

CH302 Random Musings February 18, 2009— Post V-Day special

1. Quiz 2 Results. The distribution and statistics for the quiz are found below. The average of 78% is actually very good (last year the score was a 70). One question was killed because of a flaw in the programming.



2. There is a first exam coming up next Thursday evening. I have provided the question types for it below and will hold a review next Monday night. A format and procedure for exam 1 is found at the end of the musings. But some highlights of ways in which the exam procedure may be different than last semester:

- The exam will be Thursday evening from 7:30 till 9:30 pm. You get 120 minutes, sharp.
- Room locations: Last name A-L will be in BUR 106. Last name M-Z will be in Welch 2.224.
- You will be given a sheet of equations and constants and a periodic table.
- This is a calculator-free exam. No electronic devices are to be used during the exam, and you may not be in possession of any electronic devices while the exam is in progress.
- A make-up exam will be given the following Sunday evening from 6 to 8:00 pm in Welch 2.224.

3. Here are the slightly modified, and final question types for the exam.

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 across phases transitions
- 7 gas solubility in liquids
- 8 ranking miscibility of liquids
- 9 Clausius Clapeyron equation
- 10 Van't Hoff factor and colligative properties
- 11 binary mixture and Raoult's Law
- 12 colligative property calculation
- 13 colligative property calculation

Chemical Equilibria

- 14 setting up K from equilibrium expression
- 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 Van't Hoff equation and T dependence of K
- 21 relationship of ΔG to K

Introduction to Water Equilibria

- 22 theory of auto-protolysis of water
23. temperature dependence of K_w
24. molar solubility calculation
25. ranking solubilities based on K_{sp} values
26. converting between pH, pOH, $[H^+]$ and $[OH^-]$
27. ranking acidity and basicity from K_a and K_b
28. strong acid or base calculation
29. weak acid or base calculation
30. weak acid or base calculation

4. There will be two reviews for the final.

- Dr. Laude will hold a review on Monday evening, February 22, 2010 from 9:00 pm to 10:00 in Welch 2.224. He will go over the 30 question types, explaining what is expected.
- Travis will hold a review on Tuesday, February 23, 2010 from 9:00 pm to 10:00 pm in WCH 1.120. I don't know what he does during this time, but I have heard he does a really good job.

5. There will be two practice exams, each of which can be done in a calculator-free manner. I will post the first practice exam in the ChemPortal late Friday evening. I will post the second practice exam on Sunday in the Answers link of my web site.

6. Worksheets. A reminder that a new worksheet was generated which includes calculator-free opportunities to work problems from the chemical and water equilibria material has been posted. Many of these worksheets can be found in your course packet, but all can be found at

<http://laude.cm.utexas.edu/courses/ch302/worksheets10.html>

So breaking down the worksheets you should consider using:

Physical Equilibria questions:

- Worksheet 2 from 2009: 20 questions to help you learn the material from the first four lectures on physical equilibria
- Worksheet 2 from 2008: 20 questions to help you learn the material from the first four lectures on physical equilibria

Chemical Equilibria Questions:

- Worksheet 3 from 2009: 10 questions on colligative properties and 10 questions to introduce you to chemical equilibria
- Worksheet 3 from 2008: 20 questions to introduce you to chemical equilibria

Water Equilibria Questions:

- Worksheet 1 from 2010: 15 calculator free questions on K_w , K_{sp} , K_a and K_b to help prepare for exam 1
- Worksheet 5 from 2008: 20 questions related to simple acid base and solubility equilibrium calculations and the approximations that permit them

7. Update to the Sessions link on where to find discussion sections, office hours, reviews.

I have fixed Jessica's office hour (now 4 to 5 on Monday), Tiffany's review session (now 6:30 to 7:30 in GAR 0.102 before her academic community), and have added a list of Travis' review times.

You can find these at

<http://laude.cm.utexas.edu/courses/ch302/sessions10.pdf>

8. Extra credit will be coming—I am already being queried about extra credit. CH302 is a hard course (after exam 2 you may way far more vile things about it.) To appease you , there will be three extra credits for this class, each worth 1% of your grade. Briefly they will include e-mailing me about teaching a science hater some chemistry over spring break, attending a scholarly lecture in a field that interests you, and attending an undergraduate research poster session. Much more to come.

9. Poetry Corner. First three poems that have been written about this class at the interface between Valentine's Day and the exam on equilibrium. After that, the raw aching poetry of science and engineering students in love. Most of them make me squirm with their unabashed sentiment. But I promised so here they come.

