**Additional questions on justifying properties of substances**

1. Compare and Contrast the properties of the following substances

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | melts in a bunsen flame (approx 800 °C) | dissolves in water | conducts electricity |
| A | ✓ | X | X |
| B | X | ✓ | only when aqueous |
| C | X | X | ✓ |

2. Two different oxides, represented as PO2 and QO2. One (PO2) has a very low boiling point and is a gas at room temperature whereas the other (QO2) has very high melting and boiling points and is a solid.

3. Fluorine, chlorine, bromine and iodine form ionic bonds with sodium eg NaF, NaCl, these ionic substances have a crystalline appearance. In an elemental form, the halogens form diatomic molecules eg F2, Cl2, I2, these molecules can be in different states: gases, a liquid or solid.

4. Diamond and graphite are allotropes (different physical forms of the same element) of carbon. Diamond is one of the hardest substances known to man whereas graphite is very soft and is used as a lubricant.

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