Biology **Instructor: Barton Clark**

Casa Grande High School ***for your notes*** **Fall 2024**

Review guide for test 1 Biology.	**…..No notes allowed…**	**Test Date: Thurs/Fri. Oct. 24/25**

The student can expect to see a combination of multiple choice, short answer and labeling questions.

From Class discussions With regard to Carbon cycling, what are the primary forms of Carbon in Earth systems? Where is most of the world's carbon stored? What has been the historic range of Carbon Dioxide in the Earth's atmosphere.. what is the value today? What are the main probabilities for what caused the Permian extinction? How does acid rain form?

How do we calculate the concentration of substances (salt in water, CO2 in the atmosphere, etc.) What does ppm, ppt and ppb mean? Can you convert to the decimal equivalent? Know the chemical symbols and using the periodic table of elements, how to determine the number of protons, electrons and the atomic weight for each of the following elements. Sodium, Chlorine, Oxygen, Iron, Calcium, Nitrogen, Lead and Hydrogen.

From the Tums lab (dissolving Calcium Carbonate with acid lab): Know how to write out the chemical formulas and chemical reactions for the following processes..

1. How the acid we used in our Tums Tablet lab reacted with the Tums Tablets (what were the reactants and what were the products, including their respective states of matter).
2. What happens when Carbon Dioxide reacts with ocean water.
3. What happened in our Tums lab when we added dissolved Sodium Carbonate to our acid solution.
4. What the chemical reaction for photosynthesis is.
5. What the chemical reaction for combustion of wood fiber looks like.
6. What the chemical formula for Calcium Carbonate is.

From the Percent Mass lab/activity. Know how to determine the percent mass of an element is within a compound. (ie., what is the percent mass of Carbon is there Calcium Carbonate? How much Sodium is there in Table Salt? Etc.)

How to predict, given a chemical reaction, how many grams (kilograms, pounds, etc.) of CO2 would be consumed or produced in that reaction.

From the film Chasing Ice: What causes the small holes in the top of the ice sheets? What is a Moulin (note: these are related to glaciers).. how do these structures affect the loss of glaciers? Given a map of the world, can you locate Greenland? What are reinsurance companies?

From the Biology text book and other readings: What are heterotrophs and autotrophs? Why does the biomass at each trophic level decrease as you move 'up' the food chain? What happens to most of the energy in a system as it 'moves' up the food chain? Oceans: Why are the ocean oxygen levels declining? What is the projected % decline in ocean oxygen by the year 2100? How did ocean oxygen levels decline during the Permian Extinction? What happens to fish when oxygen levels are reduced? What causes ocean 'dead zones'?

Permian Extinction: How many million years ago did it happen? What fraction of marine species were wiped out? What are the likely causes of the extinction?

What kind of rock is found in Oman? Where is this rock formed? What is it about this rock by utilized to reduce global warming? What are some strategies to use it?

From the thermal energy lab: How to use the specific heat equation including how to determine how much heat an object must have gained as it warmed up (or cooled down) and/or how much mass a given amount of energy can warm up to a certain temperature.