Q3)

b)

To obtain the same average output voltage and average load current values , we applied input voltage as 800V line-to-line rms for full bridge whereas for 12-pulse rectifier we applied input voltage as 400V line-to-line rms.Thus, compared to 12-pulse rectifier, full-bridge rectifier should have higher input voltage to obtain same average values. Furthermorewe can think the three-phase full bridge rectifier as the 6-pulse rectifier. As the number of pulses per cycle is increased, the output DC waveform gets improved,so the quality of output voltage waveform would definitely be improved with low ripple. As the pulse number increases, the harmonics present in the input decreases and the Total Harmonic Distortion (THD) reduces.This means that the higher the number of rectifier pulses, the lower the line current distortion is. In 12-pulse rectifiers, power factor will improve and total harmonic distortion can be reduced compared with full bridge rectifiers. On te other hand, 12-pulse rectifier has higher cost compared to full bridge rectifier due to diode numbers and transformers.