

Science 10 Final Exam Review
Section 2: Chemical Reactions

1. What's the difference between electrons and valence electrons?
2. Draw the electron dot (Lewis dot) diagram for the following elements:
 - a. Lithium
 - b. Boron
 - c. Bromine
 - d. Calcium
 - e. Arsenic
3. For each of the following bonding reactions, predict the type of bond and draw Lewis dot diagrams to show the electron change.
 - a. Lithium + oxygen
 - b. Calcium + fluorine
 - c. Aluminium + Iodine (covalent bond)
4. Write the chemical formulas for the following compounds
 - a. Potassium bromide
 - b. Calcium hydroxide
 - c. Tin (IV) chloride
 - d. Aluminium oxide
 - e. Lead (II) bicarbonate
 - f. Disulfur tetracarbide
 - g. Phosphorous pentachloride
5. Write the names for the following formulas
 - a. $\text{LiC}_2\text{H}_3\text{O}_2$
 - b. P_2O_5
 - c. $\text{Ca}(\text{OH})_2$
 - d. FeO
 - e. Br_2
 - f. BF_3
 - g. AlF_3
 - h. $\text{Co}_2(\text{CO}_3)_3$
 - i. $(\text{NH}_4)_2\text{SO}_4$
6. Balance the following chemical reactions:
 - a. $__ \text{C}_6\text{H}_6 + __ \text{O}_2 \rightarrow __ \text{H}_2\text{O} + __ \text{CO}_2$
 - b. $__ \text{NaI} + __ \text{Pb}(\text{SO}_4)_2 \rightarrow __ \text{PbI}_4 + __ \text{Na}_2\text{SO}_4$
 - c. $__ \text{NH}_3 + __ \text{O}_2 \rightarrow __ \text{NO} + __ \text{H}_2\text{O}$
 - d. $__ \text{Fe}(\text{OH})_3 \rightarrow __ \text{Fe}_2\text{O}_3 + __ \text{H}_2\text{O}$
 - e. $__ \text{HNO}_3 + __ \text{Mg}(\text{OH})_2 \rightarrow __ \text{H}_2\text{O} + __ \text{Mg}(\text{NO}_3)_2$
 - f. $__ \text{H}_3\text{PO}_4 + __ \text{NaBr} \rightarrow __ \text{HBr} + __ \text{Na}_3\text{PO}_4$
 - g. $__ \text{C} + __ \text{H}_2 \rightarrow __ \text{C}_3\text{H}_8$
7. Predict the type of reaction taking place AND balance the reaction
 - a. $__ \text{LiH} + __ \text{F}_2 \rightarrow __ \text{LiF} + __ \text{H}_2$ Type of reaction:
 - b. $__ \text{Fe}(\text{OH})_2 \rightarrow __ \text{FeO} + __ \text{H}_2\text{O}$ Type of reaction:
 - c. $__ \text{H}_2\text{SO}_4 + __ \text{Ga}(\text{OH})_3 \rightarrow __ \text{H}_2\text{O} + __ \text{Ga}_2(\text{SO}_4)_3$ Type of reaction:

- d. $\underline{\quad}$ Ni + $\underline{\quad}$ Pb(NO₃)₂ → $\underline{\quad}$ Ni(NO₃)₃ + $\underline{\quad}$ Pb Type of reaction:
- e. $\underline{\quad}$ C₄H₈ + $\underline{\quad}$ O₂ → $\underline{\quad}$ CO₂ + $\underline{\quad}$ H₂O Type of reaction:
- f. $\underline{\quad}$ Na₂SO₄ + $\underline{\quad}$ ZnBr₂ → $\underline{\quad}$ ZnSO₄ + $\underline{\quad}$ NaBr Type of reaction:
8. Write the formulas for the following word equations:
- Zinc and lead (II) nitrate react to form zinc nitrate and lead
 - Aluminum bromide and chlorine gas react to form aluminum chloride and bromine gas.
 - Sodium phosphate and calcium chloride react to form calcium phosphate and sodium chloride.
9. The grand daddy of 'em all... Predict the products of the following reactions AND balance the equations
- $\underline{\quad}$ Ca(OH)₂ + $\underline{\quad}$ HF →
 - $\underline{\quad}$ Pb(NO₃)₂ + $\underline{\quad}$ K₂CrO₄ →
 - $\underline{\quad}$ NaC₂H₃O₂ + $\underline{\quad}$ H₂SO₄ →
 - $\underline{\quad}$ Cu(OH)₂ + $\underline{\quad}$ H₃PO₄ →
 - $\underline{\quad}$ AgNO₃ + $\underline{\quad}$ Na₂CO₃ →