

Solutions

Each answer shows the steps, then the **result**.

2.1

- Any four of: carbon, hydrogen, oxygen, nitrogen, phosphorus, sulfur

2.2

- Four

2.3

- It forms four stable covalent bonds and can bond to itself and many elements

3.1 C

- four covalent bonds

3.2

(a)

- Carbon

(b)

- Its four bonds let carbon atoms link into long chains, add side branches, and close into rings, giving many possible skeletons

3.3

- Four bonding sites allow a huge number of stable arrangements of atoms, so an enormous variety of different molecules (and functions) can be built