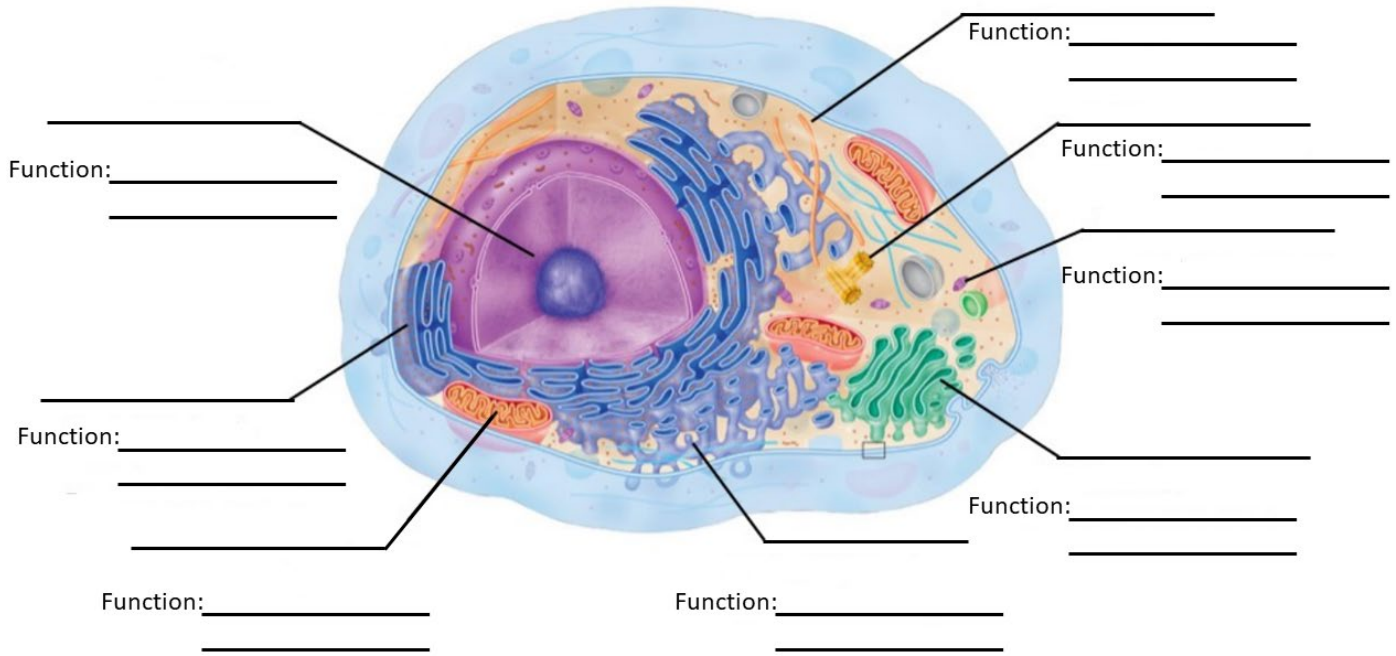


Review Sheet Midterm 1 – Physiology 2130  
 TA: Greydon Gilmore

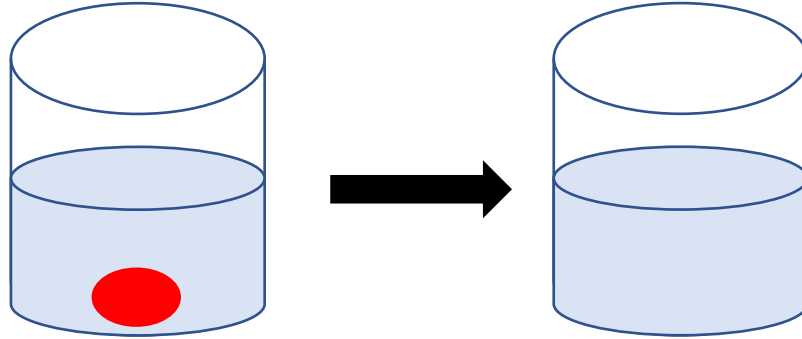
1. Complete the diagram with cell component and function



2. Fill in the following table:

	<u>Simple Diffusion</u>	<u>Diffusion</u>	<u>Facilitated Transport</u>	<u>Active Transport</u>
<u>Selective?</u>				
<u>Competitive inhibition?</u>				
<u>Goes with concentration gradient?</u>				
<u>ATP required?</u>				

3. You place a red blood cell into a 200 mM  $\text{BeCl}_2$  solution, draw the resulting shape of the red blood cell and write the definition of the solution (isotonic, hypertonic, hypotonic).



