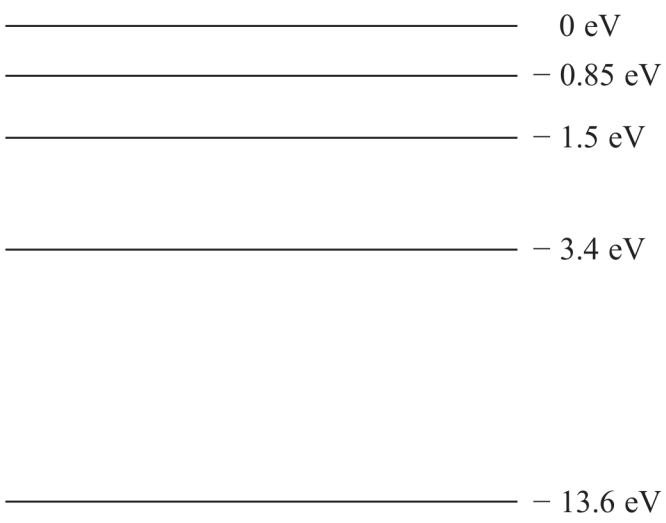
14 The diagram shows some of the energy levels for an atom of hydrogen.



When an electron with a kinetic energy of 12.3 eV interacts with this atom, an electron in the atom moves from the −13.6 eV level to the −1.5 eV level.

When a photon with a photon energy of 12.3 eV is incident on this atom, the electron in the atom at the −13.6 eV level remains at the –13.6 eV level.

Explain these observations.

(4)

(Total for Question 14 = 4 marks)