

Name: _____

Quiz 1
BI-102, Winter '04-'05, Dr. C. S. Tritt

Each problem is worth the same amount. Try to keep your answers short and concise.

Each problem graded on a 10 point basis and total divided by 0.80 to put on 100 point scale.

1. Describe one of the fundamental attributes of a good hypothesis.

It explains an observation or physical phenomena and/or it is testable (or falsifiable).

2. Name or briefly describe a single modern type of evidence supporting Darwin's hypothesis.

Any of the following: fossil record, age of Earth, mechanism of heredity, comparative anatomy, molecular (DNA) evidence, phylogenetic relationships.

3. Describe an attribute of water that makes it so important to life on Earth.

Any of the following: Good solvent, stores heat (or high specific heat or heat of vaporization), organizes other molecules, ionizes (or can participate in chemical reactions) or expands on freezing. Just saying its important to life -5.

4. Concisely define pH.

$-\log[\text{H}^+]$ (or the negative log of the hydrogen ion concentration). Just saying hydrogen ion concentration -3, saying something similar -5.

5. Briefly explain what makes carbon such a chemical versatile element.

It can form 4 covalent bonds and/or in can form bonds with itself to form large (macro) molecules and/or it can form bonds with many different atoms creating many possible "functional groups." Just saying 4 electrons -5.

6. Explain what physically happens to a protein when it becomes *denatured*.

Its tertiary structure changes (breaks down or is destroyed) or it unfolds. Saying it becomes inactive -5.

7. Concisely state the defining characteristic of lipids.

They are insoluble in water or they are soluble in **non-polar** solvents. Non defining like stores energy -3, just saying "fat" -7. Accepted non-polar, saying have polar and non-polar parts -7.

8. State the general chemical formula for carbohydrates.

$(\text{CH}_2\text{O})_n$ forgetting the 2 -5, forgetting the n -1.