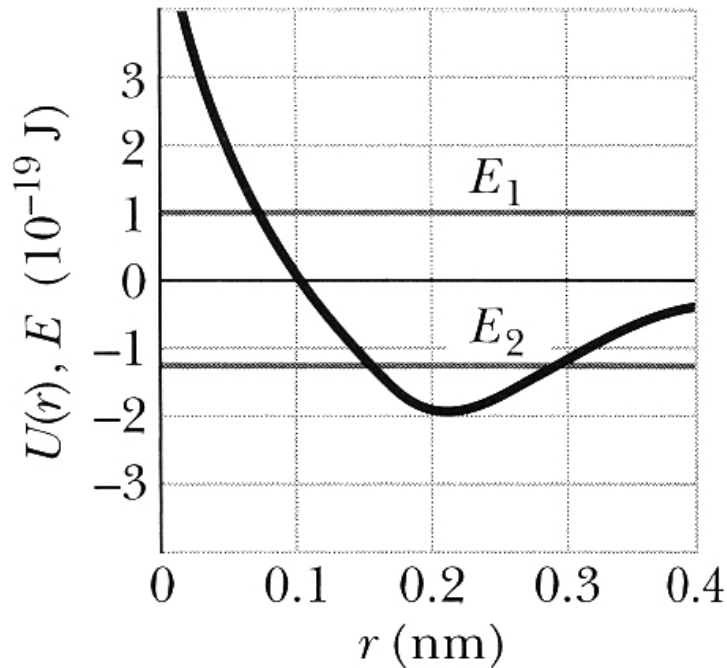


AP Physics

Worksheet 02 – Potential Energy



The illustration shows the potential energy of a molecule composed of two atoms separated by distance r as a function of r .

Describe the motion of the atoms if:

- The total mechanical energy E of the system is greater than zero (E_1)
- If E is less than zero (E_2)

For $E = 1 \times 10^{-19}$ J, and $r = 0.3$ nm,

- find the potential energy of the system
- total kinetic energy of the system
- force (magnitude and direction) acting on each atom

For what values of r is the force

- attractive
- repulsive
- zero