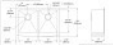


QUESTION

Figure 1 shows a circuit diagram of a power supply. The circuit consists of a transformer with a primary winding of 200 turns and a secondary winding of 1000 turns. The primary winding is connected to a 240 V AC supply. The secondary winding is connected to a bridge rectifier circuit. The bridge rectifier consists of four diodes connected in a bridge configuration. The output of the bridge rectifier is connected to a filter capacitor and a load resistor. The load resistor is connected in parallel with the filter capacitor. The output voltage across the load resistor is 12 V.



Calculate the RMS value of the secondary voltage. [3 marks]

Calculate the average value of the secondary voltage. [3 marks]

Calculate the average value of the output voltage. [3 marks]

ANSWER