

Structure and bonding – GCSE Combined Science Chemistry**1. No.7.4-7.6**

What is the number of bonds formed by each carbon atom in diamond?

[1 mark]Tick (✓) **one** box.

2

☐

3

☐

4

☐

8

☐Give **two** physical properties of diamond.**[2 marks]**

1

2

Name **two** other substances with giant covalent structures.**[2 marks]**

1

2

2. No.2.4-2.6

What is the number of bonds formed by each carbon atom in diamond?

[1 mark]

Tick (✓) **one** box.

2

☐

3

☐

4

☐

8

☐

Give **two** physical properties of diamond.

[2 marks]

1

2

Name **two** other substances with giant covalent structures.

[2 marks]

1

2

3. No.5.4

Table 3 shows the electronic structure of hydrogen and oxygen.

Table 3

Element	Electronic structure
Hydrogen	1
Oxygen	2,6

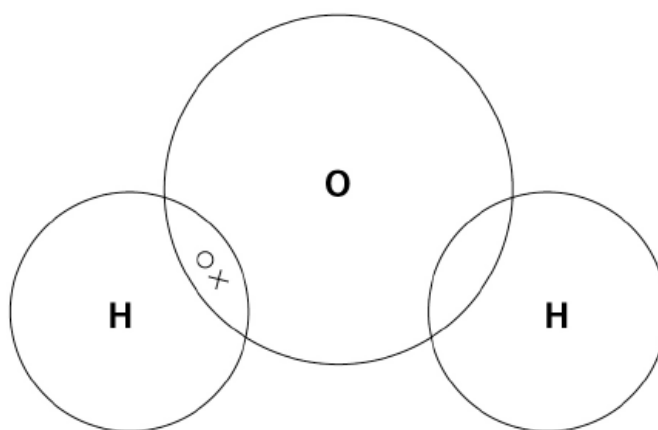
Figure 5 shows part of a dot and cross diagram of a molecule of water (H_2O).

Complete the dot and cross diagram.

You should show only the electrons in the outer energy levels.

[2 marks]

Figure 5



4. No.5.5

Oxygen and sulfur are examples of simple molecules.

Complete the sentence.

Choose the answer from the box.

[1 mark]

covalent	ionic	metallic
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There are _____ bonds between the atoms of oxygen in an oxygen molecule.

5. No.6.4

Chlorine reacts with sodium and with hydrogen.

Compare the structure and bonding in sodium chloride and hydrogen chloride.

[6 marks]
