**Reflex**

Watch the following video: <https://www.youtube.com/watch?v=wLrhYzdbbpE> and answer the following questions

1. Why does a reflex action occur?
2. Draw a flowchart showing the pathway of a reflex arc using the following terms: interneuron, efferent neuron (motor neuron), afferent pathway (sensory neuron), sensory neuron (sensory receptor), and the effector
3. Why is the brain not involved?

Watch and read the following simulation: <http://www.sumanasinc.com/webcontent/animations/content/reflexarcs.html> and answer the following questions

1. What is the advantage of a reflex arc?
2. Click on “narrated” and “play”. What structure provides information about the external environment?
3. What is the role of the sensory neuron?
4. What is the role of the interneuron?
5. What is the equivalent of an effector in this scenario?

**Maintaining Homeostasis**

Examine each picture below and answer the following questions:



1. What process is being regulated in the picture above? Cite evidence from the image.
2. Explain how negative feedback is occurring when blood pressure drops below normal?
3. What role does vasodilation play in maintaining homeostasis?
4. If the baroreceptors stopped working, how would that affect this process? Be specific!
5. What body systems are involved in this process? Cite your evidence.



1. What process is being regulated? Cite evidence from the image.
2. Which organ produces angiotensinogen?
3. If a competitive inhibitor of angiotensin II was added, how would this affect the process?
4. If renin failed to be produced, what would be directly impacted?
5. What body systems are involved in this process? Cite your evidence.



1. What process is being regulated? Cite evidence from the image.
2. Under which condition is ADH production increased?
3. If a disease occurs which prevents the production of ADH, what would be the direct effects on the organism?
4. What body systems are involved in this process? Cite your evidence.



1. What process is being regulated? Cite evidence from the image.
2. What organs are involved in sugar regulation in humans?
3. Under which condition is glucagon produced?
4. What is the role of insulin?
5. What body systems are involved in this process? Cite your evidence.



1. What process is being regulated? Cite evidence from the image.
2. Under which condition is insulin produced?
3. Explain the role of glucagon.
4. The pancreas has 2 types of cell- alpha and beta cells. How do their roles differ?
5. Why is one organ capable of producing cells with different functions?
6. What body systems are involved in this process? Cite your evidence.



1. What process is being regulated? Cite evidence from the image.
2. What process increases carbon dioxide concentration?
3. How does the heart respond to increased carbon dioxide concentration?
4. What organs are involved in this process?
5. What body systems are involved in this process? Cite your evidence.