

P #11

Ch 27 - pg 861

$$\lambda = 350 \text{ nm}$$

$$KE_{\max} = 1.31 \text{ eV}$$

$$a) \quad KE_{\max} = \frac{h \cdot c}{\lambda} - \phi$$

$$1.31 \text{ eV} = \frac{(1240 \text{ eV} \cdot \text{nm})}{350 \text{ nm}} - \phi$$

$$\phi = 2.23 \text{ eV}$$

$$b) \quad KE_{\max} = 0 \text{ for cutoff } \lambda$$

$$KE_{\max} = \frac{h \cdot c}{\lambda} - \phi$$

$$0 = \frac{(1240 \text{ eV} \cdot \text{nm})}{\lambda} - 2.23 \text{ eV}$$

$$\lambda = 555 \text{ nm}$$

$$c) \quad \text{Find } f \text{ for } 555 \text{ nm}$$

$$v = f \cdot \lambda$$

$$(3 \times 10^8 \text{ m/s}) = f \cdot (555 \times 10^{-9} \text{ m})$$

$$f = 5.4 \times 10^{14} \text{ Hz}$$