

Quiz Average 9.60

Quiz High Score 10

PH 221

Quiz # 05 (10 pts)

Name _____ Solution _____

A wire is carrying a current of 435. mA. How long will it take for a total charge of 372. mC to pass a reference point in the wire?

- A. $1.17 \times 10^0 \text{ s}$ B. $8.55 \times 10^{-4} \text{ s}$ C. $8.55 \times 10^{-1} \text{ s}$ D. $1.17 \times 10^3 \text{ s}$

$$i = \frac{\Delta Q}{\Delta t}$$

Solve for Δt

$$\Delta t = \frac{\Delta Q}{i} = \frac{372. \text{ mC}}{435. \text{ mA}} = 0.855 \text{ s}$$

So, the correct answer is C !

A typical starter motor for car requires a power of 1830. W having a voltage across the starter motor of 3.10 V. What is the effective resistance of the starter motor?

- A. $5.25 \times 10^{-3} \Omega$ B. $1.90 \times 10^2 \Omega$ C. $5.90 \times 10^2 \Omega$ D. $1.69 \times 10^{-3} \Omega$

$$P = \frac{V^2}{R}$$

Solve for resistance R

$$R = \frac{V^2}{P} = \frac{(3.10 \text{ V})^2}{1830. \text{ W}} = 5.25 \times 10^{-3} \Omega$$

So, the correct answer is A !

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