

Name: _____

20 Pts.

Classify and Write a Balanced Chemical Equation for each of the Following Reactions.

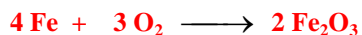
1. For the reaction of aluminum with oxygen to form aluminum oxide:

a.) Each aluminum atom (gains/loses) how many electrons? 3

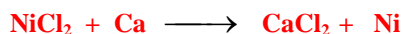
b.) Each oxygen atom (gains/loses) how many electrons? 2

c.) How many total electrons are transferred in the compound? 12

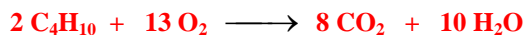
2. Iron metal reacts with oxygen. (iron (III) is the product) (Direct Combination)



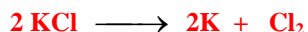
3. Nickel(II) chloride and calcium (SD)



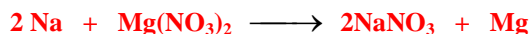
4. Butane, C_4H_{10} is combusted (C)



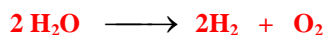
5. Potassium chloride is decomposed (D)



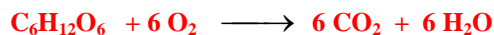
6. Sodium metal is added to a solution of magnesium nitrate (SD)



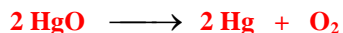
7. Bubbles form when an electric current is added to water. (D)



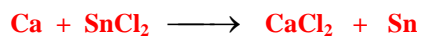
8. Glucose, $\text{C}_6\text{H}_{12}\text{O}_6$ is combusted (C)



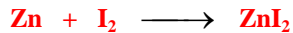
9. Mercury(II) oxide is heated and decomposes into its elements (D)



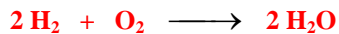
10. Calcium metal is added to a solution of tin(II) chloride (SD)



11. Zinc is reacted with iodine (Direct Combination)



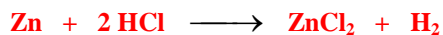
12. Hydrogen and oxygen make an explosive reaction. (Direct Combination)



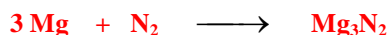
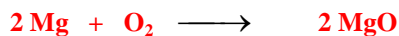
13. Copper reacts with a solution of silver nitrate (SD)



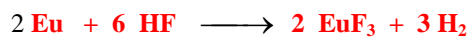
14. Zinc is added to hydrochloric acid (SD)



15. Magnesium metal is burned in the air. Both (Direct Combination)

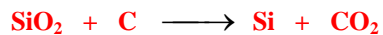


16. Solid europium is added to concentrated hydrofluoric acid. (S)
(Europium metal reacts to form a 3+ ion)

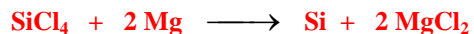


17. Silicon is produced for chemical and electronics industries by the following reactions:

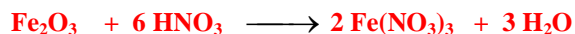
- a.) Silicon dioxide reacts with pure carbon. (SD)
(Carbon dioxide is the other product)



- b.) Silicon tetrachloride is reacted with very pure magnesium metal. (SD)



18. Solid iron(III) oxide is added to a solution of nitric acid. (DD)



19. Sodium carbonate is used to clean up a spill of nitric acid. (DD)



20. A heavy olefin fuel $\text{C}_{152}\text{H}_{260}$ is combusted. (C)

