

30. For  $n = 1$

$$\begin{aligned} E_1 &= -\frac{m_e e^4}{8\varepsilon_0^2 h^2} \\ &= -\frac{(9.11 \times 10^{-31} \text{ kg})(1.6 \times 10^{-19} \text{ C})^4}{8(8.85 \times 10^{-12} \text{ F/m})^2 (6.63 \times 10^{-34} \text{ J}\cdot\text{s})^2 (1.60 \times 10^{-19} \text{ J/eV})} \\ &= -13.6 \text{ eV} . \end{aligned}$$