12. In a hydrogen atom, if the energy of an electron in the ground state is 13.6 eV, then that in the 2nd excited state is

(1) 1.51 eV

(2) 3.4 eV

(3) 6.04 eV

(4)13.6 eV

Solution:

The 3^{rd} energy level is the 2^{nd} excited state.

n=3

$E_n = 13.6/n^2 = 13.6/9 = 1.5$ eV

Hence option (1) is the answer.