$$h = 6.63 \times 10^{-34} \; Js \qquad\qquad 1.00 \; eV = 1.60 \times 10^{-19} \; J \qquad c = 3.00 \times 10^8 \; m/s$$
$$m_e = 9.11 \times 10^{-31} \; kg$$

Element	Silver__	Copper_	Potassium	Lead___	Aluminum	Magnesium	Platinum
Work Function	4.50 eV	4.75 eV	2.29 eV	4.25 eV	4.10 eV	3.66 eV	5.50 eV

A metal surface is irradiated with ultra-violet light with a wavelength of 220 nm. The maximum velocity of electrons emitted from the surface have a speed of 2.30×10^5 m/s.

a)   What is the work function of the metal?
$$KE_{max} = hf - \phi$$
Using $c = \lambda \; f$ *and a little algebra gives*
$$\phi = \frac{hc}{\lambda} - \frac{1}{2}mv_{max}^2$$
$$\phi = \frac{(6.63 \times 10^{-34} \; J \cdot s)(3.00 \times 10^8 \; m/s)}{(220 \times 10^{-9} \; m)} - \frac{1}{2}(9.11 \times 10^{-31} \; kg)(2.30 \times 10^5 \; m/s)^2$$
$$\phi = 8.8 \times 10^{-19} \; J$$
Convert this into electron volts gives
$$\phi = (8.8 \times 10^{-19} \; J)\frac{(1.00 \; eV)}{(1.60 \times 10^{-19} \; J)} = 5.5 \; eV$$

b)   What is the most likely metal composing the surface based on the table given above?
The most likely metal on the surface is platinum.