The Chemistry to Hating Valentine's Day Anonymous

*I woke up Valentine's morning, pushed open the door,
To run to my computer, and check out my score.
For last Wednesday, I took Dr. Laude's test,
I was sure I aced it, I did my best.
But then I saw it, on my computer screen,
out of 180 points, I scored less than 115!
I am not too happy, so get the hell out of my way,
This stupid score, ruined my Valentine's Day!
I mean, it was multiple choice, How hard could it be?
I thought at the very most, I'd miss only three.
But there were some questions a little too raw, like
"which one is least true of the ideal gas law?"
You see the word least, could be open to debate,
but the tests have been graded, so it's probably too late.
So to end this poem my friends, I have to say,
That because of chemistry, I truly hate VALENTINE'S DAY!*

A poem after failing the equilibrium exam

*At the start of the semester
about four weeks ago,
we were all learning chemistry
extremely, very slow.
But now that pace has changed,
and it's no longer review,
for on that last equilibrium test,
I scored a 122!
For that one evil, satanic test,
is one with which I must cope,
because as far as exempting the final,
I can kiss goodbye to all my hope.
And then I thought, "Hey maybe, with
extra credit
my grade is saved,"
then Laude announced to everyone,
"NO EXTRA CREDIT
IN YOUR EXEMPTION GRADE!"
As my smile turned into a frown,
and my bubble began to burst,
I thought to myself,
"well, it can't get any worse."
For nothing can be worse than
taking the final as my only grade,
and I can't blame Dr. Laude,
since this grave is one I made.
The final is around the corner,
and there are many things to yet be read,
I won't be able to sleep very much,
I'll just pass out near my bed.
So fellow classmates,
What can you learn from this rhyme?
Get off your lazy ---- and study,
You're running out of time!*

Ode on CH302

Oh Dr. Laude

*how you hate the fall
and those trips with your daughter
to be a model at the mall*

*but still you love it
and your family too
and all of your students
in chem 302...*

*you love travis, his ipod,
and the UGTAs as well
and especially judy
boy isnt she just swell*

*but acids and bases
really make me frown
and asking if things shift left or right
when the pressure goes way down*

*so valentines day is a day of love
for you and your schooling
but i think "can i get an A?"
who am i fooling...*

And now the raw aching poetry of science and engineering students in love

For Mary Martha

Intermingled Souls

*Who is worthy for to sing your praise?
My feeble tongue knows not sufficient words,
Nor any creature save seraphim may raise
A song to tell the world of our love.*

*A warm mahog'ny crown my fingers brush,
And sparkling blue-green stars do mine eyes meet.
As the softness of your skin receives my touch
Just so your tender heart does greet my soul.*

*In full embrace I hold it now to me
That, though we are apart, you feel my warmth;
And 'til your blissful countenance I see,
So you hold fast to me my void to bear.*

*Thus it is: our souls intermingled be,
And so shall stay unto eternity.*

Sometimes I wish you were mine
Under your bedroom window I pray
Someday you'll love me
And we'll share a home one day.
Never a day goes by

Love with you doesn't cross my mind
I stare at you every day
No not that creepy kind
Now my love has been professed..

By: Clausius Clapeyron

Marshmallow Pillow Talk

*I heard the secret language of the marshmallow yesterday;
I listened to him cry.
I heard his mating
Call
for graham cracker planks and chocolate bar sidekick as his
consistency transformed,
from a non-tacky rubbery state
to fused orgasmic sticky bliss.
Yes, this Rare
Event, too, caught me by surprise,
as I did not know who made that
sound or why?
But then everything made sense; the marshmallow was lonely no
more.
His transmutation takes place not just
by himself, but with his very subtle call,
he
Beckons the shield of cracker
to help compress
a Metamorphosis with his chocolate counterpart to that of the
blessed - Smore.
This sound, this noise
will catch you off guard
one day when you ask yourself
What it may be... But,
it could be you see,
the sweet pillow talk of a marshmallow
not lonely anymore.*

(To: "Silly" Love, your baby)

Untitled

*You can't go from hairy ice cream to idiotic circles without the kiwi in the middle
The crazily happy and happily crazy to see you
-love*

*is a simple thing
A dangerous thing
Pleasure full and painful
like repetitively poking at a purpled bruise
and hearing me laugh.*

*Chance! Fate! but who could love a beast?
The final petal falls in the grace
of ultimate peace
A fairytale ending lives
in the roots of our dreaming tree
Where drops of rain shimmer
beneath the starry sky*

*What is love? The vestigial of questions echoes down the corridors of time,
leaving naught but ambiguities*

