

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			

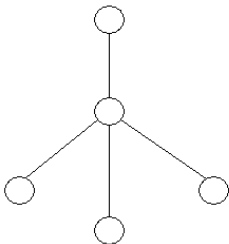
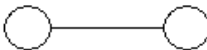
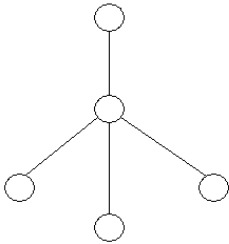
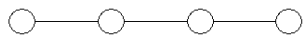
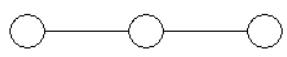
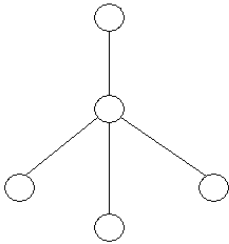

NH_4^+			
OH^-			
PO_4^{3-}			
C_2H_2			
CO_2			
CHCl_3			
N_2			
OCl_2			

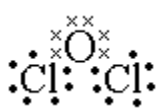
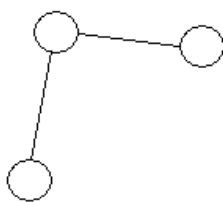
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12 Chemistry : Dot Diagram Revision **ANSWERS**

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	$\begin{array}{c} \times \times \times \\ \times \text{Cl} \times \text{C} \times \text{Cl} \times \\ \times \times \times \end{array}$		Tetrahedral
N_2	$\times \text{N} \times \times \text{N} \times$		Linear

OCl_2	 <p>The Lewis structure shows a central oxygen atom (O) bonded to two chlorine atoms (Cl). The oxygen atom has two lone pairs of electrons, represented by four 'x' marks above it. Each chlorine atom has three lone pairs of electrons, represented by six dots around each 'Cl' symbol.</p>	 <p>The diagram shows three circles representing atoms. One circle is at the top left, another at the top right, and a third at the bottom left. Lines connect the top-left circle to the top-right circle, and the top-left circle to the bottom-left circle, forming a V-shape that represents the bent molecular geometry of the OCl2 molecule.</p>	V-shaped or bent
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