

**GCSE Chemistry A (Gateway Science)**

**J248/01** Chemistry A C1-C3 and C7 (Foundation Tier)

**Question Set 22**

1\* Look at the data about some substances.

Substance	Melting point (°C)	Boiling point (°C)	Does it conduct Electricity?	Density (g/cm <sup>3</sup> )
A	0	100	No	1.0
B	1085	2562	Good conductor	9.0
C	801	1413	Solid does not conduct but conducts when melted or when dissolved in water	2.2

What is the type of **bonding** present in each of substances **A**, **B** and **C**?

Explain how you can tell.

- Substance A has a low melting point & boiling point so it is likely to be water / hydrogen bonded or covalently bonded structures. But since it can't conduct electricity, A is a covalently bonded structure.
- Substance B has high melting & boiling points and is a good conductor thus it is likely to be a giant covalent structure with free delocalised electrons like graphite or metal (with metallic bonding). But the density is high meaning it has metallic bonding.
- Substance C has high melting & boiling point and does not conduct electricity as a solid but does when molten or dissolved in water so it's likely to have ionic bonding. When ionic compound dissolve in water or melt, the ions can move freely and carry charge.

[6]

**Total Marks for Question Set 22: 6**

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