Year 12 Chemistry 28/06/21 – 02/07/21

WORKSHEET 5

Day 1

1. Which of the following Group I element is most electronegative?
A. Hydrogen (H)
B. Lithium (Li)
C. Sodium (Na)
D. Potassium (K)

2. The compound which has two lone pairs of electrons on the central atom is
A. carbon dioxide (CO_2).
B. boron trichloride (BCl_3).
C. hydrogen sulphide (H_2S).
D. carbon tetrachloride (CCl_4).

3. Metallic solids conduct electricity due to the presence of
A. freely moving ions.
B. giant metallic structure.
C. freely moving electrons.
D. electrostatic forces of attraction.

Day 2

4. The trend in electronegativity changes across the Period and down the Group of a Periodic Table.

(i) State the trend in electronegativity across the Period of a Periodic Table.

(ii) Provide a reason for the trend stated in part (i) above.

5. Draw the Lewis structure of oxygen gas molecule (O_2) and determine its shape.

Day 3

6. Based on the structure, explain why ammonia is a polar molecule.

7. The electron group geometry for water (H_2O) is
A. linear.
B. bent shape.
C. tetrahedral.
D. trigonal planar.

Day 4

1. Which of the following shapes of molecule is asymmetrical?
A. Linear
B. Tetrahedral
C. Trigonal planar
D. Trigonal pyramidal

2. Which of the following solids is composed of positive and negative ions held by strong electrostatic forces of attraction?
A. Graphite
B. Diamond
C. Silicon dioxide
D. Sodium chloride

3. Which of the following type of solid has low melting and boiling points?
A. Ionic
B. Metallic
C. Molecular
D. 3-dimensional network

Day 5

4. State a reason for the following statements based on their structure and bonding:

(i) Diamond is a non-conductor of electricity.

(ii) Crystals of sodium chloride are brittle.

(iii) Linear solids like plastic sulphur are soft and stretchable.