**Chapter 1 – Review Guide**

**Biology 17-18**

**Part 1: Vocabulary**

* All terms on the vocabulary sheet are considered testable information so make sure to spend time practicing with these words prior to the test.

**Part 2: Steps of Scientific Method**

1. Define Observation =
2. Define Inference =
3. Label the following statements either as an observation (O) or an inference (I)
	1. \_\_\_\_ Zach is wearing a blue shirt.
	2. \_\_\_\_ Anyone who wears a Yankees shirt likes baseball.
	3. \_\_\_\_ There are 15 students on the bus.
	4. \_\_\_\_ Julie must have gotten in trouble because I saw her go to the principal’s office
	5. \_\_\_\_ People who live in Alaska like winter.
	6. \_\_\_\_ It is hot outside today.
4. Define Hypothesis –

 \*\*What important words must a hypothesis contain?

 1.

2.

3.

6. What is a controlled experiment?

1. Compare and Contrast the Control Group and Experimental Group in an experiment. (You cannot use the word group or say they occur in science/science experiment as a comparison.)
2. The number of flowers on different breeds of bushes in a greenhouse is recorded every week for two months.

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| --- |
| IV: |
| DV: |
| Constants: |
| Hypothesis: |

1. You give four sunflowers different watering with either pure water or different concentrations of salt solutions. After a two-week period, the height is measured.

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| --- |
| IV: |
| DV: |
| Experimental Group: |
| Control Group: |

1. Three redwood trees are kept at different humidity levels inside a greenhouse for 12 weeks. One tree is left outside in normal conditions. Height of the tree is measured once a week.

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| --- |
| IV: |
| DV: |
| Hypothesis: |

1. Compare and Contrast a LAW and a THEORY.
2. An experiment studies the effects of an experimental drug on the number of offspring a mother mouse has. 10 female mice are given the drug and then impregnated. The number of mice in their litters is compared to the litters of mice that did not take the drug.

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| --- |
| **Number of Babies in litter** |
| Group A (Drug) | 5 | 6 | 4 | 8 | 5 | 3 | 7 | 12 | 12 | 8 |
| Group B(No Drug) | 4 | 4 | 6 | 6 | 5 | 6 | 4 | 7 | 5 | 3 |

1. Make an observation about the experiment performed above.

B. What is the independent variable?

C. What is the dependent variable?

D. Write the hypothesis being tested in this experiment.

1. Why do scientists repeat experiments and/or publish their work?

**Spontaneous Generation:**

1. Compare and Contrast Spontaneous Generation and Biogenesis.
2. Explain what your scientist contributed to the spontaneous generation debate. (What was the big take away and/or discovery?) Do NOT just tell me about their experiment set-up.

**Characteristics of Life**

1. For each example below write which characteristic of life is represented by each statement.

 a. An amoeba divides in half to form two individuals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. A deer hears a sound and runs. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. A grasshopper eats a plant, a bird eats the grasshopper, and a cat eats the bird.

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 d. Cells containing the same active genes arrange themselves to work together to

 form muscle tissue. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 e. An egg turns into a larva, which turns into a pupa, which turns into an adult.

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 f. A grandmother, her daughter and granddaughter all had sons with hemophilia.

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 g. The light brown color of a sand spider blends in with the sand.

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1. What characteristics of living things were absent from the examples in problem #13 above?
2. How many characteristics of life does an organism have to possess to be considered alive?