

1. June/2022/Paper_11/No.5

In which structure are three atoms bonded together in a straight line?

- A poly(ethene), $-(\text{CH}_2\text{CH}_2)_n-$
- B propane, C_3H_8
- C silicon tetrachloride, SiCl_4
- D sulfur hexafluoride, SF_6

2. June/2022/Paper_11/No.6

Which statement about aluminium chloride is correct?

- A Aluminium chloride has a much higher melting point than magnesium chloride due to the small size of the aluminium ion.
- B Anhydrous aluminium chloride reacts vigorously with water to form a solution with a pH greater than 7.
- C Each Al_2Cl_6 molecule found in aluminium chloride vapour contains two coordinate bonds.
- D The bonding between aluminium and chlorine is strongly ionic due to the large difference in electronegativity.

3. June/2022/Paper_13/No.5

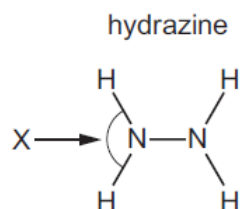
Which compound has the smallest difference in electronegativity between its two elements?

- A KF
- B KBr
- C LiF
- D LiBr

4. June/2022/Paper_13/No.6

VSEPR theory should be used to answer this question.

Hydrazine has the following structure.



What is the predicted bond angle X?

- A 90°
- B 107°
- C 109.5°
- D 120°

5. June/2022/Paper_22/No.1(a)

(a) Magnesium has a melting point of 650°C and high electrical conductivity.

Explain these properties of magnesium by referring to its structure and bonding.

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..... [2]

6. June/2022/Paper_23/No.3a (i)

G belongs to a group of compounds called ethers.

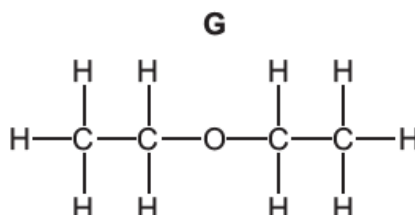


Fig. 3.1

(a) When **G**, $\text{C}_4\text{H}_{10}\text{O}$, is heated, thermal decomposition occurs.

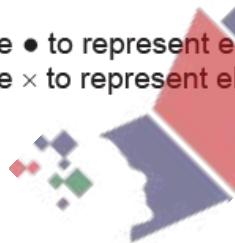


(i) The atoms in a molecule of CO are held together by a triple covalent bond. One of these bonds is a coordinate (dative covalent) bond.

Draw a dot-and-cross diagram to show the arrangement of outer electrons in a CO molecule.

Use \bullet to represent electrons from an oxygen atom.

Use \times to represent electrons from a carbon atom.



[1]