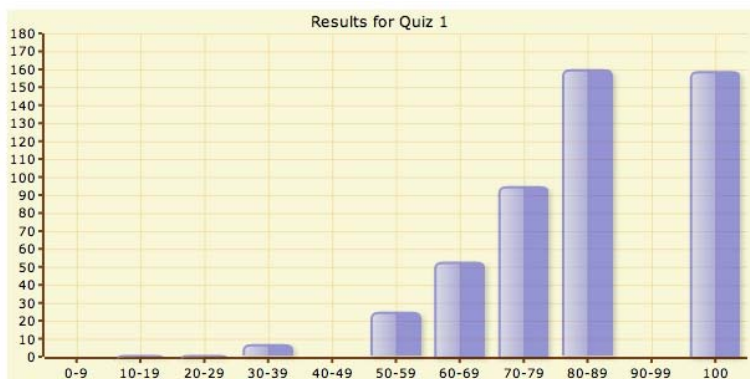


Random Musings February 4, 2010

1. The results from the first quiz are in and the average was an 84 which is spectacular, even for such a good class. No questions are being killed since all of them were answered at >50% correct. Good for you. By the way, given that so much of the class “gets it” in terms of having missed 0 or 1 problems (that would be about 350 of you), the other third really needs to be thinking about why you missed questions on the quiz and start working on improving things. As always, I am willing to meet with you to help.



	with	w/o zeroes
Median	87.5%	87.5%
Average	82.62%	83.61%
Count	507	501
Standard Deviation	7.3	6.38

2. There is a quiz on the 16th and an exam on the 25th. I will have plenty of details about the exam in the next musings but for now be aware that it will be from 7:30 till 9 in rooms to be determined and if you have to take the make-up it will be the following Sunday night, at 6 pm, no exceptions. Also, I will have an exam review on Monday night, the 22nd, at 9 pm.

3. Question types for quiz 2 follow:

- Colligative property calculation (with van't Hoff factor involved)
- Setting up an equilibrium expression
- Using LeChatlier's Principle to determine reaction direction (pressure or concentration change)
- Using LeChatlier's Principle to determine reaction direction (temperature change)
- Comparing Q to K to determine reaction direction
- Using the RICE set-up to find equilibrium values
- Understanding the relationship between free energy and equilibria: $\Delta G = -RT \ln K$
- Understanding the relationship between temperature and equilibria (Van't Hoff equation)

4. Here are some worksheets to get started on for chemical equilibria problems on worksheet 2:

<http://laude.cm.utexas.edu/courses/ch302/ws3s08.pdf>

has a nice set of questions on chem equilibria, the first half of which you can start doing now

<http://laude.cm.utexas.edu/courses/ch302/ws3s09.pdf>

has questions on colligative properties and an intro to chemical equilibria

<http://laude.cm.utexas.edu/courses/ch302/ws4s09.pdf>

has more chemical equilibria questions (do the first half of them this week)

5. While there may be a few minor changes, these are effectively the 30 question types for exam 1, two weeks ahead of time.

Physical Equilibria

- 1 temperature dependence of phase changes
- 2 vapor pressure theory
- 3 salt dissociation in water
- 4 phase diagram interpretation
- 5 phase diagram navigation
- 6 calculating ΔH from heating across phases transitions
- 7 gas solubility in liquids
- 8 ranking miscibility of liquids
- 9 calculating vapor pressure in binary system
- 10 Clausius Clapeyron equation
- 11 colligative property application
- 12 colligative property calculation

Chemical Equilibria

- 13 setting up K from equilibrium expression
- 14 appreciating the magnitudes of K
- 15 calculating equilibrium concentrations from K
- 16 calculating equilibrium concentrations from K
- 17 determining reaction direction from Q and K
- 18 LeChatelier and reaction direction
- 19 LeChatelier and reaction direction
- 20 relationship of ΔG to K
- 21 Van't Hoff equation

Introduction to Water Equilibria

- 22 theory of auto-protolysis of water
23. temperature dependence of K_w
24. converting between pH, pOH, $[H^+]^+$ and $[OH^-]$
25. ranking acidity and basicity based on equilibrium constants
26. strong acid or base calculation
27. weak acid or base calculation
28. weak acid or base calculation
29. identifying acid and base strength
30. simple buffer calculation

6. About 15 of you are not receiving my e-mails through the ChemPortal. I know this because the Chem Portal likes to e-mail me a list of failed deliveries. There are only a couple of reasons for this: 1) you typed in an incorrect e-mail address or have changed your e-mail address or 2) your e-mail provider or your computer rejects my entreaties. Either way, if you want my e-mail, this needs to be fixed. If you have troubles, contact the 1-800 number on the front page of the portal. They are really good about fixing these problems.

7. Since it isn't Valentine's Day till next week, it seems reasonable to do hate poetry this week. Here is something from one of your peers. And please, please, get your poetry in, especially the love poetry.

Hate Poem

by: Julie Sheehan

I hate you truly. Truly I do.
Everything about me hates everything about you.
The flick of my wrist hates you.
The way I hold my pencil hates you.
The sound made by my tiniest bones were they trapped
 in the jaws of a moray eel hates you.
Each corpuscle singing in its capillary hates you.
Look out! Fore! I hate you.
The blue-green jewel of sock lint I'm digging
 from under by third toenail, left foot, hates you.
The history of this keychain hates you.
My sigh in the background as you explain relational databases
 hates you.
The goldfish of my genius hates you.
My aorta hates you. Also my ancestors.
A closed window is both a closed window and an obvious
 symbol of how I hate you.
My voice curt as a hairshirt: hate.
My hesitation when you invite me for a drive: hate.
My pleasant "good morning": hate.
You know how when I'm sleepy I nuzzle my head
 under your arm? Hate.
The whites of my target-eyes articulate hate. My wit
 practices it.
My breasts relaxing in their holster from morning
 to night hate you.
Layers of hate, a parfait.
Hours after our latest row, brandishing the sharp glee of hate,
I dissect you cell by cell, so that I might hate each one
 individually and at leisure.
My lungs, duplicitous twins, expand with the utter validity
 of my hate, which can never have enough of you,
Breathlessly, like two idealists in a broken submarine.