

Name Key

Biochemistry & Cells Review Sheet

Microscope

1. What type of microscope do we use in class?
Compound light microscope
2. How do we find the total magnification?
 $\text{ocular lens} \times \text{objective lense} = \text{total magnification}$
3. What part of the microscope controls the amount of light on the specimen?
Diaphragm
4. What do we never ever use under high power?
Coarse adjustment knob
5. All images under a microscope appear...
magnified, upside down and backwards
6. What is it called when we make a slide in class?
wet mount slide

Tools & Techniques

1. What technique separates DNA fragments based on size using an electric current?
gel electrophoresis
2. Which technique separates pigments?
chromatography
3. Which technique separates materials based on densities?
Centrifuge
4. Why would we stain a slide?
to make cell parts more visible
5. I would use iodine to test for the presence of what? What color change would I see?
Starch - amber to purple/black
6. I would use benedicts solution to test for the presence of what? I will only see this color change if I heat the solution. What color change would I see?
glucose - blue to brick orange when heated

Biochemistry

1. What are the building blocks of proteins?
amino acids
2. What are the building blocks of lipids?
glycerol + fatty acids
3. What are the building blocks of carbohydrates?
simple sugars / monosaccharides / glucose
4. Carbohydrates are used as?
Energy
5. Lipids provide us with?
protection, insulation, energy reserves

6. What is the minimum number of amino acids needed to synthesis a protein?

50

* 7. What is hydrolysis?

adding water to break apart a large molecule

8. What is dehydration synthesis?

* removing water to join two smaller molecules together.

Cells

1. List the levels of organization of life from least complex to most complex

cell → tissue → organ → system → organism

2. List the three parts of the cell theory.

1. Cells are the basic unit of structure and function of all living thing

2. Living things are made up of one or more cells

3. All cells come from pre-existing cells

3. What part of plants cells is made up of cellulose and provides support?

cell wall

* 4. In plants, where does photosynthesis take place?

chloroplast

5. What is the main function of the endoplasmic reticulum?

transport

6. Where are ribosomes found?

In the cytoplasm and attached to rough ER

* 7. The cell's energy is made and stored in what organelle?

Mitochondria by cellular respiration

* 8. What organelle is the control center of the cell?

Nucleus

9. What organelle digests food particles and old cell organelles?

Lysosomes

10. What organelle stores water, waste and food?

Vacuole (larger in plants)

11. What are the main differences in plant cells?

Plant cells have a cell wall, chloroplasts and larger vacuoles,
No centrioles

* 12. What is the function of the cell membrane?

Controls (regulates) what enters and exits the cell

13. What is the permeability of a cell membrane?

Semi (selectively) permeable

* 14. What is the movement of water across a cell membrane is called?

Osmosis

15. Particles move from areas of higher concentration to lower concentration is

Diffusion

16. What type of transport is required to move a particle through a membrane without using energy?

Passive transport

17. What is active transport?

Movement of molecules from a low to high concentration, requires energy!

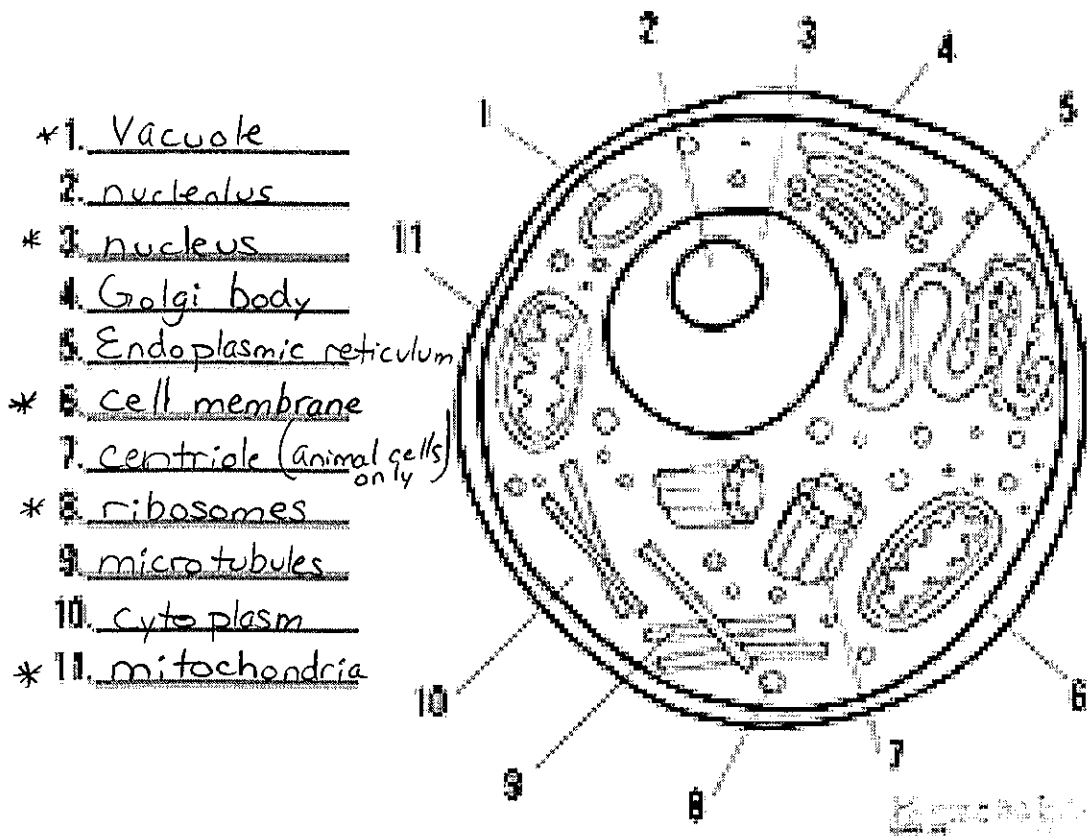
18. What happens to the water in a cell when we place salt water on it?

Water diffuses out of the cell, the cytoplasm and cell membrane shrink

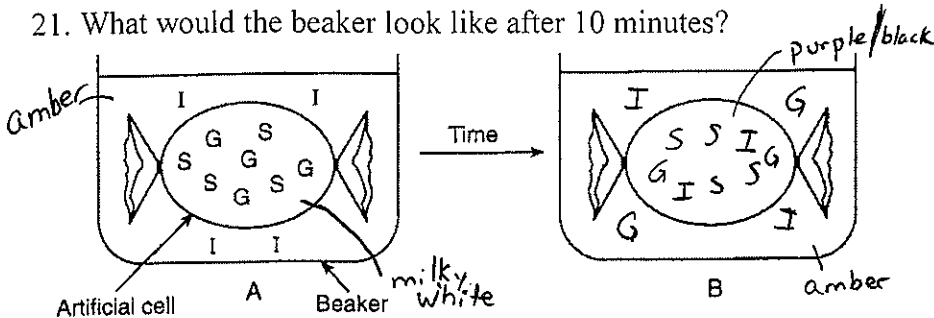
19. Can a cell perform all the processes necessary for life?

yes thanks to the organelles

20. Label the cells



21. What would the beaker look like after 10 minutes?



What was added to the cells?

