

CH301 Random Musings September 27, 2011

1. A frightfully large number of you did not fill in your version number or uteid correctly on quiz 1 and 2. Please make sure you double check this on the exam. If you do make a mistake, and believe that the score we report for you on Quest is wrong, please go to the web site and look up how to fix your mistake (hint: it involves Travis.)
2. There is a major exam tomorrow night, Wednesday, September 28th, from 7:30 till 9:00 pm.

Room locations as follows:

- Last name: A - N WEL 2.224
- Last name O - Z WEL 1.308

IMPORTANT: If you go to the wrong room, you will not be allowed to take the exam.

3. The exam is worth 180 points, with 30 6-point multiple choice questions covering material in Chapters 1 and 2. Everything in my course notes from those chapters, as well as the worksheets and practice exams, is fair game. You should use the list of problem types (provided last Tuesday and again today at the bottom of the musings) as your guide for what I will cover. The review on Sunday night produced a question by question description of what I expect—you can find it under my random musings link.

4. There is a practice exam available on the web site with 30 questions related to the question types provided. It is approximately the same level of difficulty—that said, there is nothing like a timed test under pressure you change how your brain operates. So don't predict too much from your practice exam performance.

5. Things to think about in preparing for the exam:

- Don't think you have to know everything in Chapters 1 and 2—simply focus on how to do the kinds of question types that are listed.
- Know that you know the material. Assume nothing. For example, I will ask you to explain how a particle in a box works, so before the exam, be able to write down, or say out loud, how it works. If you can't do it, or know that you are shaky on the subject, THEN YOU WILL GET IT WRONG.
- Don't think that if you did well on the quizzes you will do fine on the exam—the quizzes typically have easier questions, and more important, there was really not a time constraint.
- Being overconfident is bad. Actually work the problems rather than think you know how to work the problems because you did it once in high school.
- Time will definitely be a factor on Wednesday for students who don't know the material cold.
- Don't stay up all night Tuesday night unless you have done it before and know you can handle it

6. Things to think about when you come take the test:

- Showing up with pencils and a picture ID. If you bring anything else into the room it will be put in the front of the room while you are taking the exam.
- Use proper hygiene on the day of the exam—many of you will think you don't have time to shower. Think again, the room will smell pretty ripe if you don't.
- Don't assume your bus will be on time and that the traffic will be good and you know where the exam will be. Give yourself plenty of time so you are not panicked as you arrive.
- Have a time management strategy in mind while you take the exam—see the test taking advice below.

7. Students with disabilities. I have been notified that 7 students with disabilities are permitted alternate testing conditions. At this point only ONE of you has e-mailed to set up those conditions. You are not allowed to show up for the test when we have 500 students to take care of and expect that the TAs will take care of you right then and there. Instead, e-mail Matt and let him know you need alternate testing and he will work out arrangements with you. This typically means starting the test earlier on Wednesday or finishing it later on Wednesday in the chemistry lower division office. But you must contact Matt ahead of time and make the arrangement.

8. Test-taking advice I. As you prepare for this test, keep the following time management idea in mind. There are 30 equally weighted questions and only 90 minutes to finish them. Some questions will take 2 seconds to answer and some will take 5 minutes to answer. As the end of the exam arrives, if you have spent your time working the really long questions (the calculations and complicated Lewis structures, for example) and still have a bunch of quick questions to work, then you are making a big mistake. Get the easy quick questions out of the way first and then struggle at the end with the couple of long calculations questions that you might not finish, but won't cost you as much in the grading.

9. Test Taking Advice II. Memorize the question types. (I said memorize.) The advantages are numerous. Foremost is that this will automatically program into your head the locations where you can put the material you learn so your brain isn't a jumbled mess while you take the exam. In addition to an organized brain, you will now be able to figure out what to study and what not to study. It will also make it possible to define, question by question, exactly what you need to learn.

10. Test Taking Advice III. How you every noticed that you study with a million study aids, but you take a test without any exam aids save a periodic table and some equations? Try spending some time studying the way you take tests—with nothing in your possession but a pencil, a periodic table, and what is in your brain. Find a blank chalk board, or a quiet corner of the library, and see, for each memorized question type, exactly how much you have actually put into your head. If you start this process, and realize nothing is coming out, it is because nothing has gone in. At least then you will know that you are about to crash and burn on the exam.

11. Grading and regrades: Grades will be posted as soon as possible on Thursday. Don't hassle us—if they are not up there is a good reason. Also, please don't e-mail after the exam to say your don't have a test score. Those of you with grading issues should contact Matt with as much information as possible (in particular your actual version number, uteid, name, etc.) and he will fix your grade in no time and e-mail to confirm. Note, this is THE ONLY WAY WE DO REGRADES.

