

Q.P. Code : 598000

(3 Hours)

[Total Marks : 80

N.B. : (1) Question No. 1 is compulsory.
(2) Solve any three from the remaining.

1. (a) Define delay time, rise time & spread time referred to SCR. 20
(b) Explain the effect of source inductance on fully controlled bridge rectifier.
(c) How are inverters classified?
(d) Explain basic block diagram of SMPS.
(e) Explain how choice of a drive can be made.

 2. Design AC power control circuit using TRIAC & DIAC for following 20
requirements.
Input voltage = 250V ac, 50 Hz, 1 phase
Output voltage variation = 150 to 200 V
Load resistance = 300Ω

 3. (a) Explain Buck-Boost converter. Derive expression for output voltage. 10
(b) Explain variable frequency control drive for AC motors. 10

 4. (a) What are dv/dt & di/dt rating of SCR? What happens if these ratings are exceeded? Explain. 10
(b) Explain applications of power electronics in electric heating. 10

 5. (a) Compare MOSFET, IGBT & SCR. 10
(b) Explain PWM full bridge inverter. 10

 6. (a) Explain different triggering methods of SCR. Also write their advantages & disadvantages. 10
(b) Write short note on. 10
 - 1) Series inverter
 - 2) Step up & step down chopper
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