In Da Club – Membranes & Transport
Crash Course Biology #5

1. Cells have to be ___________________________ ______________________ – some things can easily cross the cell membrane, and some things cannot.

2. What are examples of things that can pass easily into cells?

3. What are examples of things that do not pass easily?

4. Different materials have different ways of crossing the cell membrane. There are basically two categories of ways: ___________ transport and ___________ transport.

5. Passive transport doesn’t require any ___________, and molecules (ex. oxygen, water) do this through _____________.

6. Diffusion of water is called ______________, and is how cells regulate their water content.

7. Osmosis occurs when solutions are of different concentrations:
   a. If a concentration of a solution is higher inside of a cell than outside of the cell, then that intracellular solution is called _____________________.
   b. If the concentration inside of the cell is lower than outside of the cell, it’s called _________________.
   c. When the concentration of solution inside and outside the cell is the same, it is called _________________.

8. When water moves to become isotonic, it’s called moving across its concentration _________________.

9. If a red blood cell were in pure water, the blood cell solution would be hypertonic (and the water solution is hypotonic). Water would move ___________ the cell.
10. Your ______________ are constantly on the job, regulating the concentration of your blood plasma to keep it isotonic.

11. Cell membranes are a ______________ bilayer that is hydrophilic, or water-loving, on the outside and hydrophobic, or water-hating, on the inside.

12. ______________ proteins allow passage of water and ions without using energy. The proteins that are specifically for channeling water are called ______________.

13. Most chemicals require energy to cross the cell membrane, which is called ______________ transport.

14. Energy-requiring processes, such as moving something across its concentration gradient requires ______________ ______________ (ATP).

15. ______________-_______________ pumps are especially important for cells that need lots of energy, like muscle cells and brain cells.
   a. Using a molecule of ATP, the protein pump moves ___ sodium ions out of the cell and ___ potassium ions into the cell.
   b. When a nerve cell is triggered, sodium ions rush in, and that gives the nerve cell a release of ______________ energy.

16. Vesicular transport is another means of active transport which uses ________________, tiny sacs of phospholipid membrane.
   a. Movement of materials outside of a cell is called ________________.
   b. Movement of materials into a cell is called ________________.

17. There are three different types of endocytosis.
   a. ________________: particles
   b. ________________: dissolved materials
   c. ______________-mediated endocytosis: specific molecules in small concentrations