

Worksheet # 2

Monday, January 22, 2024

Name**Question (5 pts):**

The effective potential acting on the electron in the hydrogen atom is

$$U_{\text{eff}}(r) = -\frac{e^2}{r} + \frac{l(l+1)\hbar^2}{2\mu r^2}. \text{ Sketch (qualitatively) the dependence of } U_{\text{eff}} \text{ on } r \text{ for}$$

$l=0, 1, \text{ and } 2$ and draw examples of energies at which bound and unbound states occur.