

Name:

Period:

Seat#:

**Directions:** Any worksheet that is labeled with an \* means it is suggested extra practice. We do not always have time to assign every possible worksheet that would be good practice for you to do. You can do this worksheet when you have extra time, when you finish something early, or to help you study for a quiz or a test. If and when you choose to do this Extra Practice worksheet, please do the work on binder paper. You will include this paper stapled into your Rainbow Packet when you turn it in, even if you didn't do any of this. We want to make sure we keep it where it belongs so you can do it later if you want to (or need to). If you did the work on binder paper you can include that in your Rainbow Packet after this worksheet. If we end up with extra class time then portions of this may turn into required work. If that happens you will be told which problems are turned into required. Remember there is tons of other extra practice on the class website...and the entire internet! See me if you need help finding practice on a topic you are struggling with.

**For the following reactions: Name the reactants and products, Balance the equation.**

**Classify the reaction type.**

- 1)  $\text{Fe}_2\text{O}_3 (s) + \text{CO} (g) \rightarrow \text{FeO} (s) + \text{CO}_2 (g)$
- 2)  $\text{FeO} (s) + \text{CO} (g) \rightarrow \text{Fe} (s) + \text{CO}_2 (g)$
- 3)  $\text{C}_{12}\text{H}_{22}\text{O}_{11} (s) + \text{O}_2 (g) \rightarrow \text{CO}_2 (g) + \text{H}_2\text{O} (g)$
- 4)  $\text{Fe} (s) + \text{O}_2 (g) \rightarrow \text{Fe}_2\text{O}_3 (s)$
- 5)  $\text{Ca} (s) + \text{H}_2\text{O} (l) \rightarrow \text{Ca}(\text{OH})_2 (aq) + \text{H}_2 (g)$

**For the following equations, practice doing the following:**

- Write out the chemical equations
  - Identify type of reaction.
  - For any single replacement – use the Activity Series to determine if the reaction happens.
  - For any double replacement – use the Solubility Rules to identify if a precipitate forms.
  - Identify any gases that form
  - For single replacement and double replacement reactions - practice writing overall reaction, total ionic reaction, and net ionic reaction.
  - These are copied and pasted, it is very likely there are duplicates. Oh well!
  - You may need to look things up like the formulas for the acids in some problems.
- 6) Magnesium Chloride plus Oxygen yield Magnesium Chlorate
  - 7) Solid Phosphorus is added to Chlorine Gas producing a gas
  - 8)  $\text{Mg}_{(s)} + \text{H}_2\text{O}_{(g)} \rightarrow$
  - 9) Silver acetate plus potassium chromate  $\rightarrow$
  - 10)  $\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \rightarrow$
  - 11) Nitrogen plus Hydrogen make Ammonia gas
  - 12) Barium oxide is added to carbon dioxide making Barium carbonate
  - 13) Nickel (II) Chlorate  $\rightarrow$  Nickel Chloride and Oxygen
  - 14)  $\text{I}_{2(g)} + \text{MgCl}_{2(aq)} \rightarrow$
  - 15)  $\text{Zn}_{(s)} + \text{H}_2\text{SO}_{4(aq)} \rightarrow$
  - 16)  $\text{Al}_{(s)} + \text{HCl}_{(aq)} \rightarrow$
  - 17)  $\text{C}_2\text{H}_6 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
  - 18)  $\text{CH}_3\text{COCH}_3 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
  - 19)  $\text{Cr}_2(\text{SO}_3)_3(s) + \text{H}_2\text{SO}_4(aq) \rightarrow$

