**Biology Semester 1 Final Review**

**Scientific Processes**

1. The study of cell is called \_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a powerful, time tested explanation of a natural phenomenon.
3. Biology is the study of \_\_\_\_\_\_\_\_\_\_\_\_
4. The key components of the scientific method are

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1. \_\_\_\_\_\_\_\_\_\_ is the study of small, microscopic life.
2. The metric unit for volume is \_\_\_\_\_\_\_\_, for length is \_\_\_\_\_\_\_\_, and for weight is\_\_\_\_\_\_\_\_\_\_.

**Chemistry and Energy**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ is anything that has mass and takes up space.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_ has a neutral charge.
3. Protons have a \_\_\_\_\_\_\_\_\_\_\_\_ charge.
4. Electrons have a \_\_\_\_\_\_\_\_\_\_\_\_ charge.
5. An \_\_\_\_\_\_\_\_\_\_ has only one type of atom in it.
6. The 4 biological macromolecules are \_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_.
7. Write the chemical reaction for photosynthesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. A \_\_\_\_\_\_\_\_\_\_\_ has 2 or more different atoms in it.
9. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the biological macromolecule made up of amino acids.
10. Write the reaction for cellular respiration: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. The study of living matter is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are sugars and starches.
13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the process of plants using sunlight, water and carbon dioxide to make glucose and oxygen.
14. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are biological macromolecules that are waxy or oily.
15. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the process that requires oxygen to break down glucose into ATP and also produces carbon dioxide.
16. ATP provides the body with \_\_\_\_\_\_\_\_\_\_\_\_.
17. \_\_\_\_\_\_\_\_\_\_\_\_ is the study of matter.
18. \_\_\_\_\_\_\_\_\_\_\_\_\_ is the diffusion of water through a selectively permeable membrane.
19. Proteins are used for \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
20. In chemical reactions, atoms are \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
21. A hypotonic solution is when \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
22. A hypertonic solution is when\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
23. An isotonic solution is when\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
24. Glucose is made in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ stage of photosynthesis.
25. ATP and oxygen are made in the \_\_\_\_\_\_\_\_\_\_\_\_\_ stage of photosynthesis.
26. The Krebs cycle occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the mitochondria.
27. Glycolysis occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
28. \_\_\_\_\_\_\_\_\_\_\_\_ produces the most ATP during cellular respiration.
29. Anabolic reactions \_\_\_\_\_\_\_\_\_ molecules which \_\_\_\_\_\_\_\_\_ energy.
30. Catabolic reactions \_\_\_\_\_\_\_\_\_ molecules which \_\_\_\_\_\_\_\_ energy
31. The anabolic cellular process is called \_\_\_\_\_\_\_\_\_\_.
32. The catabolic cellular process is called \_\_\_\_\_\_\_\_\_\_.

**The Cell**

1. A \_\_\_\_\_\_\_\_\_\_\_\_ is a simple cell with **no** nucleus or other membrane bound organelles.
2. A \_\_\_\_\_\_\_\_\_\_\_\_ is a more complex cell with a true nucleus.
3. Draw a eukaryote and label **ALL** of its organelles.
4. Explain what each organelle does.
5. Some molecules can pass through the cell membrane and others cannot making it \_\_\_\_\_\_\_\_.
6. Active transport and osmosis occur across the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. The 3 rules of the cell theory are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_.
8. A \_\_\_\_\_\_\_\_ is the basic unit of life.

**DNA,**

1. DNA’s structure is called a \_\_\_\_\_\_.
2. DNA is stuck inside the \_\_\_\_\_\_\_\_\_.
3. DNA’s 4 nitrogen bases are \_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_.
4. RNA has 1 different nitrogen base called \_\_\_\_\_\_\_\_\_ which takes the place of \_\_\_\_\_\_\_\_\_\_.
5. Draw a DNA nucleotide and label its parts.