**Pre-AP Animals Test Review**

*Refer to the following questions and vocabulary to help you to review for the test.*

* Required vocabulary: gland, hormone, dilate, vasodilation, vasoconstriction, innate/acquired/adaptive immunity, fever, nonspecific defenses, HIV virus, FLU virus, inflammation, antigen, antibody, memory cells, b cells, homeostasis, ADH, hypothalamus, negative/ feedback inhibition, effectors, receptors, pancreas, liver, glucagon, insulin, macrophages, lymphocytes, histamine, and auto-immune diseases.
* Why is cell specialization important in multicellular organisms?
* What is homeostasis?
  + Provide an example of homeostasis.
* What is a feedback mechanism?
  + How does it operate to maintain homeostasis?
  + Explain the difference between negative and positive feedback.
* What are 2 differences between endotherms and ectotherms?
  + Give an example of an endotherm and an example of an ecotherm.
  + Which (endotherms or ectotherms) is better adapted to living in cold environments?
    - Explain why.
  + Which (endotherms or ectotherms) is better adapted to living in environments with extreme changes in temperature?
    - Explain why.
* A select number of human populations, such as the Tibetans and certain Andean and Ethiopian highlanders, have acquired a unique ability to survive at extremely high altitudes. At high altitudes the air is much thinner than at sea level. As a result, a person inhales fewer oxygen molecules with each breath.
  + What are 2 possible adaptations for living at higher altitudes and the resulting low oxygen levels?
  + What organ systems are involved in each?
* Complete the table below:

|  |  |  |
| --- | --- | --- |
| **Organ System** | **Organs involved** | **Function(s) of the organ system** |
| Circulatory |  |  |
| Digestive |  |  |
| Endocrine |  |  |
| Excretory |  |  |
| Immune |  |  |
| Integumentary |  |  |
| Muscular |  |  |
| Nervous |  |  |
| Reproductive |  |  |
| Respiratory |  |  |
| Skeletal |  |  |

* What is a gland?
  + To which organ system are glands involved?
  + What is a hormone?
    - Give an example
* Homeostasis is maintained by the interaction of which 3 organ systems in maintaining ideal body temperature?
  + What is vasodilation?
  + What is vasoconstriction?
  + How does the body compensate for low body temperature?
  + How does the body compensate for high body temperature?
  + What is the role of the hypothalamus in maintaining homeostasis?
* Homeostasis is maintained by the interaction of which 3 organ systems in maintaining blood sugar levels?
  + How does the body compensate for low blood sugar?
  + How does the body compensate for high blood sugar?
  + What is the effect of glucagon on blood sugar levels?
  + What is the effect of insulin on blood sugar levels?
  + What is the role of the liver in maintaining homeostasis?
  + What is the role of the pancreas in maintaining homeostasis?
* Homeostasis is maintained by the interaction of which organ systems in maintaining water balance?
  + How does the body compensate for low water concentration in the body?
  + How does the body compensate for high water concentration in the body?
  + What is the effect of the hormone, ADH?
* What does “fight or flight” response refer to?
  + Differentiate between the sympathetic and parasympathetic nervous systems.
  + Which system (sympathetic or parasympathetic) is responsible for the “fight or flight” response?
  + What are some physiological effects of the sympathetic system?
    - Which organs/systems are involved and how do these body systems interact in this response?
  + What are some physiological effects of the parasympathetic system?
    - Which organs/systems are involved and how do these body systems interact in this response?
* What is a reflex arc?
  + What is the function of a reflex arc?
  + What are the 5 parts that make up a reflex arc?
    - What is the function of each part?
  + What is the role of effectors and receptors in the reflex arc?
* What is an autoimmune disease?
  + Give an example of an autoimmune disease.
  + What organ system is affected?
  + What are 2 of the symptoms?
    - What causes the symptoms of these diseases?
* Explain the difference between a specific and a non-specific immune defense.
  + Give an example of a specific immune defense.
  + Give an example of a non-specific immune defense.
  + What is the role of histamines in the immune defense?
    - Inflammation is an example of specific or non-specific immune defense?
    - Memory cells are an example of specific or non-specific immune defense?
    - B cells are an example of specific or non-specific immune defense?
    - Fever is an example of specific or non-specific immune defense?
    - Macrophages are an example of specific or non-specific immune defense?
    - Lymphocytes are an example of specific or non-specific immune defense?
* Explain the difference between an innate and adaptive/ acquired immunity.
  + Give an example of each