

Problem 1.22

A lightning bolt strikes an airplane with 40 kA for 1.7 ms. How many coulombs of charge are deposited on the plane?

Solution

Multiply the current by the amount of time it's applied for to get the amount of charge deposited.

$$Q = It = \left(40 \cancel{\text{kA}} \times \frac{1000 \text{ A}}{1 \cancel{\text{kA}}}\right) \left(1.7 \cancel{\text{ms}} \times \frac{1 \text{ s}}{1000 \cancel{\text{ms}}}\right) = 68 \text{ C}$$