

Solutions

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

2.1

- Covalent network

2.2

- Molecular — only weak intermolecular forces need to be overcome

2.3

- Metallic

3.1 C

- hard, very high melting, non-conducting fits a covalent-network solid

3.2

(a)

- Ionic

(b)

- In the solid the ions are fixed; when molten the ions are free to move and carry charge

3.3

- Melting dry ice (CO_2) breaks only weak **intermolecular** forces between molecules; melting SiO_2 breaks strong **covalent bonds** throughout the network, which needs far more energy, hence the much higher temperature