Biology Midterm Review Do Now

1. Identify the Organelle that:

- Makes molecules like proteins – **Ribosome**
- Transports and Modifies proteins – **Golgi Apparatus** (and Endoplasmic Reticulum – Rough ER has ribosomes, and cytoplasm)
- Provided protection for the cell (animal and plant) – **Plasma/cell membrane, cell wall in plants**
- Provides energy (Plant and animal) – **Mitochondria , which goes through cellular respiration and is anaerobic.**
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2. Identify 3 types of transport

- Active Transport – Against concentration gradient. Requires Energy – ATP. Needs carrier protein in form of pump
  - Endocytosis – particles into cell
  - Exocytosis - particle out of cell
- Passive Transport – with Concentration gradient, doesn't require energy
  - Simple Diffusion – high to low
  - Facilitated Diffusion – movement of material across membrane using proteins (used if particles are too big, or have a charge)
- Osmosis – Diffusion of Water across a selectively permeable mebrane
- 3 types of solutions
- Isotonic - water and dissolved substances diffuse into and out of the cell at the same rate

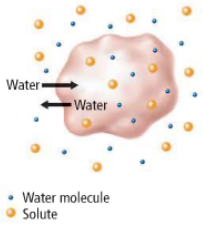

Figure 7.23 In an isotonic solution, water molecules move into and out of the cell at the same rate, and cells retain their normal shape. The animal cell and the plant cell have their normal shape in an isotonic solution.

- Hypotonic - solute concentration is higher inside the cell, water diffuses into the cell

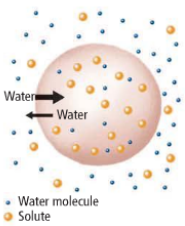

Figure 7.24 In a hypotonic solution, water enters a cell by osmosis, causing the cell to swell. Animal cells may continue to swell until they burst. Plant cells swell beyond their normal size as internal pressure increases.

- Hypertonic - solute concentration is higher outside the cell, water diffuses out of the cell

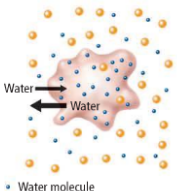

Figure 7.25 In a hypertonic solution, water leaves a cell by osmosis, causing the cell to shrink. Animal cells shrivel up as they lose water. As plant cells lose internal pressure, the plasma

- What happens to a cell (animal and plant) in each of those solutions?
    - Isotonic - normal shape
    - Hypotonic - animal: may swell until it bursts plant: swell beyond normal size as press. increases.
    - Hypertonic - animal: shrivel up as they lose water plant: as lose int. press., the plasma membrane shrinks away from the cell wall

- Types of Transport Proteins –
    - Carrier – change shape when bonded to particle
    - Channel – directly through

- Photosystem – splitting of water

3. How can the size of a bacteria population be affected by the amount of 0_2 (Oxygen) available ? Explain.

- The size of the bacteria population can be affected by the amount of oxygen available because
    - a population with oxygen will explode
    - a population without oxygen will decrease – it will survive at a lower rate using **anaerobic respiration**, but will not survive as as well.
        - The population will use a type of anaerobic respiration called Fermentation
            - 2 types of Fermentation
                - Lactic Acid – in muscle
                - Alcoholic – for bacteia
        - The bacteria will go through alcoholic

- You get more energy in Cellular Respiration than in Fermentation.