Bio 3

09-06-11

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next exam: 09/22/11 (?)

Remember: lab due next Tuesday

-remember question printed, answer hand-written

OT: received scored take-home exams

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Review of Take-Home Exam:

-Follow directions

-10 points off if the question is not retyped in a different font

-needed to be 'in your words' for some answers

-2 pieces of info MUST be on first page always: name and section number

-receive 0 if don't do this (this exam only lost 10 pts)

-the 3 major social issues should have been from syllabus or text book

-MMR vaccine: needed to talk about the science that has disproved this

-Part 3: Logical Thought/Justification

-needed to talk about the studies in the book, online statistics, etc

-final requirement: the contract, signed and dated, etc

-must have been on a separate page

-lost 10 pts for not having on separate, lose the pts of the questions that were on that page too

-total worth 10 pts, each question about 5 pts

-SAVE YOUR EXAM!

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**Real Science:**

**BBC News:**

Editor resigns over 'problematic' climate paper

-relates to the peer-reviewed journal process

-a paper claimed all the climate science was bad because they used the wrong cloud models

-Remote Sensing (a journal) published that

-the journal doesn't deal with climate stuff

-which is why they submitted the paper to this journal

-not supposed to publish in off-topic journals

-because the reviewers/editors don't have appropriate knowledge to review

-pseudo-science, with hidden agenda

-by person involved with religious group refuting evolution/climate change

-the editor of journal resigned from the paper, when realized that this was bad publishing procedure

-Eagles and Small Children

-Scottish Gamekeepers Association has concerns about eagles carrying off children

-physically impossible

-the gamekeepers have reason to want these birds not re-introduced

-since they get money for raising birds and small animals for people to come and hunt on their property

-game that could be eaten by the eagles too

OT: Why save the rain forest?

-oxygen production? No.

-most oxy produced by plankton in the ocean

-water cycle and possible medicine discoveries? Yes

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**Chapter 2: Chemistry**

Objectives:

-understand water's properties that help it support life

-describe carbohydrates -structure/function

- // proteins - // //

-// nucleic acids - // //

-// lipids -// //

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**Atoms:**

-**atom**: a bit of matter, cannot be divided without losing essential properties

-ex: an atom of gold = a lb of gold in properties

-**element**: substance cannot be broken down chemically into other substances

-25 elements found in Human Body

96%= oxygen, carbon, hydrogen, nitrogen

**Properties of Water:**

-help enable it to support life

1. Cohesion/adhesion

2. large heat capacity

3. Low density as a solid

4. Good solvent

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**1. Cohesion/Adhesion:**

-hesion: stickiness

-cohesion: similar atoms/molecules sticking together

-adhesion: different atoms/molecules sticking together

Two chemical reactions that all life depends on:

*1.) Photosynthesis:*

-plants: has a chloroplast, in leaves (why do we know in leaves? bc green and the properties of chloroplast (uses all the light but the green of the light spectrum))

-water comes from roots, CO2 is from pores in the leaves

-how does water travel up the length of tree?

-cohesion, water likes to stick together

-as water evaporates from leaves, water pulls more water up through the roots

-another ex: drinking straw

-takes CO2 (Carbon Dioxide) and H2O (water) and sunlight (energy)

-puts out: O2 (oxygen), Sugar

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**High Surface Tension**

-part of Water Adhesion/Cohesion

-water molecules are v shaped, holds together very strongly

-very tightly packed together

-ex: Jesus Lizard

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**2. High Heat Capacity**

-water absorbs a lot of calories, w/o big change in temperature

-bc new hydrogen bonds form almost as fast as they are broken by heat

-uses lots of calories (heat) to change states (liquid, solid, gas)

-water, only substance on Earth that appears in all three states naturally

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**3. Low Density as a Solid**

-ie: Ice Floats (only solid state on earth lighter than liquid)

-bc. hydrogen bonds in a lattice (when frozen), keeping the molecules further apart

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**4. Solvent**

-things dissolve in water easily

-ex. salt water: ionic compound (Salt) breaks into positive and negative ions. Positive ions are attracted to negative side of H2O molecule, and negative ions attracted to the positive side of the H2O molecule

-we dissolve chemicals in body through water, then transported through bloodstream

-human beings = chemical reactions

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**pH: Acidic and Basic conditions**

-amount of H+ (hydrogen ions) in solution = measure of acidity (pH)

**-Acids**

-greater amount of H+ than OH- ions

-very reactive

-corrosive

-breaks down food in digestion

-generally sour-tasting

**-Bases**

-greater amount of OH- to H+ ions

-OH= bind with H+ ions, neutralizes acids

-strong bases = caustic to human skin

-found in many household cleaners

-generally bitter taste, soapy

-on a scale, starts with 7 (water)

-O = most acidic (battery acid)

-14 = most basic (13 = bleach)

-each movement up or down a number = x10

**Blood pH:**

-lots of illnesses have to do with pH regulation in blood

-buffers: regulated the pH in blood

-too base: releases H+ ions, too acidic = absorbs H+ ions

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**4 Types of Macromolecules:**

-carbohydrates

-lipids

-Amino Acids/Proteins

-Nucleic Acids - DNA/RNA