

**AQA – Bonding – A2 Chemistry P3**

1. June/ 2020/Paper\_3/No.8

Which has a bond angle of  $109.5^\circ$ ?**[1 mark]**

A C (diamond)

B C (graphite)

C  $\text{NH}_2^-$ D  $\text{NH}_3$ 

2. June/ 2019/Paper\_3/No.31

Which is **not** responsible for conduction of electricity?**[1 mark]**

A The sodium ions in molten sodium chloride

B The electrons between layers of carbon atoms in graphite

C The bonding electrons in a metal

D The lone pair electrons on water molecules

## 3. June/ 2019/Paper\_3/No.1` (1.3)

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Draw a diagram to show the shape of a molecule of  $\text{H}_2\text{O}$   
Include any lone pairs of electrons.

State the H–O–H bond angle.

Explain this shape and bond angle.

**[4 marks]**

Diagram

Bond angle \_\_\_\_\_

Explanation \_\_\_\_\_

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4. June/2021/Paper\_3/No.10

Which has the electron configuration of a noble gas?

[1 mark]

A  $\text{H}^+$

B  $\text{O}^-$

C  $\text{Se}^{2-}$

D  $\text{Zn}^{2+}$

5. June/2021/Paper\_3/No.13

Which species has a lone pair of electrons on the central atom?

[1 mark]

A  $\text{CO}_2$

B  $\text{SO}_2$

C  $\text{PCl}_6^-$

D  $\text{SO}_4^{2-}$

6. June/2021/Paper\_3/No.14

In which substance do covalent bonds break when it melts?

[1 mark]

A hexane

B ice

C iodine

D silicon dioxide

7. June/2021/Paper\_3/No.15

In which molecule are all the atoms in the same plane?

[1 mark]

A  $\text{CH}_3\text{CHO}$

B  $\text{CH}_3\text{NH}_2$

C  $\text{C}_6\text{H}_5\text{Cl}$

D  $\text{C}_6\text{H}_5\text{CH}_3$

8. June/2021/Paper\_3/No.16

Which molecule has a permanent dipole?

[1 mark]

A  $\text{BF}_3$

B  $\text{NH}_3$

C  $\text{SiCl}_4$

D  $\text{SO}_3$

9. June/2021/Paper\_3/No.22

Which substance contains delocalised electrons?

[1 mark]

A cyclohexane

B graphite

C iodine

D sodium chloride