PS Chemistry **Chapter 21** **Name_____Period____**

Endergonic Reactions vs. Exergonic Reactions

Directions: *Classify each of the following changes as endergonic or exergonic reactions*
Explain your reasoning.

1. Your car burns gasoline as you drive from home after school.	
2. Your grandma is baking homemade bread in the oven.	
3. The ice melts in your glass of coke.	
4. $CH_4 + 2\ O_2 \rightarrow CO_2 + 2\ H_2O$ + energy	
5. The human body uses the energy provided from the digestion of food.	
6. Water freezes on the pavement and the roads become icy.	
7. Your mom puts a pot of water on the stove and the water begins to boil	
8. Water condenses on the side of your glass of cold lemonade.	
9. Respiration is the chemical reaction that happens in our bodies to produce energy for our cells. The equation below describes what happens during this reaction: $C_6H_{12}O_6 + 6O_2\ (g) \rightarrow 6CO_2\ (g) + 6H_2O\ (l)$ + energy	
10. Morning dew forming on grass and plants.	
11. $2Na(s) + 2H_2O(l) \rightarrow 2NaOH(s) + H_2(g)$ + energy	
12. You get really sweaty as you run. When you stop running, the sweat evaporates.	

13. The snow melted when we finally had a warm day last week!	
14. During chem. lab, you add HCl slowly to water and notice that the flask feels hot.	
15. The athletic trainer shakes a cold pack to put it on an injured student's knee.	
16. H_2 and O_2 gas is added to a container. When the gas mix is squeezed over a burner, there is a loud pop.	
17. A frozen pond in the winter provides a place for the Brooking's Rangers hockey team to practice.	
18. Wood burns in the fireplace on a cold winter night.	
19. $6CO_2$ (g) + $6H_2O$ (l) + energy $\rightarrow C_6H_{12}O_6 + 6O_2$ (g)	
20. Quicklime can be used to make steel from iron and also to neutralize soils that are too acid. It must be heated to a temperature of 900 ℃ before the reaction will take place. The equation is $CaCO_3$ (s) $\rightarrow$ CaO(s)+ CO_2 (g)	
21. When lye, NaOH, is put in water, the water gets really hot.	
22. A glass of water left out overnight evaporates.	
23. Sodium and chlorine combine in an explosive reaction to form table salt.	
24. $2K(s) + F_2(g) \rightarrow 2KF(s)$ + thermal energy	
25. In honor of your birth, you parent's planted a tree. Every year the tree grows 2 inches.	