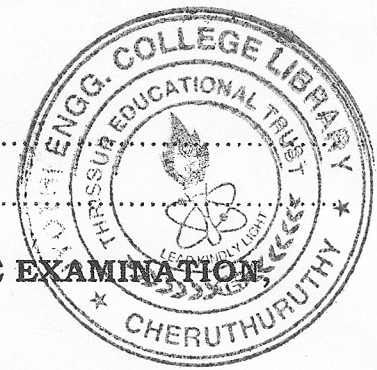


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Name:

Reg. No.:



**SIXTH SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION
JUNE 2011**

EC 04 605 – POWER ELECTRONICS

Time : 3 Hours

Maximum : 100 Marks

Answer ALL questions

PART - A

- I**
- (a) Draw the basic structure and the characteristics of a power transistor.
 - (b) What are commutation circuits?
 - (c) What is the significance of Pulse width modulation in inverters?
 - (d) Briefly explain any one application of a rectifier.
 - (e) What is an Induction Motor? State its applications.
 - (f) Briefly explain the any two methods of speed control in DC motors.
 - (g) Explain the principle of operation of a cuk regulators.
 - (h) What is the need for regulators? Give its classification.

(8 × 5 = 40)

PART - B

- II**
- (a) With a neat sketch of the structure and characteristics, explain the operation of
a
(i) BJT (ii) MOSFET
(OR)
 - (b) With neat sketch of the structure and characteristics, explain the operation of a
(i) Thyristor and (ii) TRIAC
- III**
- (a) Discuss in detail about the structure, operation and applications of an SCR
(OR)
 - (b) Explain in detail about the following inverter configurations
(i) Series (ii) Parallel (iii) Bridge
- IV**
- (a) (i) Explain in detail about single phase ac regulator with R and RL loads.
(ii) What are cycloconverters? Explain.
(OR)
 - (b) Explain the principle of operation of step-up and step-down choppers.
- V**
- (a) Discuss in detail about
(i) Buck (ii) Boost and (iii) Buck-Boost regulators.
(OR)
 - (b) (i) With neat sketch explain the Switched Mode Power supply and Compare its operation with a linear power supply.
(ii) Explain the basic blocks of an uninterruptible power supply.

(4 × 15 = 60)