12. Two pet peeves of mine with respect to the test:

- Test environments are quiet. From the moment you arrive you should be focusing on preparing to take the test and speaking only to the proctors about test-related issues.
- When the test time is over, you will be told to put down your writing implements. That is not the time to start filling in you scantron or bubbling in guesses. If you do so you will be assumed to be cheating and will be treated accordingly.

13. Speaking of cheating, people get caught cheating all the time—happens every year in my class. I have no tolerance for those folks. Sadly, their college careers are going to be much less happy than they once thought, with that permanent stain sitting on their academic records. The professional schools to whom I will send letters in four years will also be sad to hear about issues with integrity. Those of you who get away with cheating elsewhere and intend to try and get away with it on the exam, know this: we have our ways to catch you, and you may get away with a few times, but you will be caught. So short and sweet:

Don't cheat--it corrupts the integrity of the academic process that you have chosen to make the centerpiece of your existence.

14. A make-up exam will be held for students who have academic conflicts, official UT conflicts or religious observances. Your one chance to take the make-up will be Sunday, October 2rd, at 6:00 pm in Welch 2.224. Others who have an good reason for missing the exam—being sick, death in the family, etc, can contact me about also using this makeup time. E-mail to discuss your issues.

15. Public Service Announcements. Sometimes you want free publicity for the things that are good in this world (that doesn't include parties). So e-mail me and I will stick your request in my musings.

STUDENTS FOR SERVICE

Resume

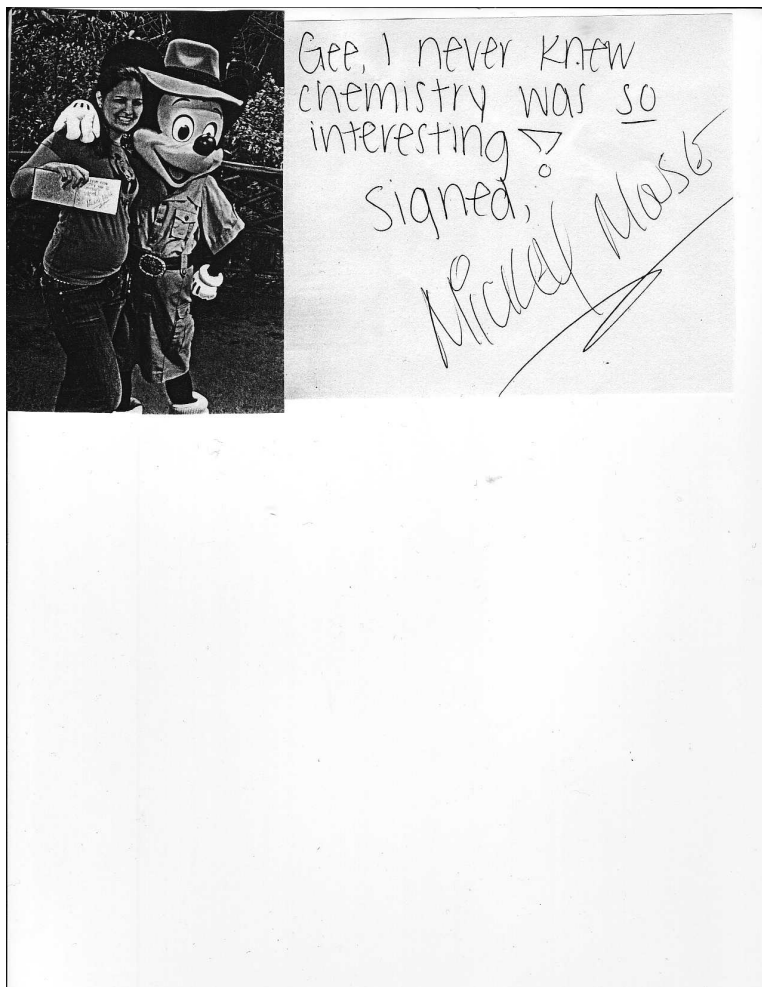
- ✓ Good grades
- ✓ Volunteering
- ✓ Experience
- Leadership???????????

No worries, Students for Service is here!!!! This organization offers a guarantee that no other organization does:

LEADERSHIP experience for every members!

