E2.1

$$K = h\nu - w_o$$

$$K = \frac{hc}{\lambda} - w_o$$

$$K = \frac{1240\ eV\,nm}{589\ nm} - 2.3eV < 0$$

No, this light is not energetic enough. To determine the longest possible wavelength (lowest energy

$$K = \frac{hc}{\lambda_{max}} - w_o = 0$$

$$\lambda_{max} = \frac{hc}{w_o} = \frac{1240\ eV\,nm}{2.3eV} = 539\ nm$$

or $5390\ \text{Å} = \lambda_{max}$

E2.2

$$K = h\nu - w_o$$

a) $$K = \frac{hc}{\lambda} - w_o = 1240\ \frac{eV\,nm}{200\ nm} - 4.2eV$$

$$K_{max} = 2.0eV$$