P.1 Soln.:

Energía y longitud de onda emitida para "serie de Balmer" (n_{final} = 2):

$$\Delta E_{Max} = R_H \times Z^2 \left(\frac{1}{2^2} - 0 \right) [cm^{-1}] \rightarrow \lambda_{Min} = \frac{1}{\Delta E_{Max}} [cm]$$

$$\Delta E_{Min} = R_H \times Z^2 \left(\frac{1}{2^2} - \frac{1}{3^2} \right) [cm^{-1}] \rightarrow \lambda_{Max} = \frac{1}{\Delta E_{Min}} [cm]$$

Plantear correctamente la forma de calcular (3pts)

i) He+ (Z=2)

$$\Delta E_{Max} = R_H \times Z^2 \left(\frac{1}{2^2} - 0 \right) [cm^{-1}] \rightarrow \lambda_{Min} = \frac{1}{\Delta E_{Max}} [cm]$$

$$\Delta E_{Min} = R_H \times Z^2 \left(\frac{1}{2^2} - \frac{1}{3^2} \right) [cm^{-1}] \rightarrow \lambda_{Max} = \frac{1}{\Delta E_{Min}} [cm]$$

Obtener los valores correctos e identificar el ión (3 pts)

i) He^+ (Z=2)

$$\lambda_{Min} = 911.7 \times 10^{-8} [cm] = 911.7 [A]$$
$$\lambda_{Max} = 1641.1 \times 10^{-8} [cm] = 1641.1 [A]$$

i) LI^{+2} (Z=3)

$$\lambda_{Min} = 405.2 \times 10^{-8} [cm] = 405.2 [A]$$
$$\lambda_{Max} = 729.4 \times 10^{-8} [cm] = 729.4 [A]$$

i) Be^{+3} (Z=4)

$$\lambda_{Min} = 227.9 \times 10^{-8} [cm] = 227.9 [A]$$
$$\lambda_{Max} = 410.2 \times 10^{-8} [cm] = 410.2 [A]$$

i) B^{+4} (Z=5)

$$\lambda_{Min} = 36.4 \times 10^{-8} [cm] = 36.4 [A]$$
$$\lambda_{Max} = 262.5 \times 10^{-8} [cm] = 262.5 [A]$$