

12 Chemistry : Dot Diagram Revision

Complete the table below.

Species	Structural formula (showing all valence electrons)	Draw shape (include all atoms)	Name shape
Iodate ion IO_3^-			
Metasilicate ion SiO_3^{2-}			
Selenium disulfide SeS_2			
Carbon monoxide CO			
Sulfur trioxide SO_3			
Sulfate ion SO_4^{2-}			
Carbonate ion CO_3^{2-}			
HCN			

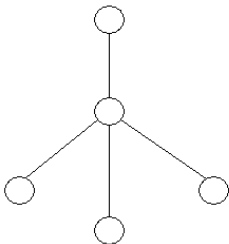
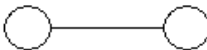
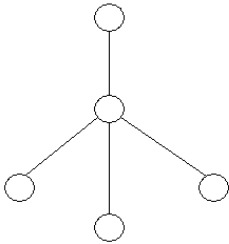
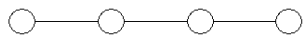
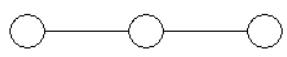
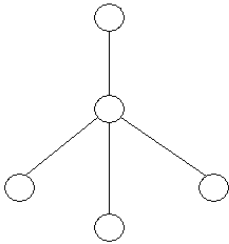

NH_4^+			
OH^-			
PO_4^{3-}			
C_2H_2			
CO_2			
CHCl_3			
N_2			
OCl_2			

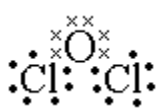
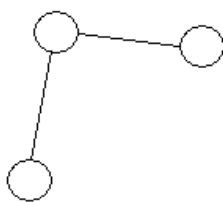
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12 Chemistry : Dot Diagram Revision **ANSWERS**

Complete the table below.

Species	Structural formula (showing all valence electrons)	Draw shape (include all atoms)	Name shape
Iodate ion IO_3^-			Pyramidal
Metasilicate ion SiO_3^{2-}			Triangular planar
Selenium disulfide SeS_2			Bent
Carbon monoxide CO			Linear
Sulfur trioxide SO_3			Triangular planar
Sulfate ion SO_4^{2-}			Tetrahedral
Carbonate ion CO_3^{2-}			Triangular planar
HCN			Linear

NH_4^+	$\left[\begin{array}{c} \text{H} \\ \times \\ \text{H} \times \text{N} \times \text{H} \\ \times \\ \text{H} \end{array} \right]^+$		Tetrahedral
OH^-	$\left[\begin{array}{c} \times \times \times \\ \times \text{O} \times \text{H} \\ \times \times \times \end{array} \right]^{-1}$		Linear
PO_4^{3-}	$\left[\begin{array}{c} \times \times \times \\ \times \text{O} \times \times \times \\ \times \times \times \end{array} \right]^{-3}$		Tetrahedral
C_2H_2	$\text{H} \times \text{C} \times \times \text{C} \times \text{H}$		Linear
CO_2	$\begin{array}{c} \times \\ \times \text{O} \times \times \text{C} \times \times \text{O} \times \\ \times \end{array}$		Linear
CHCl_3	$\begin{array}{c} \times \\ \times \text{Cl} \times \times \text{C} \times \times \text{Cl} \times \\ \times \end{array}$		Tetrahedral
N_2	$\text{:N} \times \times \text{N:}$		Linear

OCl_2	 <p>The Lewis structure shows a central oxygen atom (O) with two single bonds to chlorine atoms (Cl). Each bond is represented by a pair of dots (electron pair). There are also three lone pairs of dots on each chlorine atom, and two lone pairs of dots on the oxygen atom. Small 'x' marks are placed above the oxygen atom and between the bonds.</p>	 <p>A diagram showing the V-shaped molecular geometry of the OCl2 molecule. It consists of three circles representing atoms: a central circle at the top and two circles below it, connected by lines representing bonds. The angle between the bonds is approximately 110 degrees.</p>	V-shaped or bent
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