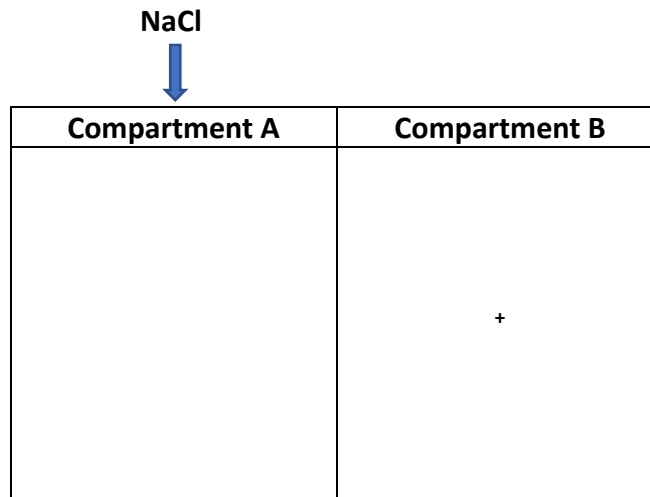
The solution is \_\_\_\_\_

4. The membrane separating compartment A and B is only permeable to water. Once osmotic equilibrium is reached, which compartment will have increased volume? Show your calculation and draw an arrow for flow direction.

Compartment A	Compartment B
200mM NaCl	300mM $\text{CaCl}_2$

Compartment A	Compartment B
200mM NaCl	400mM Glucose

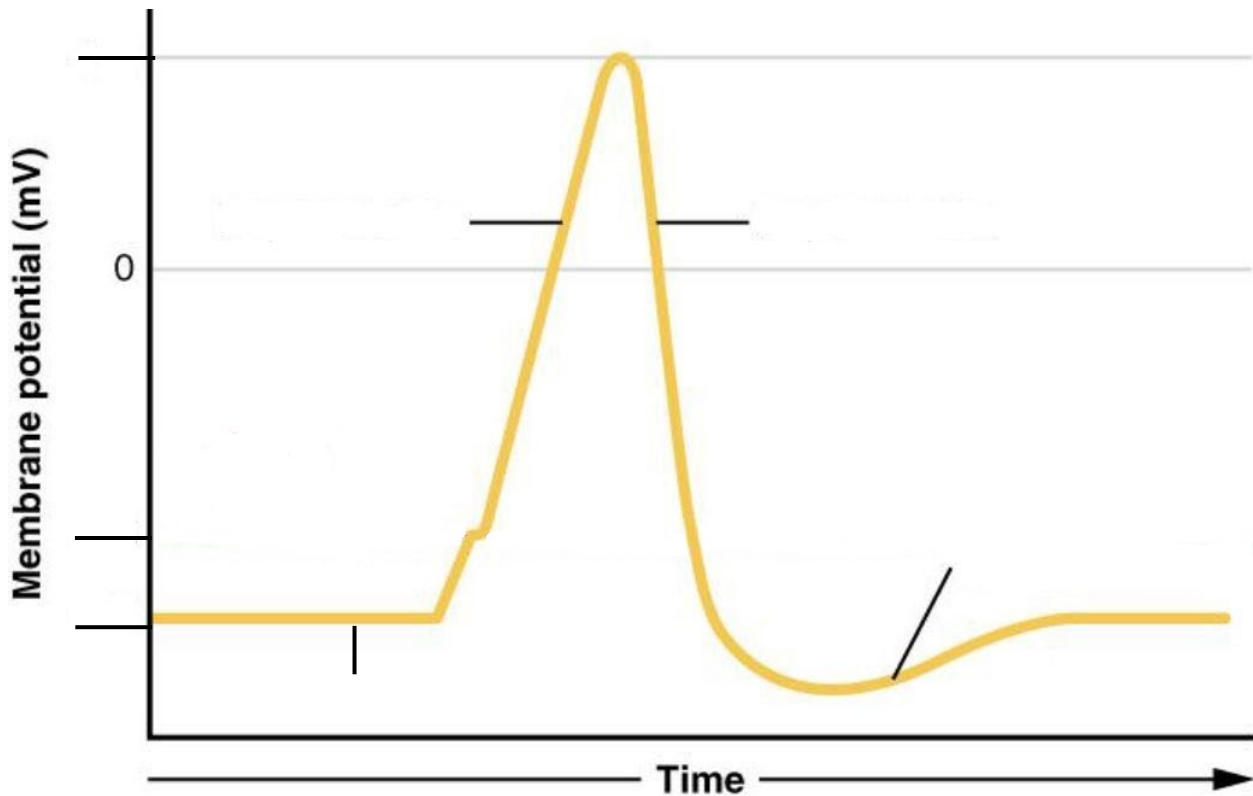
5. The membrane separating compartment A and B is only permeable to sodium. You now pour salt (NaCl) into compartment A. What will happen to compartment B? Draw an arrow to indicate potential flow, write any ions that will be present in compartment B and name the main driving force that is occurring here. Are there any other forces present?



