**Homeostasis Guided Notes**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ describes the body’s ability to maintain relatively stable internal conditions even though the outside world is constantly changing. It indicates a *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* state of equilibrium, or a balance where internal conditions change and vary within \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ limits. Every organ system works to maintain equilibrium inside the body.
2. At least three components exist for homeostatic control center:

(1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The receptor is some type of sensor that \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to changes in the environment (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). The receptor responds to the stimulus by sending information to the control center (\_\_\_\_\_\_\_\_\_\_\_\_). Examples of receptors can include: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ receptors in the skin, \_\_\_\_\_\_\_\_\_\_\_\_ in the endocrine system, pain receptors, nerves, etc
2. The control center (\_\_\_\_\_\_\_\_\_\_\_) determines the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or level that a variable must be maintained at. The control center analyzes the information it receives from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and then determines the appropriate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or course of action.
3. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ provides the means for the control center’s response to the stimulus. The results of the response then feedback to influence the stimulus by either depressing it (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *feedback*) so that the entire mechanism is \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ or enhancing it (*\_\_\_\_\_\_\_\_\_\_\_ feedback*) so that the reaction occurs at an even \_\_\_\_\_\_\_\_\_\_\_\_\_ rate.
4. Most homeostatic control mechanisms are \_\_\_\_\_\_\_\_\_\_\_\_\_\_***feedback*** systems!

EX: Your home heating system. If the thermostat is set at 68°F, the heating system will be turned ON when the house temperature drops below that setting. As it produces heat, the air is warmed. When the temperature goes back up to 68°F or slightly higher, the thermostat sends a signal to turn the furnace off.

What is the receptor in this example? The control center? The effector?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Because they tend to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the stimulus and push the levels that a variable must be maintained at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from their set point, positive feedback systems are more \_\_\_\_\_\_\_, occur infrequently, and do not require \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ adjustments.
2. Homeostasis is crucial for good health! In fact, it is so important, that we consider \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to occur as a result of homeostatic imbalance. As we age, our organs become less \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and our internal environments become less \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These events make us more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to disease.