

2056
B.E. (Electrical and Electronics Engineering)
Sixth Semester
EE-606: Power Electronics

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

1. Answer the following questions in short:-
 - a) Compare GTO and MOSFET from operating frequency point of view.
 - b) The holding current of an SCR is less than that of the latching current, why?
 - c) Explain why commutation circuits are required.
 - d) What is basic difference between full converters and semi-converters?
 - e) Write an expression for output voltage of a step-up chopper. (5x2)

UNIT - I

2. Draw the two-transistor equivalent circuit of an SCR and explain its working. Also, draw its v-i characteristics. (10)
3. With the help of a neat circuit diagram and waveforms, explain the class D commutation method. (10)
4. Explain the necessity of series parallel operation of SCRs? What problems do we face for these operations? How are these problems overcome? (10)

UNIT - II

5. With the help of a neat circuit diagram and relevant waveforms, explain working of a single-phase semi-converter. (10)
6. Explain the working of a four-quadrant chopper with the help of neat circuit diagram and waveforms. (10)
7. Write short notes on:
 - a) Single-phase dual converter
 - b) Voltage commutated chopper. (10)

x-x-x