

Answer on Question #44049-Physics-Electric Circuits

A motor connected to a 12v supply has a resistance of 3 ohms.

- a) What current flows through it?

Solution

$$I = \frac{V}{R} = \frac{12\text{v}}{3 \text{ ohms}} = 4 \text{ A.}$$

- b) How much charge flows through it in 5s?

Solution

$$q = It = 4 \text{ A} \cdot 5\text{s} = 20 \text{ C.}$$

- c) How much energy does it transfer in this time?

Solution

$$E = Vq = 12\text{v} \cdot 20\text{C} = 240 \text{ J.}$$