PS 100 Experiment 9 Chapter 20

Name (print)_

NetID

Date

Name (print)

NetID ______ Section____TA ____

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Title: Activation energies and entropies

Objectives: Students will observe how activation energies and entropies affect reaction rates.

Instructions: In class you have seen several chemical reactions including (1) hydrogen combining with oxygen to make water; (2)iron oxide combining with aluminum to make iron and aluminum oxide; (3)water being broken into hydrogen and oxygen through electrolysis, and (4)hydrogen and oxygen combining using a palladium catalyst. You are about to see one more, (5)baking soda and vinegar forming carbon dioxide and sodium acetate solution.

1. Complete the chemical equations so that they are balanced.

$$_{---}$$
 $H_2 + O_2 = 2H_2O$

$$2Fe_2O_3 +$$
____Fe

$$NaHCO_3 + CH_3COOH = NaH_2CCOOH + H_2O + \underline{CO_2}$$

2. Sketch a graph similar to figure 20.7 showing changes in energy for each of the reactions.

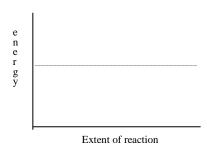




Extent of reaction

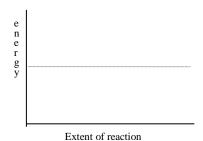


Extent of reaction



Extent of reaction

3. Which reactions are energetically favorable? Explain why?



I personally participated in the activity and wrote the response in my own words:

Signature:___