

AP Biology 1st Semester Final Exam Study Guide 2017-2018

- Fill in the following chart:

Polymer	Elements Present	Monomers	Type of Bond Between Monomers	Function(s)	Properties	Examples
Carbohydrates						
Lipids						
Proteins						
Nucleic Acids						

- What is the difference between a saturated and an unsaturated fatty acid?

- List and describe the 4 levels of organization in proteins.

- To which group of organic compounds do starches belong? What is the main function of starches? What is the main starch in plants and animals?

Name

Date

Period

- Fill in the following chart describing the properties of water:

Property	Description/Definition	What accounts for this property?
High Specific Heat		
High Heat of Vaporization		
Cohesion/Adhesion		
Surface Tension		
Evaporative Cooling		
Good Solvent		
Water is less dense in solid form		

- Draw a picture/example of each of the following molecules:
 - Monosaccharide

 - Polysaccharide

 - Protein

 - Amino acid

 - Phospholipid

 - Starch

 - Fatty Acid

Name

Date

Period

- What is a hydrogen bond? Draw a picture illustrating a hydrogen bond between 2 water molecules. Do hydrogen bonds occur between atoms in the same molecule or between different molecules?

- Draw the general form of an amino acid and label each of the functional groups. Which of these groups are present in ALL amino acids?

- If a concentration gradient of a certain solute exists across a semipermeable membrane that is permeable only to water, can equilibrium ever be reached? Explain.

- Define osmosis. What is the difference between osmosis and diffusion?

- What is the difference between diffusion and facilitated diffusion?

- What is plasmolysis? What causes it?

- What is the difference between active and passive transport?

- Define the following terms: hypertonic, hypotonic, and isotonic. Using these terms, in which direction will osmosis always occur?

Name _____

Date _____

Period _____

- Identify and describe the function of each structure in the pictures below:

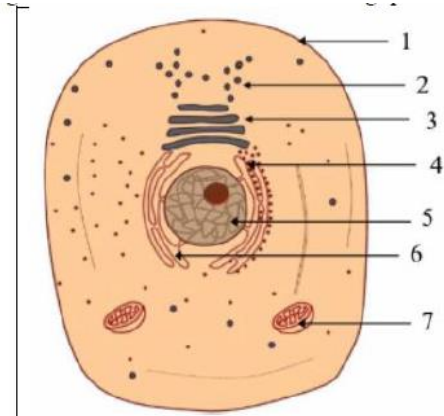


Diagram A

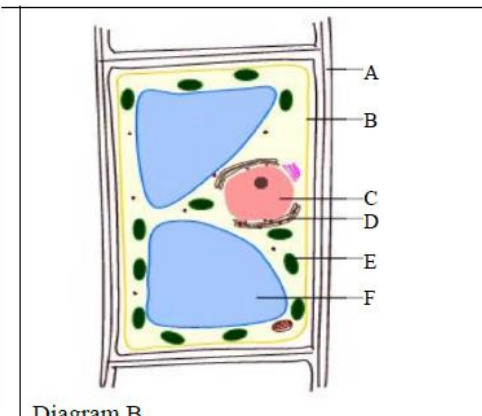


Diagram B

Structure	Organelle	Function	Animal or Plant Cell or Both	Eukaryotic or Prokaryotic Cell or Both
1				
2				
3				
4				
5				
6				
7				
A				
B				
C				
D				

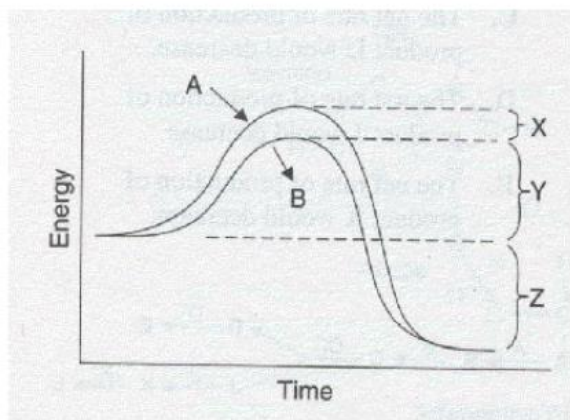
Name

Date

Period

E				
F				

- What is an oligosaccharide? Where are they typically located on/within the plasma membrane?
- In a phospholipid, which part of the molecule is hydrophobic and which is hydrophilic?
- Identify and describe each component in the graph below. What does this graph represent?



- What is the purpose of oxygen in cellular respiration?
- What is the main function of cellular respiration? Name the 3 stages of aerobic respiration.
- In the diagram below, identify the stage of photosynthesis represented by both pathway A and pathway B. Also identify which reactant or product of photosynthesis is represented by each number.

