h) Explain the voltage control of 3-phase inverter by sinusoidal PWM scheme.

i) An RLE load is operating in a chopper circuit from a 500-volt dc source. For the load, L=0.06H, R=0 and constant E. For a duty cycle of 0.2, find the chopping frequency to limit the amplitude of load current excursion to 10A.

j) A single-phase full-wave ac voltage controller feeds a load of R=20 Ω with an input voltage of 230V, 50 Hz. Firing angle of both the thyristor is 45°. Calculate (a) rms value of output voltage (b) load power and (C) input power factor.

k) Explain the principle and operation of single-phase mid-point type step-up cycloconverter.

l) Explain the operation of current source inverter with neat sketch diagram and waveforms.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 Draw and Explain in details three-phase 180° mode of VSI. (16)

Q4 Explain the applications of UPS, SMPS, Battery Chargers and SVC. (16)

Q5 Discuss the switching characteristics of an SCR during turn ON and turn OFF with neat sketch waveform. (16)

Q6 Discuss the operation of Fly Back converter and Push Pull Converter with neat sketch diagram and waveforms. (16)