

Name:

1. What is meant by a “**polar covalent bond**”?
Give an example of a molecule with such a bond (or bonds).
2. Define the term **electronegativity**. How does the dipole moment in a molecule arise?
Illustrate your answer using a simple molecule.
3. Provide **Lewis dot** structures for CO_2 and CO_3^{2-} . Predict which of these, if any, would have (a) resonance forms or (b) a dipole moment providing reasoning for your answer.
4. Using **VSEPR theory**, what are the electronic and molecular geometries for SCl_2 ?

5. Give the **electronic configuration** for:
iron

6. A lead acetate solution { $\text{Pb}(\text{CH}_3\text{COO})_2$ } is reacted with sodium chloride solution to form a precipitate of lead(II) chloride. A solution of 1068 mL of 244g/L lead acetate is reacted with 500 mL of 0.850 M sodium chloride.

- ▶ Write down the balanced equation.
- ▶ What is the concentration of the lead acetate solution in mol/L?
- ▶ How many kg of lead chloride are formed?