

task_klegpky1gugolsq7_with_calculation

Student Group

First Name	Surname	Matrikel Nr.

Table of Contents

Exercise E19 Electron flow	2
----------------------------------	---

current, electrons, chapter1 4

Exercise E19 Electron flow

How many electrons pass through a control cross-section of a metallic conductor when the current of 40 mA flows for 4.5 s ?

Solution

$$\begin{aligned} & 1.1 \cdot 10^{18} \text{ electrons} \end{aligned}$$

$$\begin{aligned} Q &= I \cdot t \quad \&= 0.04\text{ A} \cdot 4.5\text{ s} \quad \&= 0.18\text{ As} \quad \&= 0.18\text{ C} \quad \&= \{0.18\text{ C}\} \cdot \{1\over\{1.6022 \cdot 10^{-19}\}\text{ C/electron}}\} \\ &= 1.1 \cdot 10^{18} \text{ electrons} \end{aligned}$$

From:

<https://wiki.mexle.org/> - **MEXLE Wiki**

Permanent link:

https://wiki.mexle.org/electrical_engineering_and_electronics/task_klegpky1gugolsq7_with_calculation

Last update: **2023/04/03 11:21**