6. Complete the following table:

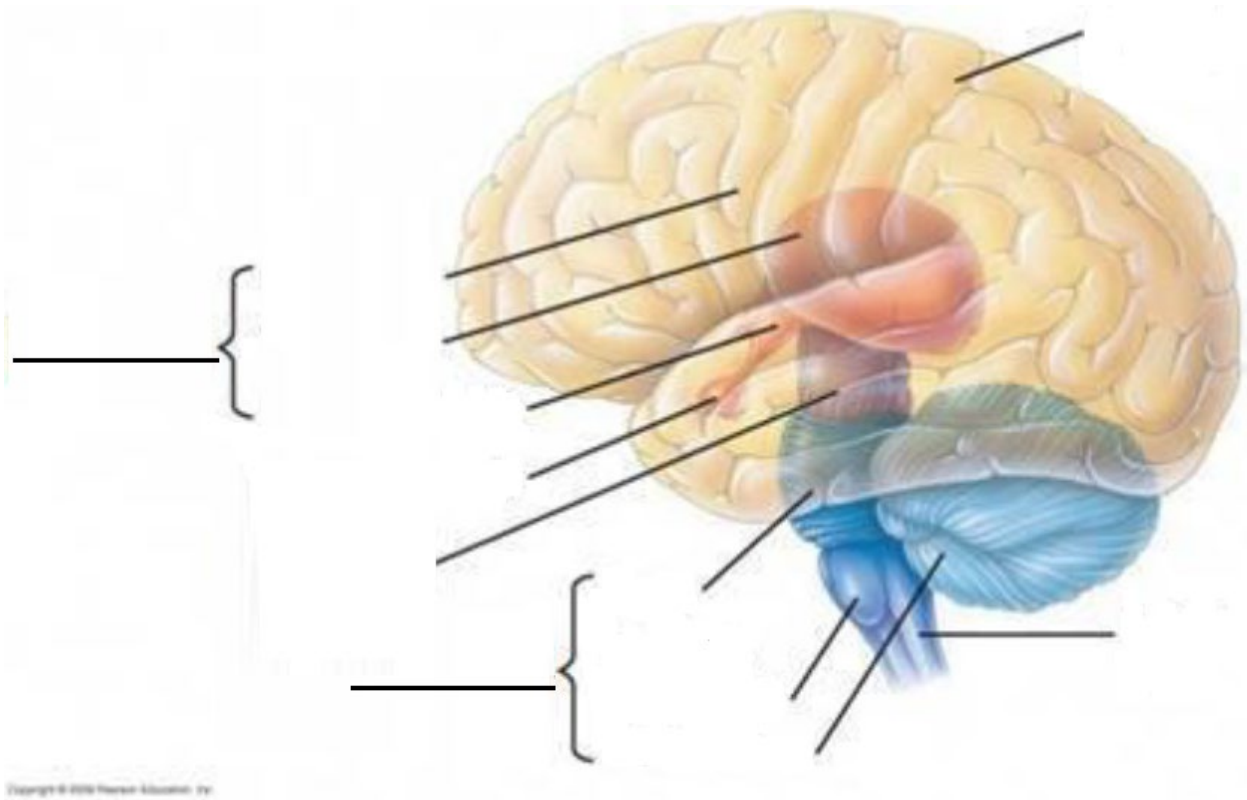
	Graded Potentials	Action Potentials
Where to they occur?		
Type of channels?		
Type of polarization?		
Amplitude constant?		
Distance travelled?		

