01) (5 points) Describe the 'stored' energy of a concentration gradient.

The stored energy of a concentration gradient is the kinetic energy of a greater number of molecules interacting with each other on one side of a membrane. These interactions force a greater number of molecules to go down a concentration gradient to a place where there is less molecular interactions and the molecules slow down. By passing across a membrane the membrane can use this stored energy to push things outside of the cell (i.e. potassium).

02) (5 points) Cells swell when an organism dies. Why?

An organism swells when it dies because there is no energy present to pump the sodium out of the cell via the Na⁺ K⁺ ATPase pump. Therefore a majority of sodium flows through the no longer gated channels thus drawing the water after it. This causing swelling of the cells and tissues.