



3. Which of the following is the energy of a possible excited state of hydrogen?

- (1) +13.6 eV (2) -6.8 eV (3) -3.4 eV (4) +6.8 eV

Answer: Applying elimination method we know that excited state energy of hydrogen is always negative so option (1) and (4) are not possible.

Now n th state energy of hydrogen is given by

$$E_n = -\frac{13.6}{n^2} \text{ eV}$$

$$E_1 = -\frac{13.6}{1} = -13.6 \text{ eV}$$

$$E_2 = -\frac{13.6}{4} = -3.4 \text{ eV}$$

So correct option is (3) -3.4 eV