

Announcements

Monday, February 09, 2009

No class next Monday (President's Day)

Exam 1 in 2 weeks, Mon Feb 23, covering chapters 1-5 (through tonight's lecture)

- Periodic table, conversion sheet given
- Mostly multiple choice, 25-30 mult choice q's
- 1-2 pages of short answer / show your work
- 100 points, 75 minutes

Question/review sessions next week in the lab:

- Tues 1pm, Wed 8am, Wed 6pm

Elements to be memorized for exam 1 on webpage

Practice for the exam:

- Unit conversion worksheet
- Density worksheet
- Binary naming worksheet
- End-of-chapter problems (odd # answers in back of book)
- Rework MasteringChemistry tutorials and problems for practice
- Practice multiple choice exams from U of M (they cover through ch 6 on their exam 1)

MasteringChemistry:

- Lec 4 post (problems)
- Due in 2 weeks, Monday, Feb 23 before class.
- These will be available before 11 am Tuesday.

Lab 6 this week - prelab worksheet finished before lab.

Isotopes

An atom has 11 protons and 12 neutrons

$$AN = 11$$

$$MN = 23 = \#p + \#n$$

isotope name = sodium-23

$$\text{isotope symbol} = {}_{11}^{23}\text{Na}$$

$$\#e^- \text{ if neutral} = 11$$

$$\#e^- \text{ if stable ion} = 10 \quad (\text{Na}^+)$$

Mass number: $\#p^+ + \#n^0$ in nucleus
an exact number

Atomic mass: actual mass of an atom (amu)
measurement

<u>Atom</u>	<u>MN</u>	<u>atomic mass</u>
carbon-12	12	exactly 12 amu
carbon-13	13	13.00335 amu
magnesium-24	24	23.98504 amu

by definition

$1p, 1n \cong 1 \text{ amu}$ in mass
electrons nearly massless

Atomic mass

A sample of natural carbon contains...

98.9% carbon-12

1.1% carbon-13

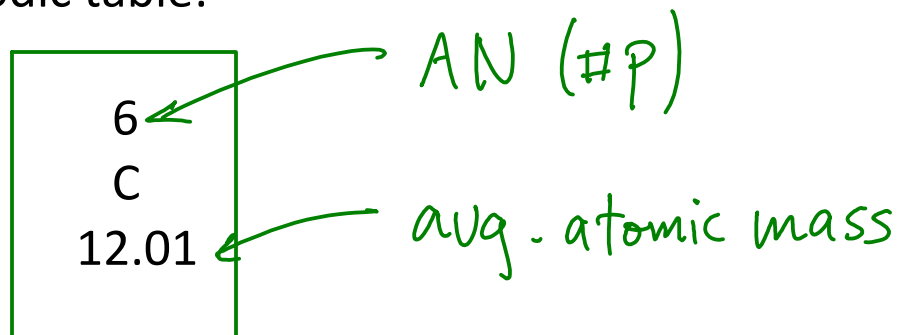
trace carbon-14

3 naturally occurring
isotopes

Atomic mass of "natural carbon": $\approx 12.01 \text{ amu}$

Weighted average of natural
isotopes

On periodic table:



Mass number is NOT on the periodic table!