## Dougherty Valley HS Chemistry

### Reactions – Extra Reactions Practice

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- 20) Sulfuric Acid breaks into Sulfur trioxide and water
- 21) Aluminum metal is oxidized by oxygen from the air
- 22) Potassium nitrate decomposes to form potassium nitrite and oxygen
- 23) Barium metal reacts with Iron (III) sulfate to produce barium sulfate and iron metal.
- 24) Barium chloride reacts with sodium sulfate to produce barium sulfate and sodium chloride.
- 25) Bismuth (III) oxide and zinc metal react to produce zinc oxide and bismuth metal.
- 26) Calcium metal reacts with phosphorus to produce calcium phosphide.
- 27) Copper reacts with sulfuric acid and water to produce copper sulfate pentahydrate and sulfur dioxide
- 28) The combustion of  $C_{23}H_{16}O_4$
- 29) Hydrochloric acid reacts with solid calcium bicarbonate to make water, carbon dioxide, calcium chloride.
- 30) A solution of acetic acid reacts with solid iron (II) hydroxide.
- 31) Hydrofluoric acid reacts with sodium hydroxide.
- 32) Sulfur trioxide and water combine to make sulfuric acid ( $H_2SO_4$ ).
- 33) Lead (II) nitrate and sodium iodide react to make lead iodide and sodium nitrate.
- 34) Calcium fluoride and sulfuric acid make calcium sulfate and hydrogen fluoride (HF) (Hydrofluoric acid)
- 35) Calcium carbonate will come apart when you heat it to leave calcium oxide and carbon dioxide.
- 36) Ammonia gas when it is pressed into water will make ammonium hydroxide.
- 37) Sodium hydroxide neutralizes (added to) carbonic acid ( $H_2CO_3$ )
- 38) Zinc sulfide and oxygen become zinc oxide and sulfur.
- 39) Lithium oxide and water make lithium hydroxide
- 40) Aluminum hydroxide and sulfuric acid neutralize to make water and aluminum sulfate.
- 41) Sulfur burns in oxygen to make sulfur dioxide.
- 42) Barium hydroxide and sulfuric acid make water and barium sulfate.
- 43) Aluminum sulfate and calcium hydroxide become aluminum hydroxide and calcium sulfate.
- 44) Copper metal and silver nitrate react to form silver metal and copper II nitrate.
- 45) Sodium metal and chlorine react to make sodium chloride.
- 46) Calcium phosphate and sulfuric acid make calcium sulfate and phosphoric acid ( $H_3PO_4$ ).
- 47) Phosphoric acid ( $H_3PO_4$ ) plus sodium hydroxide.
- 48) Propane ( $C_3H_8$ ) burns (with oxygen)
- 49) Zinc and copper II sulfate yield zinc sulfate and copper metal
- 50) Sulfuric acid ( $H_2SO_4$ ) reacts with zinc
- 51) Acetic acid ionizes (Breaks apart into ions).
- 52) Steam (add water vapor) to methane ( $CH_4$ ) to get hydrogen and carbon dioxide
- 53) Calcium oxide and aluminum make aluminum oxide and calcium

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### Reactions – Extra Reactions Practice

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- 54) Chlorine gas and sodium bromide yield sodium chloride and bromine
- 55) Ammonia plus water yields Ammonium hydroxide
- 56) Solid Sodium is added to Chlorine gas
- 57) Carbon dioxide is bubbled in to water producing Carbonic Acid
- 58) Magnesium Oxide is added to water make Magnesium Hydroxide
- 59) Magnesium solid added to Oxygen makes Magnesium Oxide
- 60) Diphosphorus trioxide added to water to produce phosphorus acid
- 61) Dinitrogen pentoxide added to water yields nitric acid
- 62) Table salt plus oxygen produces → Sodium chlorate
- 63) Nitrous Acid → Dinitrogen trioxide and water
- 64) Electrolysis of water to individual elements
- 65) Mercuric Oxide becomes mercury and oxygen
- 66) Potassium Chlorate becomes Potassium chloride and oxygen
- 67) Calcium Hydroxide breaks into Calcium Oxide and water
- 68) Calcium Carbonate becomes Calcium Oxide and Carbon dioxide
- 69) Carbonic Acid breaks decomposes
- 70) Iron (III) Hydroxide becomes Iron (III) oxide and water
- 71) Zinc Carbonate becomes Zinc oxide and carbon dioxide
- 72) Cesium Carbonate separates into Cesium Oxide and carbon dioxide
- 73) Aluminum hydroxide becomes Aluminum oxide and water
- 74) Rubidium Chlorate decomposes to Rubidium Chloride and Oxygen
- 75)  $\text{RaCl}_2 \rightarrow \text{Ra} + \text{Cl}_2$
- 76)  $\text{Al}_{(s)} + \text{CuCl}_{2(aq)} \rightarrow$
- 77)  $\text{Br}_{2(l)} + \text{CaI}_{2(aq)} \rightarrow$
- 78)  $\text{Mg}_{(s)} + \text{HCl}_{(aq)} \rightarrow$
- 79)  $\text{Cu(II)}_{(s)} + \text{FeSO}_{4(aq)} \rightarrow$
- 80) Solid Calcium Hydroxide plus a solution of phosphoric acid →
- 81) A solution of Aluminum Hydroxide plus a solution of acetic acid →
- 82)  $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- 83)  $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- 84)  $\text{C}_7\text{H}_6\text{O} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
- 85)  $\text{H}_2\text{C}_2\text{O}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$