*love is putting on pajamas fresh from the dryer,
running through the grass and feeling green between my bare toes
(and you following suit thereafter)
the first hug after a week's vacation
the white feathered wings of our imagination
It is the color of light
and holds no shape
The warmth that fills the caverns of my being
Love
is smelling your scent while you breathe my breath
Waking up with you as my first thought
and every night hearing "dream sweet my love"*

*Embedded in our memories and our spirits
It is the beat of our hearts that will out-tick all clocks.*

Those days following in which we spent.
I hate to say, but those are when I missed you.
I missed you a lot.
But days keep passing.
And with them my feelings.
But still is left,
Is remembering that I was happy.
Those amber eyes
Reflected things in which you saw in me.
Even if I, myself, couldn't see.
That which you thought of me.
But why can't you see,
Your life is full, it is full of fantasy.
Full of Romance and Ecstasy.
So you cannot forsee.
But that happiness is found in the black and bleak.
And chasing this tricky nancy.
Will end your flight of fancy.

By: Romanticism with a capital R

Self-reflection on a Winter's Night

*She was like night and day.
A beauty that knew no right or wrong.
What was her downfall was to be her crown.
Armed with words that cut through air, and a heavy angry mind,
She never served her proper time.
Queen of life itself.
She was my queen.
My muse that knew only stealth.
She stole my heart and ate it while I slept.
So when I woke all I knew was the pit of her gut.
And in that gut my heart ate away her soul.
And in her dreams she drank water from a bowl.
For not one day did my love for her I doubt,
and for everyday there on,
I swear I loved that xxxxx always, or at least until the day she xxxxx me out.*

We're taught to think that
love is beautiful, that it
transcends our bodies, that it
heals our souls.

And even though we don't know what this
"love" thing is,
we come to associate it with concepts like
cozy fireplaces on winter nights, like
holding hands in apple orchards, like
coming home to a person—
your person.

But most of all we associate it with a feeling of
forever. We're told that love is
everlasting,
consistent,
permanent.
Love is growing old and wrinkly,
together.

And if you find that kind of love you become
"one of the lucky ones."
The ones who have someone to come home to.

More often than not, though, love is
fleeting,
transient,
impermanent.
It comes and goes like
waves in the ocean, or
ripples in fields of grain.
Sometimes it comes and lasts for mere moments or
days, or
weeks, or
months, or
years.
But when it leaves
(if it leaves)
you're left wondering if it was ever really there.

It was.

"Do They Collide?"

Darling, you used to take me to a place
Somewhere that we could go to fade away
We lie beneath the stars, then, face to face
Without a care in the world - come what may
The world revolved, yet time stood still
Here we, with each and ev'ry twist and bend
Would sleep and dream, knowing our future's will -
To stay loving and faithful 'til the end
Yet now I lie awake, alone and cold
You held my world, and shattered it bit by bit
Did it make you feel safe, secure, and bold?
Or have you in turn been condemned by it?
Though this beaten heart suffers endless strains
Forgiveness edges in and love remains
I wish there was something I could say
Simple and precise, that I could mean in every way
The three words mean so much
And to everyone's heart it does touch
People use it more than it is meant
They use it without the usual intent
You don't just say it to anyone
But to the only person you will ever love
When you say it to family or to a friend
It just doesn't mean the same in the end
That love is unconditional and is known even without words
You never have to say it, because in their heart it is heard
No, this that I want to say
Is not the "I love you" as a friend, kind of way
I mean it from way down deep inside
Where the things that no one else knows lie
I have never said this to anyone
But since I meet you, I knew you were the one
Basically what I am really trying to say
Is that I love you, in every single way

She's everything to me (Heather)

*Almost two decades ago,
I came into this world,
With someone who looked just like me.*

*We've lived the same life,
We've both held on tight,
To the one we both know we can't live without*

*My twin
Who has my same curly hair,
Is about to go on her own way.
She doesn't know it,
And I never show it?
She's everything to me*

Stacy must have the prettiest hair
That I've ever seen. It is so fair.
If you don't believe me, you are a square.
It would be completely my err
To believe it looks like a mare,
And to do that I wouldn't dare
Whenever I see her all i can do is glare
Her mother is beautiful to be her heir
I wish I were pretty; I've resorted to prayer
She should make it a tourist site and charge fair;
She would be more famous than Ric Flair!
One time she cut it, and gave me quite a scare.
I thought my own eyes out I would tear!
Some of her leftovers she did share,
I pasted it to my head as if to wear.
But it would not stick to me, I swear.
She doesn't even have underwear!
Stacy does have the prettiest hair!

