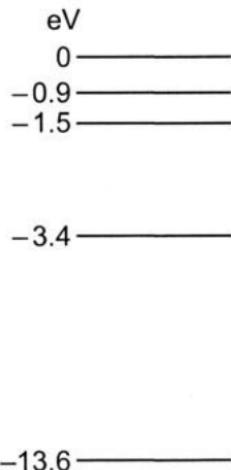


37 The diagram shows five energy levels of the hydrogen atom, labelled in the unit of electron-volt.



Which statement is correct?

- A An atom in the level  $-3.4\text{ eV}$  can change levels by emitting photons of energy  $1.9\text{ eV}$ ,  $2.5\text{ eV}$ ,  $3.4\text{ eV}$  and  $10.2\text{ eV}$ .
- B An atom in the level  $-3.4\text{ eV}$  can emit a photon of wavelength  $650\text{ nm}$  to arrive in the level  $-1.5\text{ eV}$ .
- C An electron with energy  $10.2\text{ eV}$  colliding with an atom in level  $-13.6\text{ eV}$  can move it to the level  $-3.4\text{ eV}$  by losing all of its kinetic energy.
- D Most hydrogen atoms will be found in the level with zero energy.

38 Which statement about the energy bands in an ideal intrinsic semiconductor is correct?