HOMEWORK #14

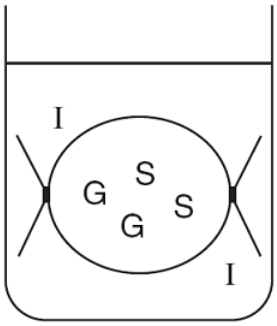
This assignment is due at the start of the class band on _____.

A. Watch the following online video: "Diffusion Lab Review"
https://www.youtube.com/watch?v=cyN3CmtFVNg

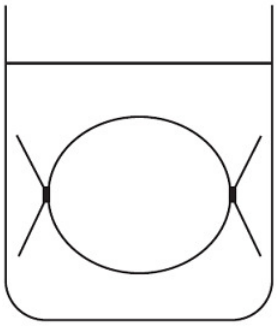
B. Reread Miller & Levine (textbook) pp. 176–178 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.

1. Draw a plant cell, then redraw the plant cell showing what it would look like after being placed in a 15% salt solution for 20 minutes. Be sure to label the cell wall, cell membrane, and cytoplasm in both diagrams.

2. The "initial state" diagram below shows the setup from the diffusion lab. The letters *S*, *G*, and *I* represent starch, glucose, and Lugol's iodine solution, respectively.



Initial State


Final State

Complete the "final state" diagram, by adding the letters *S*, *G*, and *I* to show where starch, glucose, and iodine were found at the end of the lab. *Redraw the diagram with your answer on a separate sheet of paper.*

HOMEWORK #15

This assignment is due at the start of the class band on _____.

A. Watch the following online video: "BrainPOP: Endocrine System" (see Mr. Sprague for password)
https://www.brainpop.com/health/bodysystems/endocrinesystem

B. Read Miller & Levine (textbook) pp. 810–816 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.

1. Explain how insulin helps maintains homeostasis in humans. In your answer, be sure to:
   - describe the role of hormones in the human body
   - state the job of insulin in the human body
   - identify the gland that produces insulin
   - identify *one* human hormone other than insulin, state the job of this hormone, and identify the gland that produces this hormone

2. The pituitary gland releases thyroid stimulating hormone (TSH) into the blood to signal the thyroid gland to start releasing its hormones. Explain why only the cells of the thyroid gland receive this message even though all cells are exposed to TSH as it travels through the blood.

3. Explain how negative feedback ensures that hormone levels are not too high or too low.

HOMEWORK #16

This assignment is due at the start of the class band on _____.

A. Watch the following online video: "BrainPOP: Immune System" (see Mr. Sprague for password)
https://www.brainpop.com/health/bodysystems/immunesystem

B. Watch the following online video: "BrainPOP: Vaccines" (see Mr. Sprague for password)
https://www.brainpop.com/health/diseasesinjuriesandconditions/vaccines

C. Watch the following online video: "BrainPOP: Neurons" (see Mr. Sprague for password)
https://www.brainpop.com/health/bodysystems/neurons

D. Read Miller & Levine (textbook) pp. 841–851 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.

1. Explain how a nerve impulse travels through a synapse from one neuron to the next.

2. Explain how a flu vaccine protects the human body against pathogens. In your answer, be sure to:
   - identify what substance is in a flu vaccine that stimulates immunity
     [*Hint: be very careful about how you word your answer*]
   - state how the human body reacts to the flu vaccine
   - explain why the flu vaccine does not protect a person from other viral diseases, such as measles
   - explain why a person who wants to be protected against the flu must get a new flu vaccine each year

3. Explain the cause of the following diseases: allergies, autoimmune disorders, AIDS.

HOMEWORK #17

This assignment is due at the start of the class band on _____.

A. Watch the following online video: "BrainPOP: Growth" (see Mr. Sprague for password)
https://www.brainpop.com/health/geneticsgrowthanddevelopment/growth

B. Read Miller & Levine (textbook) pp. 234–237 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.

1. Reproduction is one of the eight life functions that define living things. Explain why reproduction is considered a life function even though an organism can survive without reproducing.

2. Humans reproduce sexually, but we could not live without our individual cells reproducing asexually by cell division. Explain why asexual reproduction within our own bodies is necessary for survival.

Mark your calendar…
The tentative date for the Final Exam is Friday, January 20, 2017!
Extra credit coupons are due on the day of the Final Exam.