

MCQ

- 1) In the Compton effect, a photon of wavelength λ and frequency f hits an electron that is initially at rest. Which one of the following occurs as a result of the collision?
 - A. The photon is absorbed completely.
 - B. The photon gains energy, so the final photon has a frequency greater than f .
 - C. The photon gains energy, so the final photon has a wavelength greater than λ .
 - D. The photon loses energy, so the final photon has a frequency less than f .
 - E. The photon loses energy, so the final photon has a wavelength less than λ .

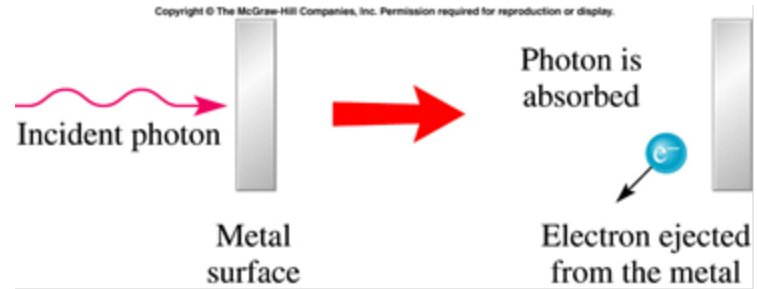
- A tunable laser is directed upon a metal. When the wavelength of the light just reaches 720 nm, electrons are ejected from the surface. What is the work function of the metal?

A. 0.58 eV

B. 1.7 eV

C. 520 eV

D. 1960 eV



- In the photoelectric effect (for a given target and a given frequency of the incident light), which of these quantities, if any, depend upon the intensity of the incident light beam: (a) K_{\max} of electron, (b) the maximum photoelectric current, (c) the stopping potential, (d) the cutoff frequency?
 - A. a and c
 - B. b
 - C. a, b, and c
 - D. b and d