

P2

a) energia dels fotons incidents: $E_i = hf = 9,945 \cdot 10^{-19} \text{ J} = 6,21 \text{ eV}$ **[0,3]**

$$c = \lambda f \Rightarrow f = c/\lambda = 1,50 \cdot 10^{15} \text{ Hz} \quad \mathbf{[0,2]}$$

efecte fotoelèctric: $E_i = W + E_e$ **[0,3]**

$$W = E_i - E_e = 6,21 - 1,97 = 4,24 \text{ eV} \quad (=6,79 \cdot 10^{-19} \text{ J}) \quad \mathbf{[0,2]}$$

$$\text{b) } E_e = \frac{1}{2} m_e v_e^2 \Rightarrow v_e = \sqrt{\frac{2E_e}{m_e}} = 8,32 \cdot 10^5 \frac{\text{m}}{\text{s}} \quad \mathbf{[0,4]}$$

$$p_e \lambda_e = h \Rightarrow \lambda_e = \frac{h}{m_e v_e} = 8,75 \cdot 10^{-10} \text{ m} \quad \mathbf{[0,6]}$$

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