

1059
B.E. (Electronics and Communication Engineering)
Sixth Semester
EC-625: 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

- I. Write answer of the following:-
- Why MOSFET is generally used for low power high operating frequency applications?
 - The holding current of an SCR is less than that of the latching current, why?
 - What is role of a Snubber circuits for power electronic switch?
 - What is main difference between TRC and CLC control techniques for a chopper?
 - Current THD is less than that of a voltage THD for an inductive circuit, why? (5x2)

UNIT - I

- II. Discuss construction of IGBT and draw its characteristics. (10)
- III. With the help of a neat circuit diagram and relevant waveforms, explain the working of a single-phase full wave converter for R-L-E load (assume load current to be constant). With the help of waveforms, explain the effect of source inductance on output voltage. (10)
- IV. With the help of a neat and properly labelled circuit diagram, explain the working of four quadrant chopper operating in all four quadrants by drawing output voltage and current waveforms for R-L-E load. (10)

UNIT - II

- V. A single-phase full bridge inverter has a load of $(3-j4) \Omega$ and dc input voltage is 50V. Determine the THD in output voltage and load current (consider harmonic components up to 9th order for load current). (10)
- VI. With the help of a neat circuit diagram explain the working of fly back converter for SMPS. (10)
- VII. Write short notes on:-
- UPS
 - PM Stepper motor drive
- (10)

x-x-x