*im the groove, you the estella
you dora, im the explora
im the soul, you the body
you the cola, im bacardi :)
im the music, you the party
you the song, im the writa
im the gas you, the ignita
you the playa, im the game
im the picture, you the frame
you the college, im the dorm
im the rain, you the storm
you the rose, im the thorn
im hope, you the forlorn
you the beat, im the heart
im the race, you the start
im the gazer, you the star
im the tenda, you the bar
you the book, im the reader
im the bird you, the feeder
im the ball you, the roll
you the crook, my heart you stole*

One Day You Will Love Me

Every morning you look in the mirror
And complain to me Why?
Everything about me is wrong.
You constantly hate me for not making you mister or misses right
For not having a sweet valentine
Sometimes I can make you cry
Your never ending problems all come down to
Why?
My question can make every day a living hell.
Burn in it if you must
What do I care?
Everything about me is wrong.
All these negative thoughts that come to mind when you think of me
Should be considered a Crime.
Everything about me is wrong?
Compare me to
The one who can only pretend
Of what I have given you.
I give you everything
But still you take me for granted.
I give you everything
But still you constantly drag your feet
Asking me why?
Look at me in the right way
Find my light
Change your ways
Don't find an answer to my never ending riddle
Why?
And surely we will die
-Life

The Chemistry of Love

By: Jackie

The free energy in my heart
rises as we become one,
And our bonds begin to form
like seeds under the sun.

Our personalities collide
like acids and bases,
But I can see myself loving you
in over a million places.

Together we reach equilibrium
and like the stuff on the right,
I will be the product to your reaction
so hold on tight.

Do not fear our chemistry
we were made to mix,
Just like water and salt
in Dr. Laude's bag of tricks.

"Lost Love"

All day long, empty inside,
At long day's end, I am free.
I work so hard for really nothing,
The world, and then there's me.

When finally freedom finds myself,
It changes from what would be,
For what everyone mistakes as a dream,
Is so real for me.

Happiness at long last,
I finally feel complete.
To share a moment with yourself,
It all feels like a dream.

Sweet, soft kisses shared-
I finally feel complete.
Time and space and nothing matters,
As perfect as a dream.

Paradoxical sleep can't wait,
care or feel or see,
I wake up and smile and am complete,
until I look beside me.

Then all too soon I realize,
I have been outsmarted.
Once again love is lost,
and another day has started...

"Sara"

The clouds stroll past,
the trees grow tall,
but I never change.
I'm always here,
alone and tired,
why am I so strange?
Like the sun
your beauty peaks,
and you absolutely glow.
I want you girl,
to be mine,
I want the love to flow.
You're taken or sick,
single and married,
never really alone.
Why can't I see,
that unlike me,
you continue to grow?
Sweet Sara I say,
to all who listen,
something simple but true:
One day my love,
I know not when,
I will be with you.
Continue to grow,
you always will,
so much every day.
I hope that soon,
so very soon,
I will hear you say:
I love you

With Valentine's Day approaching quickly
I knew you would desire
a night unlike our usual regime-
one Snuggie before the fire.

The attraction that i feel for you
can be so well expressed
through lessons learned in chemistry.
I'm ready for the test...

You and I are miscible
like dissolves in like.
I could fully hydrate you
on Valentine's night.

When I see your fuzzy face
you send me to the moon.
My blood begins to boil
come closer, let us spoon

I'm the solute and you are my solvent
I will gladly lose myself in you.
Just come on over baby
I know just what to do.

Love love love is all you need
That's what the song said indeed
But what do you do when love flies away
All the sudden you're alone where you lay
Pondering what the future awaits
Afraid of never finding your true mates;
Vision starts to dim and blur
Desperately clinging on to him or her
Finding a friend where ever you can
Knowing this could be your last stand.

CH 302 Exam 1 Procedures: Format and Administration

Exam format:

1. A major CH302 exam covering the first nine lectures on chemical and physical equilibria will be administered Thursday, February 18 from 7:30 till 9:30 pm (note the 120 minute length). 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 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 A-L will be in BUR 106. Last name M-Z will be in Welch 2.224. 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: 7:30 pm. We may decide not to administer the exam to late arrivals if it becomes too disruptive to those taking the exam. Once you start the exam, you may not leave to take the make-up. You must turn in scantron with validated identity.
3. What you may bring to your seat for the exam: number 2 pencils and something to drink. What you may **not** bring to your seat: anything else including any type of calculator or electronic device, any kind of coat, food, back packs, books, paper. 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 9:30 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 9:30 PM.**
7. If all goes well the exam scores will be posted by Friday morning. Please don't hassle us if they are not up right away. We are doing our best.
8. If you have any special considerations please contact me immediately by e-mail so we have documentation.