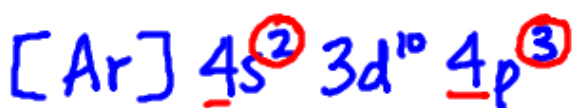


Unit 3

ions	${}^{80}_{35}\text{Br}$	$p^+ = 35$	$n^0 = 45$	$e^- = 35$
	${}^{80}_{35}\text{Br}^{-1}$	$p^+ = 35$	$n^0 = 45$	$e^- = 36$
isotopes	${}^{80}_{35}\text{Br}$	$p^+ = 35$	$n^0 = 45$	$e^- = 35$
	${}^{79}_{35}\text{Br}$	$p^+ = 35$	$n^0 = 44$	$e^- = 35$

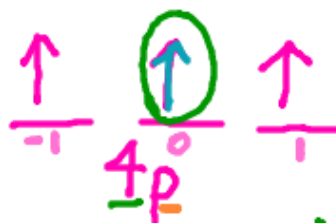
isotopes → same p^+ , diff. n^0
ions → same p^+ , diff. e^-

Unit 4



val. e^- ? 5

orb. not. for HOEL?



dot diagram?



$n=4$
 $l=1$
 $m=0$
 $\Delta = +\frac{1}{2}$

What type of EM radiation is emitted when an electron falls from the 4th energy level to the 1st energy level? ultraviolet

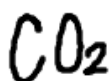
BOND TYPES

IONIC

- transfer of e^-
- metal & nonmetal
- high MP
- crystalline solids
- soluble in water
- conduct electricity when (l) or (aq)

COVALENT

- sharing of e^-
- 2 or more nonmetals
- low MP
- non-crystal solids, or liquid, gas
- insoluble in water
- don't conduct when liquid or (aq)



$$\begin{array}{r}
 C: 1 \times 4e^- = 4 \\
 O: 2 \times 6e^- = 12 + \\
 \quad \quad \quad \underline{16} \\
 \quad \quad \quad - 4 \\
 \quad \quad \quad \underline{12} \\
 \quad \quad \quad - 12 \\
 \quad \quad \quad \underline{0}
 \end{array}$$



AB_2
linear

nonpolar molecule

polar covalent bonds -
bonds are btn. 2 diff.
nonmetals

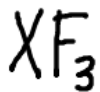


↑
nonpolar
covalent
bond



polar molecule
unshared e^- pr. on
central atom

Unit 7



To determine oxid. # of unknown element in compd,

$$\sum_{\text{sum of}} \left(\begin{array}{l} \text{\# of atoms} \\ \text{of element} \end{array} \cdot \begin{array}{l} \text{element's} \\ \text{oxid. \#} \end{array} \right) = 0$$

$$(1 \cdot X) + (3 \cdot -1) = 0$$



$$X - 3 = 0$$

$$X = 3$$

$C_6H_{12}O_6 \rightarrow$ actual (molecular) formula

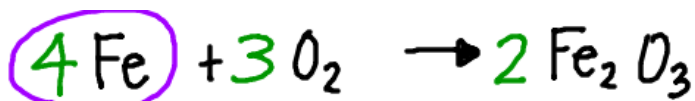
CH_2O empirical

Unit 8



Na is higher than Pb on Act. Series, so rxn. happens.

Unit 9



of grams of Fe_2O_3 produced when 35.0 g Fe react with ~~35.0 g O_2~~ ?

$$\frac{35.0 \text{ g Fe}}{55.8 \text{ g}} \left| \frac{1 \text{ mole}}{55.8 \text{ g}} \right. = \frac{0.627 \text{ moles Fe}}{4} = 0.157$$

$$\frac{35.0 \text{ g O}_2}{32 \text{ g}} \left| \frac{1 \text{ mole}}{32 \text{ g}} \right. = \frac{1.09 \text{ moles O}_2}{3} = 0.363$$

$$\frac{0.627 \text{ moles Fe}}{4} \cdot \frac{x \text{ moles Fe}_2\text{O}_3}{2}$$

$$x = 0.3135 \text{ moles Fe}_2\text{O}_3$$

$$\frac{0.3135 \text{ moles}}{1 \text{ mole}} \left| \frac{159.8 \text{ g}}{1 \text{ mole}} \right.$$

$$50.1 \text{ g}$$

Unit 10

Volume of $\frac{62.7 \text{ g}}{n}$ sample of N_2 at $\frac{745 \text{ torr}}{P}$ & $\frac{27^\circ\text{C}}{T}$?

$$PV = nRT$$

$$R = 0.0821 \frac{\text{L}\cdot\text{atm}}{\text{mole}\cdot\text{K}}$$

$$\frac{62.7 \text{ g N}_2}{28.0 \text{ g}} \left| \frac{1 \text{ mole}}{28.0 \text{ g}} \right. = 2.24 \text{ moles}$$

$$PV = nRT$$

$$(0.980) \cdot V = (2.24)(0.0821)(300)$$

$$V = 56.3 \text{ L}$$

$$\frac{745 \text{ torr}}{760 \text{ torr}} \left| \frac{1 \text{ atm}}{760 \text{ torr}} \right. = 0.980 \text{ atm}$$

$$27^\circ\text{C} + 273 = 300 \text{ K}$$

Unit 12

$Zn(NO_3)_2$ and Na_3PO_4
zinc nitrate sodium phosphate

sodium nitrate + zinc phosphate
(aq) (s)



What determines BP/FP?

$$\Delta T = m \cdot K \cdot i$$

- concentration of sol'n
 - covalent vs. ionic solute
larger i value = larger diff. in BP/FP
- $i = 1$ for covalent compounds
 $i =$ total # of pos. & neg. ions

