Biology Review

**-**Use your notes to answer the following questions and find the following definitions.

**-**Having an understanding of the following information is critical for you to do well on the biology unit test.

**-**Terminology you need to know is in bold.  
-Any drawings or definitions you do not have room for: use the back of the page

Microscope:

1. How do you safely carry a microscope?
2. At what magnification is it okay to use the coarse focus?

Cell Structure and Function

1. What are the levels of organization in an organism?
2. **Organelles** structure and functions we went over in class
3. What organelle is more common in liver cells which are responsible for breaking down toxins?
4. What are 4 differences between **plant cells** and an **animal cells**
5. Is a cell membrane **permeable** or **semi-permeable**? What does this mean for the cell?

1. What is the relationship between **Surface Area** and **Volume** (*Hint: what happens when a cell gets larger)*?
2. How does a cell in the digestive system maximize its ability to absorb nutrients?

Mitosis:

1. What is the end product of a cell that undergoes **mitosis**?
2. What is the purpose of mitosis?

Meiosis:

1. What is the purpose of **meiosis**?
2. What is the end product after a cell undergoes meiosis?
3. How does meiosis create genetic diversity?

Genetic material

1. How many **chromosomes** are in a human cell?
2. Why was the **DNA** we extracted from strawberries not “pure” DNA (hint: **chromatin**)?
3. We say DNA is redundant, what does this mean and why is it important?
4. Draw and label the structure of DNA
5. If a strand of DNA has the following **nucleotides** on one backbone what would the **complementary base pairs** on the opposite backbone be?

ACGTGGTCAATATG

Inheritance

1. What is a **gene**? An **allele**?
2. What is genotype and how is it related to phenotype?
3. Define: Heterozygous, Homozygous dominant, Homozygous recessive
4. Make a punnet square combining a homozygous dominant and a heterozygous flower (The dominant allele is completely dominant)

**K** is the dominant for long petal and **k** is recessive and results in short petals

1. What is the phenotype of a KK, Kk or kk flower given the information above?