

(3 Hours)

Total Marks: 80

- N. B. 1) Question No. 1 is **compulsory**.
2) Answer any **3** questions from the remaining **5** questions.
3) Assume suitable data wherever necessary.

- Q1 Solve **any four** **20**
(a) Define holding current and latching current of SCR.
(b) Explain RC snubber circuit.
(c) Write short note on reduction of harmonic distortion.
(d) Write a protection scheme for over voltage for SCR.
(e) Compare SCR, IGBT with various parameters.
- Q2 (a) Explain fan regulator with diac-triac scheme. **20**
(b) What is commutation of SCR? Explain class C type of commutation with neat waveform.
- Q3 (a) Explain single phase full controlled rectifier with inverting and rectifying mode. **20**
(b) Explain DC drives operation with respective Motoring, Plugging, Dynamic and Regenerative Braking.
- Q4 (a) Explain boost regulator with the help of circuit diagram and waveform **20**
(b) Explain different triggering methods of SCR. Also write their advantages and disadvantages.
- Q5 (a) Draw and explain H-Bridge inverter, with neat waveform, using IGBT. **20**
(b) Explain series inverter and modified series inverter.
- Q6 (a) Draw and explain single phase step down cycloconverter. **20**
(b) Explain variable frequency speed control for AC drives.
