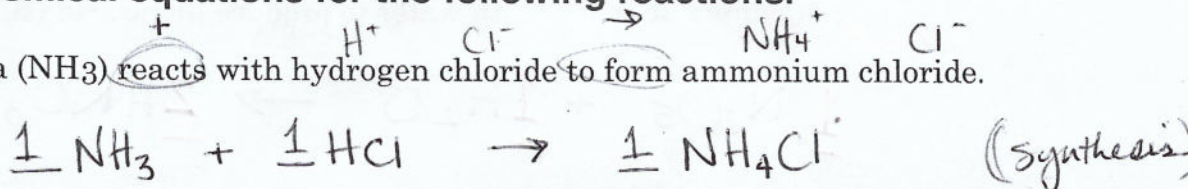


Unit 7 Chemical Formulas and Reactions Using Nomenclature to Balance Equations

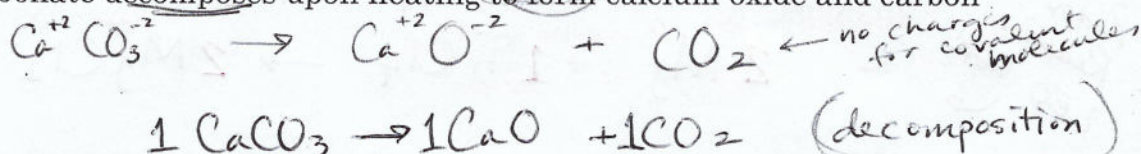
Name _____
Block _____

Write balanced chemical equations for the following reactions.

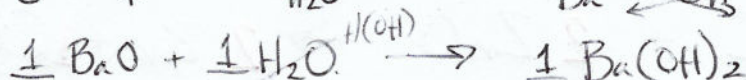
1. Ammonia (NH_3) reacts with hydrogen chloride to form ammonium chloride.



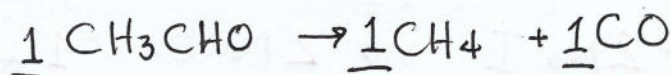
2. Calcium carbonate decomposes upon heating to form calcium oxide and carbon dioxide.



3. Barium oxide reacts with water to form barium hydroxide.

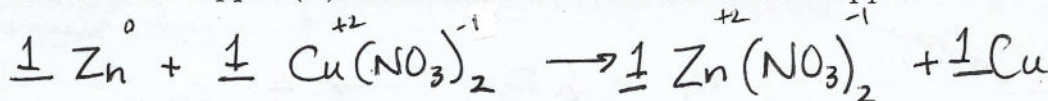


4. Acetaldehyde (CH_3CHO) decomposes to form methane (CH_4) and carbon monoxide.

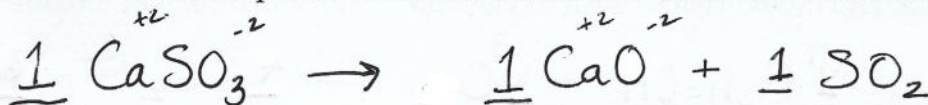


← No charges b/c all covalent molecules so no ions

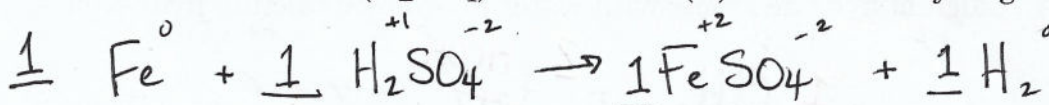
5. Zinc reacts with copper (II) nitrate to form zinc nitrate and copper.



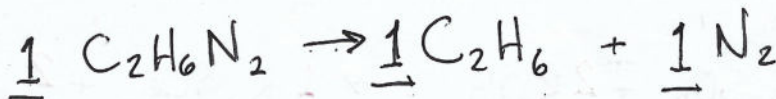
6. Calcium sulfite decomposes when heated to form calcium oxide and sulfur dioxide.



7. Iron reacts with sulfuric acid (H_2SO_4) to form iron (II) sulfate and hydrogen gas.

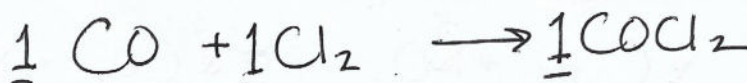


8. A nitrogen-containing carbon compound, $\text{C}_2\text{H}_6\text{N}_2$, decomposes to form ethane, C_2H_6 , and nitrogen gas.



