

28. Eq. 23-28 gives

$$\vec{E} = \frac{\vec{F}}{q} = \frac{m\vec{a}}{(-e)} = -\left(\frac{m}{e}\right)\vec{a}$$

using Newton's second law. Therefore, with *east* being the  $\hat{i}$  direction,

$$\vec{E} = -\left(\frac{9.11 \times 10^{-31} \text{ kg}}{1.60 \times 10^{-19} \text{ C}}\right) \left(1.80 \times 10^9 \text{ m/s}^2 \hat{i}\right) = -0.0102 \text{ N/C } \hat{i}$$

which means the field has a magnitude of 0.0102 N/C and is directed westward.