Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
NDHS Per: \_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cell Structure Unit Test Study Guide**

**Test format:**

Multiple Choice Questions  
Short Answer Questions  
**Muscle Contraction Essay**Graphing and Graph Interpretation  
Percent Change Calculations  
 **STUDY TIPS:**

DO NOT WAIT UNTIL THE NIGHT BEFORE! Your brain might explode.   
Break the content up into manageable parts and study part of it each night.   
Don’t just stare at your notes and read them. Your brain will work better and remember more if you reprocess the information. Rewrite the notes, make flash cards, organize the information into a chart or outline.

**DAY One:**Cellular Structures:  
Review the cell parts and what each does in the cell  
Explain how a protein moves through the cell and is shipped outside of it using the Endomembrane system and exocytosis

**DAY TWO:**Muscle Contraction and Muscle Cells  
Major Muscles of the Body – you will not have to label a diagram again but you will need to know where the muscles are on the body to answer questions in the multiple choice section.   
Structure of a muscle  
Explain how a muscle contracts – essay  
Short term and long term effects of exercise on muscles

**DAY THREE:**Cell Transport  
Structure of the Cell Membrane and how that regulates the transfer of materials into and out of the cell  
Types of Transport and how they work: Active, Passive, Diffusion, Osmosis, Facilitated Diffusion  
Know what will happen to different types of cells (with walls and without) in various types of solutions (hypertonic, hypotonic, isotonic). Explain WHY the cell changes.   
Bulk Transport: Endocytosis (Phago and Pino), Exocytosis

**Day FOUR:**Review Everything, especially your weakest areas.

**Percent Change Calculation Problems:**

Calculating Change in Mass: Change in Mass = New Mass – Original Mass

Calculation % Change in Mass: Percent = Change in Mass X 100  
 Original Mass

1. A puppy weighs 1.5 kg when it is born, after three months it weighs 5.5 kg. What is the change in mass and the percent change in mass of the puppy?
2. Another puppy is born (a different type) and it weighs 7.5 kg. After three months it weighs 15.0 kg. What is the change in mass and the percent change in mass of this puppy?
3. Which puppy gained the most mass? Which puppy grew the most? Explain your answer. (HINT the answers are not the same)
4. A 4.0 gram slice of potato is placed in an unknown solution and left to sit for 24 hours. If the potato slice has a mass of 2.0 grams after the 24 hour period, what is the percent change in mass? Was the solution hypertonic, isotonic, or hypotonic? Explain.

**Answers**: 1) 4.0 kg, 267% growth 2) 7.5 kg, 100% growth 3) While the second puppy gained more mass, the first puppy actually grew more. 4) – 50.0% The solution was hypertonic because the potato lost mass which shows that water moved out of the cells into the solution.