INFO SESSION 2: PARLIN HALL 305 10/3/11 6-7pm

16. Picture corner. So sometimes you e-mail me pictures.



Some of you will be wanting to earn extra credit in this course. This will happen over Thanksgiving when you are given the chance to final a science hater, teach them some chemistry, and get them to say "Gee, I never knew chemistry was so interesting, just like Mickey Mouse."



Some of you took me up on my recommendation that you work Lewis dot structures at the football game.



This former student didn't take the admonition "don't try this at home" seriously. It may not appear that I am being careful or know what I am doing when I perform demos, but in 30 years I have never hurt anyone, say, exploding a hydrogen balloon. You on the other hand, as the saying goes, "don't try this at home...."

18. Poetry corner. This is what your brain will look like during the test if you don't memorize the question types before hand and no how to identify them on the exam. So organize, organize, organize as you finish up your exam preparation.

from the cognoscenti e. e. cummings

bingbongwhom chewchoo
laugh dingle nails personally
bung loamhome picpac
obviously scratches tomorrowlobs

wholeagainst you gringlehow

exudes Thursday fasters
by button of whisper sum blinked
he belowtry eye nowbrow

sangsung nee whitermuch grab

sicksilk soak sulksuck whim
poke if inch dimmer twist on
permament and slap tremendous

sorrydaze bog triperight

election who so thumb o'clock
asters miggle dim a ram
flat hombre sin bangaroom

slim guesser goose pin yessir wheel

no sendwisp ben jiffyclaus
bug fainarain wee celibate
amaranth clutch owch

so chuck slop hight evolute

my eerily oh gargle
to jip hug behemoth
truly pseudo yours podia

of rawdarw leschin

A poem from the masses:

Last quiz I missed the Indium one
For doubt consumed my thinking squad
I went along though it was wrong
I filled the bubble, that's so dumb!

But dear D. Laude was so nice that gave me another, one more chance
I did not think he would do that, but God I thank him lots for that!

After all this, I want to say:
Don't be so s2p3 next time!!!

CH301 Fall 2011 Exam 1 question types

Material from Quiz 1—First half of Chapter 1 on EMR and QM

1. electromagnetic radiation theory and calculation
2. classical theory falls apart (blackbodies, photoelectric effect and atomic emission)
3. Rydberg equation calculation
4. particle in a box theory
5. uncertainty principle theory and calculation
6. deBroglie equation theory and calculation
7. Schrodinger wave equation theory
8. applying quantum number rules to boundary conditions
9. applying quantum number rules rules to boundary conditions

Material from Quiz 2—First half of Chapter 1 on Electronic Configurations and Trends

10. applying Aufbau, Pauli and Hund
11. assigning electronic configurations of atoms and ions
12. assigning electronic configurations of atoms and ions (exceptions)
13. assigning electronic configurations of atoms and ions (exceptions)
14. periodic table nomenclature
15. theory of periodic trends: ENC and shielding explain IE, EA, AR, IR, metals
16. ranking periodic trends: IE, EA, AR, IR, metals
17. ranking periodic trends: IE, EA, AR, IR, metals (exceptions)

New materials from Chapter 2 on Drawing ionic and covalent Lewis dot structures

18. Lewis structures of ionic compounds
19. Lewis structures of covalent compounds, resonance
20. Lewis structures of covalent compounds, multiple bonds
21. Lewis structures of covalent compounds, multiple central atoms
22. Lewis structures of covalent compounds, multiple central atoms
23. Lewis structures of covalent compounds, exceptions to octet (too large, too small, too odd)
24. Lewis structures of covalent compounds, exceptions to octet (too large, too small, too odd)
25. Lewis structures of covalent compounds, exceptions to octet (too large, too small, too odd)
26. ranking crystal lattice energy
27. electronegativity calculation and ranking
28. assigning formal charge
29. formal charge and correct Lewis structures
30. ranking bonding trends: EN, bond energy, bond length

CH301 Exam 1 Help sheet (to be provided with the exam)

Constants

$$c = 3.0 \times 10^8 \text{ m/s}$$

$$h = 6.626 \times 10^{-34} \text{ Js}$$

$$R = 3.289 \times 10^{15} \text{ Hz}$$

Equations:

$$v = c/\lambda$$

$$\Delta E = h v$$

$$v = R(1/n_1^2 - 1/n_2^2)$$

$$T\lambda_{\text{max}} = c_2/5$$

$$E = 0.5mv^2 = hv - \Phi$$

$$\lambda = h/mv = h/p$$

$$\Delta x \Delta p \geq h/4\pi$$

$$H\Psi = E\Psi$$

$$\lambda = 2L/n$$

$$E_n = n^2 h^2 / 8mL^2$$