

Roll No.

37134

Printed Pages : 3

BT-7 / M-19
POWER ELECTRONICS
Paper-ECE-405 N

Time allowed : 3 hours

[Maximum marks : 75]

Note : Attempt any five questions, selecting at least one question from each unit.

Unit-I

1. (a) What do you mean by power electronics converter ?
Explain the various types of it in brief. 8
(b) Explain the static and dynamic characteristics of IGBT. 7
2. (a) Draw the static drain characteristics and transfer characteristics curve for an N-channel enhancement type MOSFET. 8
(b) Compare the switching characteristics of power MOSFETs and power transistors bringing out the advantages of one over the other. 7

Unit-II

3. (a) Discuss what would happen if gate is made positive with respect to cathode during reverse blocking of an SCR. 5
(b) Draw and explain the forward characteristics of SCR using two transistor model of SCR. 5

37134

[Turn over

(2)

- (c) Show that string efficiency for two parallel connected SCRs is usually less than one. 5
 4. (a) Explain the need of commutation in thyristor circuits. What are the different methods of commutation schemes ? Discuss one of them, involving two thyristor, with a neat schematic and waveforms. 8
(b) What is complementary impulse commutation ? Describe the type of commutation with a circuit diagram and appropriate waveforms. 7
- Unit-III**
5. (a) Explain the operation of a single phase full bridge converter with RL load for continuous and discontinuous load currents. 8
(b) Describe the operation of three phase full converter for different firing angles with the help of voltage and current waveform. 7
 6. (a) Explain the classification of chopper with neat circuit diagram and waveform. 8
(b) Explain the working of single phase current source inverter. 7

37134

(3)

Unit-IV

7. (a) What is an AC voltage controller ? List some of its industrial applications. Enumerate its merits and demerits. 8
- (b) Draw the possible configurations of a single phase voltage controller and compare them. 7
8. (a) Describe and explain the operation of step up cycloconverter in detail. 8
- (b) Explain the operation of a 3-phase cycloconverter. Draw the waveforms. 7

<http://www.kuonline.in>

Whatsapp @ 9300930012

Your old paper & get 10/-

पुराने पेपर्स भेजे और 10 रुपये पायें,

Paytm or Google Pay से

37134