7. Write the main phases of an action potential. Using arrows, where are the sodium and potassium channels open/closed. Label the positions for the different refractory phases. Draw in where the threshold would be, also include the voltage for RMP and the peak of the action potential.





9. Fill in the following diagram.



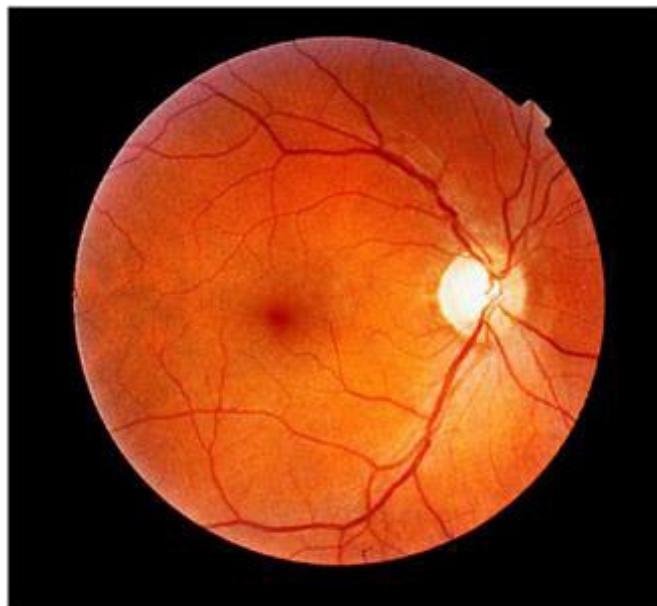
10. Fill in the following table about brain tissue.

	White Matter	Gray Matter
Colour		
Components		
Myelin present		
Function		

**11. Fill in the following table on mechanoreceptors.**

Receptor	Location	Adaption Rate	Receptive Field Size
Merkel's Disks			
Meissner's corpuscles			
Ruffini's endings			
Pacinian corpuscles			

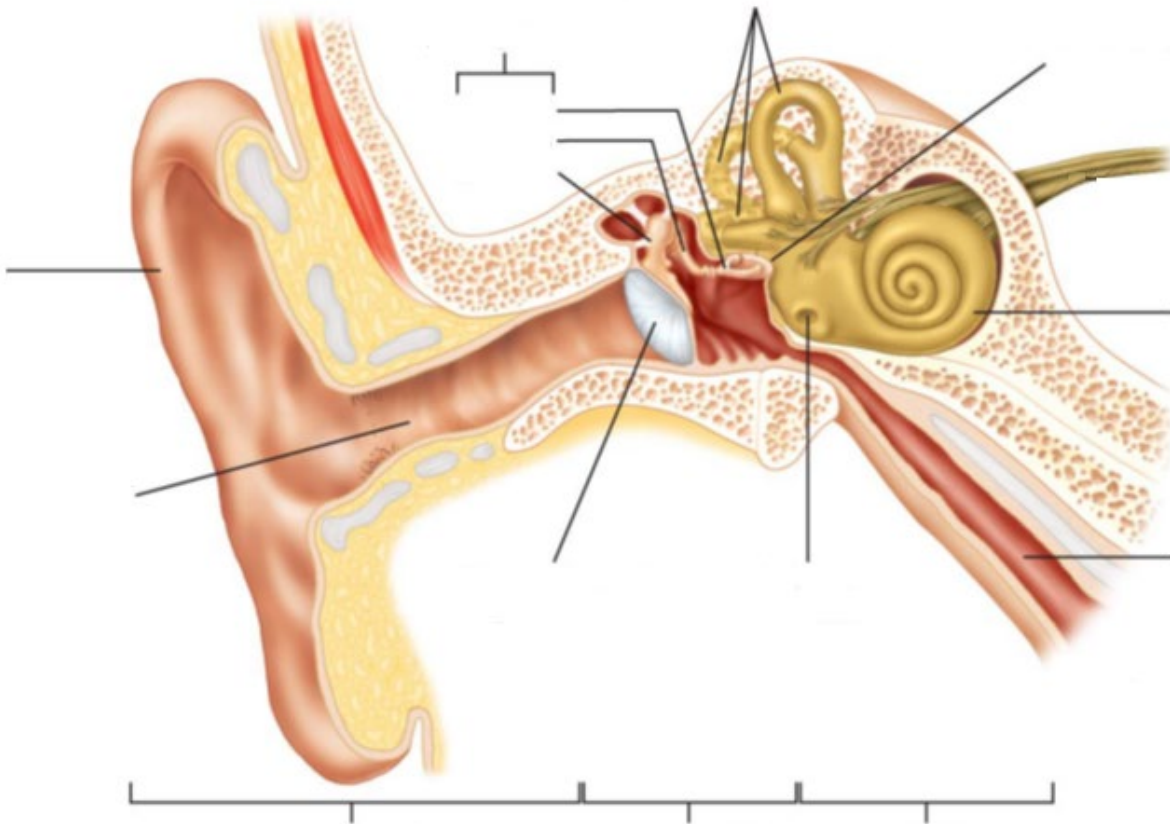
**12. Label the following diagram, indicating the side of the body the eye is on and where the different parts of the retina are (including a dividing line).**



