

## CH302 Random Musings, March 29, 2007

1. There is an exam coming up next Tuesday. Pretty much you know the drill—30 multiple choice questions from the material since the last exam through the lecture last Thursday. The question types are listed again at the bottom of the musings along with the format and procedure.

2. Of special note, I would really appreciate it if you honored the requirement that you stop taking the exam when you are told “pencils down”. Just because you had a teacher who once told you to bubble in all your answers at the end of the test, or because you didn’t fill in the information on the scantron at the beginning, shouldn’t give you an advantage over other students.

3. Also, why can’t you bring your calculator? Do you really think you don’t have to be responsible? Once I run out of calculators to dole out, you are on your own.

4. I will hold a review session on the 30 question types on Sunday night from 6:30 to 7:30 in this room. I will cover the 30 questions types one by one and will post what I write on the web Monday morning.

5. Extra Credit 1—how to earn an extra 1 % of your grade in this course—time is running out

• I want you to teach a science-hater something interesting about chemistry that you have learned in this class. The person you teach has to say to you, “gee, I had no idea chemistry was that interesting” when you have finished (you can make them say it even if they don’t mean it.). You can choose what you teach but I would recommend that it be something of interest and utility from CH302: while you are on the beach tell someone why fish explode when you clean a fish tank or why they are dying from global warming (if you believe in global warming); while your car breaks down on the way to South padre, explain why you shouldn’t add pure antifreeze to your car; while you are serving up a delicious glass of ice water to your grandmother, explain how neutral water isn’t always pH 7 and on and on. Choose anything from the course and have a fine conversation.

• Submit the assignment as simple text in an e-mail (no attachments)

• Use the specific text written below as the subject heading of the e-mail:  
**spring break extra credit—your uteid**

• Send it to [dalaude@mail.utexas.edu](mailto:dalaude@mail.utexas.edu).

• If you do not provide your UTEID you will not receive credit.

• Due Date: April 2 at 3 a.m.

Now that you are an adult it is time to start fixing the mess that your parents and other folks their age have made. While there are way too many messes to fix to even begin a list, I provide an example here of a mess in which people your age have actually taken on a very creative and energetic effort to focus attention on a staggering tragedy. I leave it to you to learn and draw your own conclusions, but here is a web site for some called the invisible children

<http://www.invisiblechildren.com/theMovement/>

and here is an opportunity to participate in Displace Me, an event in Austin in late April to draw attention to the tragedy,

<http://www.invisiblechildren.com/displaceMe/>

## Bad Science Joke Corner:

A physicist, a biologist and a chemist were going to the ocean for the first time. The physicist saw the ocean and was fascinated by the waves. He said he wanted to do some research on the fluid dynamics of the waves and walked into the ocean. Obviously, he drowned and never returned. The biologist said he wanted to do research on the flora and fauna inside the ocean and walked inside the ocean. He too, never returned. The chemist waited for a long time, until finally he noted and wrote down the observation, "Hmm, so physicists and biologists are soluble in ocean water..."

**Poetry Corner.** If you are wondering if I was a little different from the average college student, use the following as a guide: one of my hobbies in college was typing up the words to really sad songs and putting them on the walls of my room. The weirder thing is that my roommate shared a similar fascination. And we went at this with a vengeance, at the beginning of our sophomore years spending hundreds of hours filling three full walls with hand typed half pages extracted from repeated listenings to bad eight-track tapes. Listed below are some of these sad songs. Enjoy.

### **I Wish I Had a River-Joni Mitchell**

Its coming on Christmas  
They're cutting down trees  
They're putting up reindeer  
And singing songs of joy and peace  
Oh I wish I had a river  
I could skate away on  
But it don't snow here  
It stays pretty green  
I'm going to make a lot of money  
Then I'm going to quit this crazy scene  
I wish I had a river  
I could skate away on  
I wish I had a river so long  
I would teach my feet to fly  
Oh I wish I had a river  
I could skate away on  
I made my baby cry

He tried hard to help me  
You know, he put me at ease  
And he loved me so naughtly  
Made me weak in the knees  
Oh I wish I had a river  
I could skate away on  
I'm so hard to handle  
I'm selfish and I'm sad  
Now I've gone and lost the best baby  
That I ever had  
Oh I wish I had a river  
I could skate away on  
I wish I had a river so long  
I would teach my feet to fly  
Oh I wish I had a river  
I made my baby say goodbye

Its coming on Christmas  
They're cutting down trees  
They're putting up reindeer  
And singing songs of joy and peace  
I wish I had a river  
I could skate away on

### **Souvenirs-Dan Fogelberg**

Here is a poem  
That my lady sent down  
Some morning while  
I was away.  
Wrote on the back of  
A leaf that she found  
Somewhere around Monterey.

