

## Chemguide – questions

### BONDING IN ORGANIC CHEMISTRY - ORBITALS

- Using the electron in a hydrogen atom as an example, explain the difference between an orbit and an orbital.
- The electronic structure of carbon is  $1s^2 2s^2 2p_x^1 2p_y^1$ .
  - With the help of a simple sketch, explain the shape of the 1s orbital.
  - How does a 2s orbital differ from a 1s orbital?
  - Draw a simple sketch to show the shape of a  $2p_x$  orbital.
  - How does a  $2p_y$  orbital differ from a  $2p_x$  orbital?
  - Carbon has 4 electrons in the 2-level. With the help of a simple energy diagram, explain why the 2-level electrons don't arrange themselves as  $2s^1 2p_x^1 2p_y^1 2p_z^1$ .