Calculate the energy associated with the first orbit of He^+ . What is the radius of this orbit?

ANSWER

(a) calculate the energy associated with the first orbit of He^+

$$\mathrm{E} = -13.6\frac{\mathrm{z}^2}{\mathrm{n}^2}$$

$$= -13.6 \times \frac{2^2}{1^2} = 54.4\ \mathrm{ev}$$

Radius of orbit $\mathrm{r} = 529 \times \frac{\mathrm{n}^2}{\mathrm{z}}\ \mathrm{nm}$

$$= 529 \times \frac{12}{2}$$

$$= 264.5\ \mathrm{nm}$$