



1 Give the formula of the following ions.

magnesium ..... carbonate ..... zinc(II) .....

2 Give the formula of the following ionic compounds.

sodium oxide ..... aluminium sulfide .....

calcium hydroxide ..... ammonium sulfate .....

3 Identify the structure type of the following substances.

|                |                               |         |                           |                      |                 |       |                 |      |
|----------------|-------------------------------|---------|---------------------------|----------------------|-----------------|-------|-----------------|------|
| name           | propane                       | diamond | buckminster<br>-fullerene | potassium<br>bromide | bromine         | argon | copper<br>oxide | zinc |
| formula        | C <sub>3</sub> H <sub>8</sub> | C       | C <sub>60</sub>           | KBr                  | Br <sub>2</sub> | Ar    | CuO             | Zn   |
| giant covalent |                               |         |                           |                      |                 |       |                 |      |
| ionic          |                               |         |                           |                      |                 |       |                 |      |
| metallic       |                               |         |                           |                      |                 |       |                 |      |
| molecular      |                               |         |                           |                      |                 |       |                 |      |
| monatomic      |                               |         |                           |                      |                 |       |                 |      |

4 This question is about some different forms (allotropes) of the element carbon.

a Explain why diamond, graphite and graphene have high melting points. ....

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b Explain why graphite and graphene conduct electricity. ....

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c Explain why diamond is hard but graphite is soft. ....

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