And here is the key  
To a house far away  
Where I used to live  
As a child.  
They tore down the building  
When I moved away  
And left the key unreconciled.

And down in the canyon  
The smoke starts to rise.  
It rides on the wind  
Till it reaches your eyes.  
When faced with the past  
The strongest man cries...cries.

And down in the canyon  
The smoke starts to rise.  
It rides on the wind  
Till it reaches your eyes.  
When faced with the past  
The strongest man cries...cries.

And here is a sunrise  
To set on your sill.  
The ghosts of the dawn  
Moving near.  
They pass through your sorrow  
And leave you quite still...  
Sitting among souvenirs.

### **At Seventeen-Janis Ian**

I learned the truth at seventeen  
That love was meant for beauty queens  
And high school girls with clear skinned smiles  
Who married young and then retired

The valentines I never knew  
The Friday night charades of youth  
Were spent on one more beautiful  
At seventeen I learned the truth

And those of us with ravaged faces  
Lacking in the social graces  
Desperately remained at home  
Inventing lovers on the phone  
Who called to say come dance with me  
And murmured vague obscenities  
It isn't all it seems  
At seventeen

A brown eyed girl in hand me downs  
Whose name I never could pronounce  
Said, pity please the ones who serve  
They only get what they deserve

The rich related hometown queen  
Married into what she needs  
A guarantee of company  
And haven for the elderly

Remember those who win the game  
Lose the love they sought to gain  
Indebentures of quality  
And dubious integrity  
Their small town eyes will gape at you  
In dull surprise when payment due  
Exceeds accounts received  
At seventeen

To those of us who know the pain  
Of valentines that never came  
And those whose names were never called  
When choosing sides for basketball

It was long ago and far away  
The world was younger than today  
And dreams were all they gave for free  
To ugly duckling girls like me

We all play the game and when we dare  
To cheat ourselves at solitaire  
Inventing lovers on the phone  
Repenting other lives unknown  
That call and say, come dance with me  
And murmur vague obscenities  
At ugly girls like me  
At seventeen

### **American Tune-Paul Simon**

Many's the time I've been mistaken  
And many times confused  
Yes, and I've often felt forsaken  
And certainly misused  
Oh, but I'm alright, I'm alright  
I'm just weary to my bones  
Still, you don't expect to be  
Bright and bon vivant  
So far a-way from home, so far away from home

And I don't know a soul who's not been battered  
I don't have a friend who feels at ease  
I don't know a dream that's not been shattered  
or driven to its knees  
but it's alright, it's alright  
for we lived so well so long  
Still, when I think of the  
road we're traveling on  
I wonder what's gone wrong  
I can't help it, I wonder what has gone wrong

And I dreamed I was dying  
I dreamed that my soul grows unexpectedly  
And looking back down at me  
Smiled reassuringly  
And I dreamed I was flying  
And high up above my eyes could clearly see  
The Statue of Liberty  
Sailing away to sea  
And I dreamed I was flying

We come on the ship they call the Mayflower  
We come on the ship that sailed the moon  
We come in the a-ge's most uncertain hours  
and sing an American tune  
Oh, and it's alright, it's alright, it's alright  
You can't be forever blessed  
Still, tomorrow's going to be another working day  
And I'm trying to get some rest  
That's all I'm trying to get some rest

## CH 302 Exam 2 Procedures: Format and Administration

### Exam format:

1. A major CH302 exam covering Chapters 10 through the beginning of 12 will be administered Tuesday, April 3 during normal class hours. The exam will be worth 180 points. Only problems similar in content and difficulty to those from quizzes and worksheets will be included on the exam. Many of the problems are more challenging than the quiz questions.
2. Test structure: The exam will consist of 30 questions with each question worth 6 points. Questions are in a multiple-choice format. Look at the list below for an exact breakdown of problem types.
3. In addition to the problems, you will be provided a bubble sheet, a table of the elements, and a list of useful equations and constants. Plenty of space for working problems is provided on the exam. Do not bring your own scratch paper.

