Answer on Question #41185, Physics, Electric Circuits

Question: A step down transformer is connected to main supply 200V to operate a 6V-30W bulb.The current in primary-

A)3 Amp. B)0.3 Amp. C)1.5 Amp. D)0.15 Amp.

Solution. The current is secondary is

$$I = \frac{P_2}{U_2} = \frac{30W}{6V} = 5\,A$$

Now we can find current in primary.

$$U_1 I_1 = U_2 I_2$$

$$I_1 = \frac{U_2 I_2}{U_1} = \frac{6 \cdot 5}{200} = 0.15\,A$$

The answer is D) 0.15 Amp.