Score: /25

Name: _____ Lab: _____

BBQ#2

Due Date: During the first 5 mins of Exam#2

Checklist:

- ☐ 4 misconceptions (Explain why they are not true)
- ☐ BBQ 9
- ☐ BBQ10 (ATP Q's)
- ☐ BBQ11
- ☐ BBQ12
- ☐ BBQ13
- ☐ BBQ14

Review & Practice exams are available at: https://zanniedallarasciencepage.weebly.com/bio-11---exam-2.html

Stamps:

Week 6 in lab:

BBQ9	***BBQ10***	***BBQ11***	***BBQ12***

Week 7 in lab:

BBQ13	***BBQ14***	***BBQ15***	***BBQ16***

BBQ#9

1. What is the cellular currency of energy? *(How do cells move energy?)*
2. Draw it (include the bonds and structures)
   - **Where** in the diagram above does ATP store energy – (Highlight in the diagram above?)
   - **How** does it store energy?
3. Animal cells use what organelle to make energy?

Lec #8 – Energy and ATP:

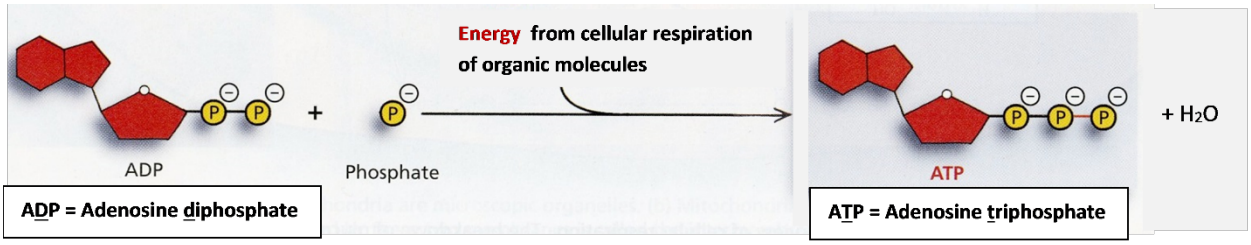
BBQ#10: ATP Questions

How do biological organisms use energy?[1]

The Importance of ATP

Living organisms use a two-step process to provide the energy needed for most biological processes.

I. First, cellular respiration makes ATP from ADP plus a phosphate (P). The energy for this chemical reaction is provided by the cellular respiration of sugars or other organic molecules.



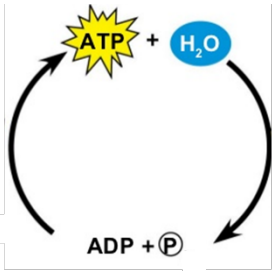
II. Then, the hydrolysis of ATP provides the energy for most biological processes. When ATP and water react to form ADP plus a phosphate, this reaction releases energy which is used for many different cellular processes.

To Do:

1. Give one reason why the reaction, ADP + P → ATP + H_2O, requires energy input. (Hint: Notice the charges of the molecules in the top figure.)

2a. Inside each cell, there is a constant cycle of synthesis and breakdown of ATP. Add to this diagram to show:

- How cellular respiration contributes to the production of ATP
- How the hydrolysis of ATP to form ADP + P is useful.



2b. Explain why a cell needs to constantly break down and synthesize ATP.

3. Explain why your body gets warmer when you are physically active.

[1] By Dr. Ingrid Waldron, University of Pennsylvania, 2016.

BBQ#11

Complete the table on Cellular Respiration

1) What is the purpose of cell respiration?

2) Why do you die without O_2?

3) Complete this Table	Step 1	Step 2	Step 3
Name of step			
Location of step			
Amount of ATP produced			
Basic Function			

Lec #9 – Cell Respiration:
BBQ#12: Why do we breathe?[1]

I. Cellular Respiration

The chemical equations shown below summarize the cellular respiration of glucose (a simple sugar). Glucose and oxygen are the inputs for a series of chemical reactions which produce carbon dioxide and water, and provide the energy to make ATP molecules. The actual process of cellular respiration in cells requires many steps which are not shown here.

$C_6H_{12}O_6 + 6\ O_2 \longrightarrow 6\ CO_2 + 6\ H_2O$

V

V

$\sim 29\ ADP + \sim 29\ P \longrightarrow \sim 29\ ATP + \sim 29\ H_2O$

→ represents one or more chemical reactions

V represents energy transfer between coupled
V reactions

1. Write the names of each of the molecules in these chemical equations.

→

2. How do our bodies get glucose and other organic molecules for cellular respiration?

If you search for "cellular respiration equation" on the web, some of the most popular sites give the following chemical equation for cellular respiration of glucose.

$$C_6H_{12}O_6 + 6\ O_2 \longrightarrow 6\ CO_2 + 6\ H_2O + ATP$$

3a. What is wrong with this chemical equation? (Hint: Think about where the atoms in an ATP molecule come from.)

3b. Write a corrected version of this chemical equation that gives a more accurate summary of cellular respiration. (Hint: This corrected chemical equation should combine the two coupled reactions shown in the middle of this page.)

BBQ#13

Complete the table on Photosynthesis

Why do animals rely on plants?

Why do plants rely on animals?

Why do plants do photosynthesis?

	Step 1	Step 2
Name of step		
Location of step (be specific to organelle and where)		
Amount (#) ATP produced		
Basic Function		

Lec #11 – Plant Evolution:

BBQ#14

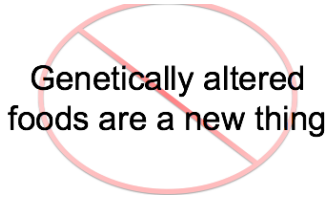
Complete the table on the Evolution of Plant Reproduction

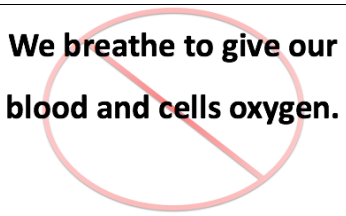
Why does evolution of plants take so many steps and years to move to land?	
Why did some plants leave water?	

	Moss	Fern	Pine Tree	Flowering Plant
Scientific Name of Plant				
Where do they live? (water, land, wet land)				
Method of Reproduction (Spores or seeds)				
Pros of Method				
Cons of Method				

Misconceptions:

Chose 4 to address (explain why they are wrong).





OR