← No charges b/c all covalent

9. Phosgene, COCl_2 , is formed when carbon monoxide reacts with chlorine gas.



Redox Reaction

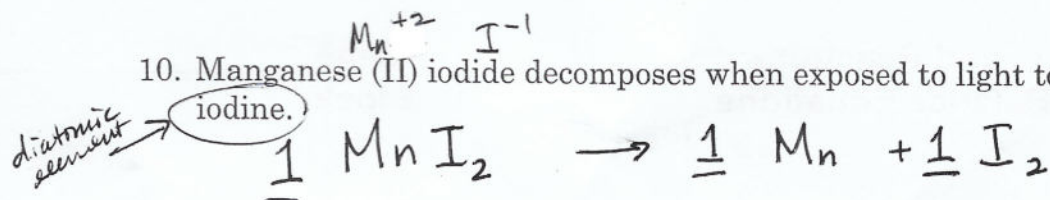
Zinc is oxidized
copper is reduced

LEO GER

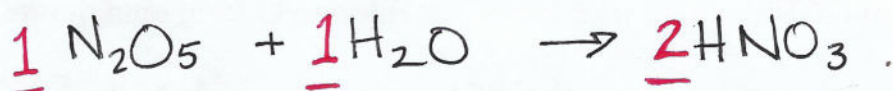
iron is oxidized
hydrogen is reduced

worded backwards

10. Manganese (II) iodide decomposes when exposed to light to form manganese and iodine.

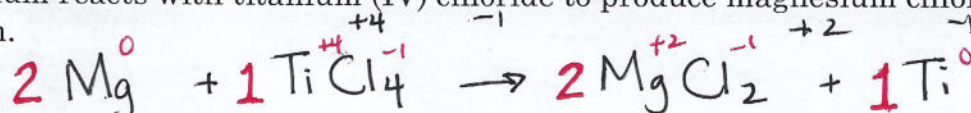


11. Dinitrogen pentoxide reacts with water to produce nitric acid (HNO₃).



12. Magnesium reacts with titanium (IV) chloride to produce magnesium chloride and titanium.

*Redox Reaction
LEO GER*



13. Carbon reacts with zinc oxide to produce zinc and carbon dioxide.



14. Bromine reacts with sodium iodide to form sodium bromide and iodine.

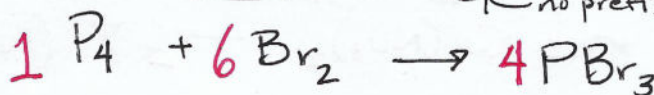
Diatomic element



diatomic element

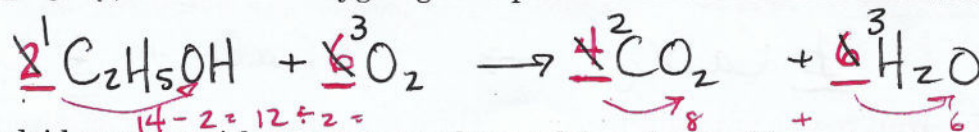
15. Phosphorus (P₄) reacts with bromine to produce phosphorus tribromide.

*even/odd swap
+ largest difference*

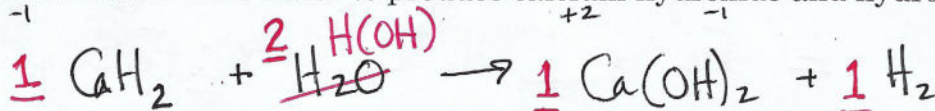


16. Ethanol, C₂H₅OH, reacts with oxygen gas to produce carbon dioxide and water.

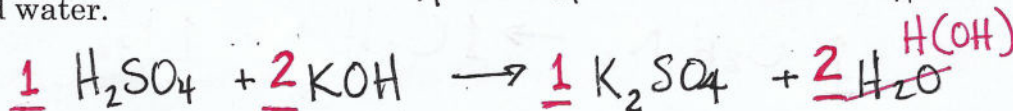
** Combustion
swap Hs
balance C
adjust O
simplify*



17. Calcium hydride reacts with water to produce calcium hydroxide and hydrogen gas.



18. Sulfuric acid, H₂SO₄, reacts with potassium hydroxide to produce potassium sulfate and water.



19. Propane, C₃H₈, burns in air to produce carbon dioxide and water.

Oxygen is in air



20 ÷ 2 = 10

12 + 8 = 20

** Combustion
swap Hs
balance C
adjust O
simplify*