

Unit 3: Chemical bonding

Subunit 3.6: Intermolecular forces, electronegativity and bond properties

Topical Question No: 1

31 Which molecules have an overall dipole moment?

- 1 carbon monoxide, CO
- 2 phosphine, PH₃
- 3 carbon dioxide, CO₂

Topical Question No: 2

4 The boiling points of methane, ethane, propane and butane are given.

compound	CH ₄	CH ₃ CH ₃	CH ₃ CH ₂ CH ₃	CH ₃ CH ₂ CH ₂ CH ₃
boiling point/K	112	185	231	273

Which statement explains the increase in boiling point from methane to butane?

- A Closer packing of molecules results in stronger van der Waals' forces.
- B More covalent bonds are present and therefore more energy is required to break the bonds.
- C More electrons in the molecules results in stronger van der Waals' forces.
- D More hydrogen atoms in the molecules results in stronger hydrogen bonding.

Answer Key

1. Error
2. Error