Understanding the planetary model

What the value of ω that satisfies the Bohr model given the following data.

$$\varepsilon_0 = 8.85\ x\ 10^{-12} N^{-1} C^2 / m^2$$

$$\mathrm{m_e} = 9.11\ x\ 10^{-31}\ kg$$

$$\mathrm{q_e} = -\mathrm{q_p} = 1.602\ x\ 10^{-19}\ C$$

$$\mathrm{R} = 5.29\ \mathrm{x}\ 10^{-10}\ m$$

Given the balance of forces that must exist according to the Bohr model.

$$\mathrm{F_{attract}} = \mathrm{F_{centripedal}}$$

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In this case the balance of forces gives us:

$$\frac{q_e q_p}{4\pi\varepsilon_0 R^2} = m_e \omega^2 R$$

Solve for the angular frequency:

$$\omega = \sqrt{\frac{q_e q_p}{4\pi\varepsilon_0 m_e R^3}}$$

And rewrite it in units of frequency in s.

$$\nu = \sqrt{\frac{q_e q_p}{16\pi^3\varepsilon_0 m_e R^3}}$$

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Plugging in the numbers we find:

$$\nu = \sqrt{\frac{\left(1.60\ x\ 10^{-19}\ C\right)^2}{16\pi^3(8.85\ x\ 10^{-12}\ N^{-1}C^2/m^2)(9.11\ x\ 10^{-31}\ kg)(5.29\ \mathrm{x}\ 10^{-11}\ m)^3}}$$

and the frequency is:

$$\nu = 6.56\ x\ 10^{15}\ s^{-1}$$