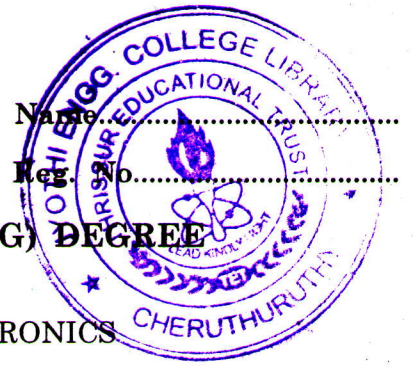


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(Pages 2)



**SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2009**

EE 2K 602/PT EE 2K 502—POWER ELECTRONICS

Time : Three Hours .

Maximum : 100 Marks

- I. (a) Write a short note on the operation of UJT.
(b) What are the methods of turning on SCR ?
(c) Write a short note on pulse width modulation.
(d) What is the effect of free wheeling diode in the converter circuits ?
(e) What is meant by sequence control of ac regulators ?
(f) Give a brief account on tap changing for voltage regulation.
(g) Compare between a switched mode power supply with linear power supply.
(h) List the applications of uninterruptible power supply.

(8 × 5 = 40 marks)

Unit I

- II. (a) Explain the various commutation circuits used in SCR circuits. (15 marks)

Or

- (b) (i) Explain the basic structure and V-I characteristics of power transistors. (6 marks)
(ii) What is meant by static and dynamic characteristics as applied to SCRs ? Explain them. (9 marks)

Unit II

- III. (a) Explain the operation of a SCR bridge inverter with suitable circuit and waveforms. (15 marks)

Or

- (b) What is meant by phase controlled rectifiers ? Explain it in the discontinuous mode of operation with suitable waveforms. (15 marks)

Turn over

Unit III

- IV. (a) What are the different methods of speed control of dc motors ? Explain it with relevant circuit diagrams and expressions.

(15 marks)

Or

- (b) (i) Explain the time ratio control and current limit control strategies used for chopper.
(ii) With the help of basic power circuit diagram, explain the working of a current commutated chopper.

(7 + 8 = 15 marks)

Unit IV

- V. (a) Explain the operation of buck-boost regulators with a neat circuit diagram and relevant waveforms.

(15 marks)

Or

- (b) Write short notes on the following :—

- (i) Cuk regulators.
(ii) buck regulators.

(15 marks)

[4 × 15 = 60 marks]