## **QUESTION 3**

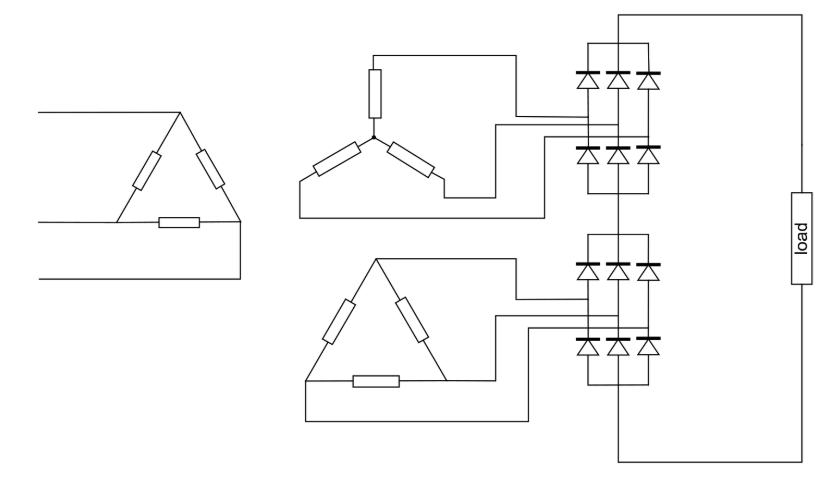


Figure 1 shows a 12-pulse uncontrolled bridge rectifier. Primary delta leads the secondary wye by 30o, hence secondary delta leads secondary wye by 30o as well. Therefore; the three-phase voltages supplying bridges are displaced by 30°. Therefore, the peak values of the output voltage are given by (1) and mean of the output voltage is found by (2) and (3).

(1)

Advantages of this rectifier is reduced THD level and voltage ripple output, increased output voltage; whereas the main disadvantage is the size of the equipment.

b) we know that mean output voltage of a three phase full bridge diode rectifier is given by (4) whereas 12-pulse rectifier’s is (3).

Therefore we must choose 12 pulse bridge rectifier supply as Vll =200V.