**Exam Administration:** READ THIS CAREFULLY. IF YOU DO NOT FOLLOW PROCEDURES, YOU MAY NOT BE ALLOWED TO TAKE THE EXAM. The supreme rule for my exams: everyone has the right to an optimum test-taking environment. I am less concerned with cheating than I am with you making life miserable for others taking the exam. All of the rules for this exam are constructed with this in mind.

1. Exam location: Last name L-Z, WEL 2.224. Last name A-K , Hogg Auditorium \*\*\*\*\* HMA is the auditorium next to the Union as you walk due west from Welch Hall.\*\*\*\*\* If you go to the wrong room, you will not be allowed to take the exam. There is only enough seating for the students as listed above.
2. Exam start time: 2:00 pm. No one is allowed into the room to take the exam after 2:15. If you are late and still desire to take the exam, go to the lower division office. You will have until the end of the normal exam time to complete it there.
3. What you may bring to your seat for the exam: number 2 pencils, calculator (I don't care what kind you bring), something to drink. What you may **not** bring to your seat: anything else including coats, food, back packs, books, paper, portable A/V devices. If you must bring them to class, place them at the bottom of the class room before the exams begins.
4. During the exam, the TAs will be available to answer questions. Raise you hand and one of us will come to help you as best we can. Do not leave your seat unless you are finished and are leaving the room.
5. When you leave, do so quietly. AS YOU LEAVE YOU MUST SHOW YOUR UT IDENTIFICATION when you turn in your exam. Make sure your name, special code and SSN are bubbled in.
6. Exam finish time 3:15 pm. You will be given fair warning that the exam is about to end so you can start guessing on questions you don't know. I WILL NOT TOLERATE ANYONE WRITING AFTER YOU ARE TOLD TO PUT DOWN YOUR PENCILS. Anyone who is observed to be writing on their exam after the exam ends will be assumed to be cheating and will receive a 0 for the exam and will face additional academic penalties. READ THIS AGAIN IF YOU DON'T UNDERSTAND. I WILL NOT TOLERATE ANYONE ANSWERING QUESTIONS AFTER THE EXAM STOPS AT 3:15 PM.
7. If all goes well the exam scores will be posted by Tuesday at 5 pm on the web. The solution key will be up immediately after the exam.
8. If you have any special considerations please contact me immediately by e-mail so we have documentation.
9. Responsibility. There is an increasing tendency for you to think you can be irresponsible and mommy or daddy will take care of you in class. I am not your daddy. So your decision to show up unprepared for quizzes and exam without sharpened pencils or a calculator is not my problem. I will have some pencils and some calculators available because the lower division office is nice, and I will look after folks whose batteries die. But if the collection of calculators I bring to class is runs out, you are on your own. Grow up.

6. The 30 question types for exam 2—there are no changes from last week's list:

### **Simple Equilibria**

1. Identifying acid and base strength
2. Calculating simple buffers
3. Identifying buffers (after neutralization)
4. Ranking acidity and basicity based on equilibrium constants
5. Buffer capacity
6. Buffer neutralization calculation
7. Identifying features of a titration curve
8. Identifying features of a titration curve
9. Titration of strong acid and strong base
10. Titration of strong acid and strong base (equivalence point)
11. Titration of weak acid/base with strong base/acid (buffer region)
12. Titration of weak acid/base with strong base/acid (equivalence point)
13. Estimating solubility from  $K_{sp}$
14. Calculating molar solubility from  $K_{sp}$

### **Complex equilibria**

15. Common ion calculation
16. Approximations: deriving acid base equations from equilibrium theory
17. Approximations: simplifying polyprotic acid calculations
18. Setting up complex equilibrium problems
19. Mass and charge balance
20. Equilibrium expressions for a polyprotic acid
21. Equilibria Calculations: dilute solutions
22. Equilibrium Calculations: sulfuric acid case
23. Equilibrium Calculations: weak polyprotic acids

### **Electrochemistry**

24. Balancing redox reactions (simple)
25. Balancing redox reactions (in acid or base)
26. Ranking oxidizing and reducing strengths
27. Ranking oxidizing and reducing strengths
28. Assigning EC cell nomenclature
29. Assigning EC cell nomenclature
30. Calculating  $E_{cell}$  at standard conditions