13. Fill in the following table on photoreceptors.

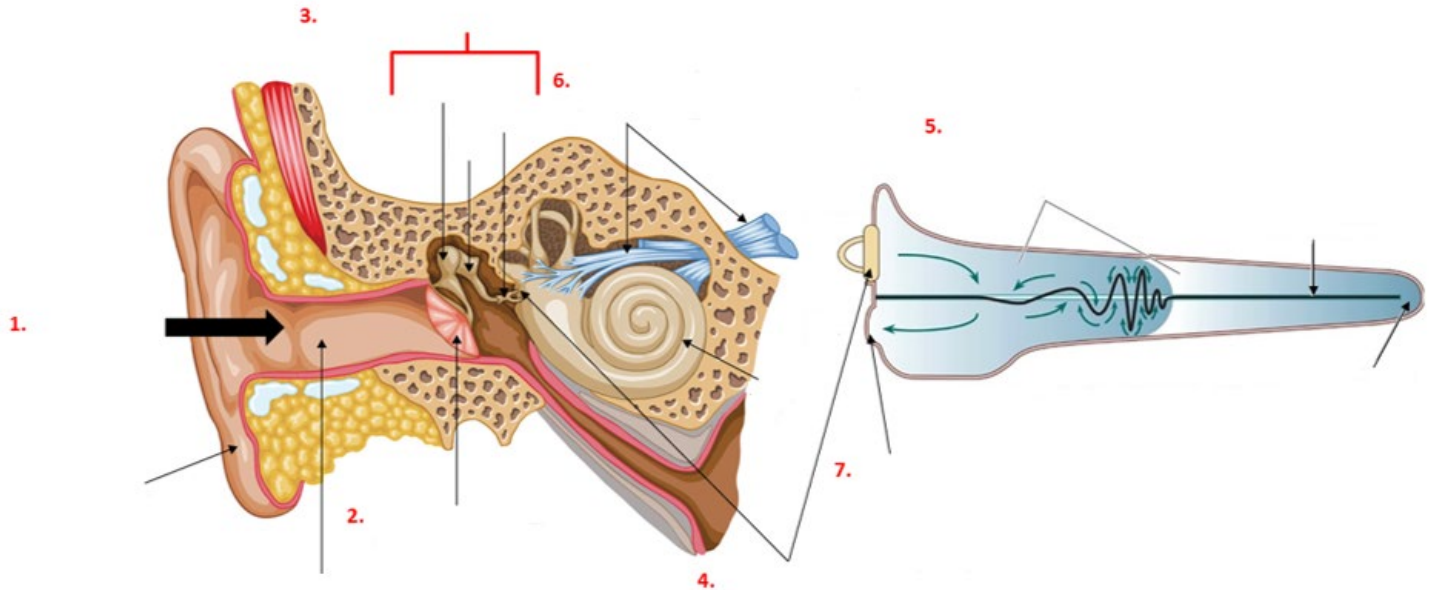
Feature	Rods	Cones
Sensitive to...		
Lighting conditions...		
Located		
Amount		

14. Fill in the following diagram of the ear.





15. Fill in the diagram with the steps of how sound travels through the ear.  
 Do not worry about relabeling the parts, just input the information at each red number.



16. Fill in the following table about hormones

Parameter	Peptide/Protein	Steroid	Amine	
			Hydrophilic	Hydrophobic
Examples				
Precursor				
Solubility				
Blood transport				
Receptor location				
Speed of action				