**AC Human Body Systems Interactions Study Guide**

For each comparison, determine the matching level of organization in the human body – cell, tissue, organ, organ system, and organism.

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| **Analogy – U.S. Monetary System** | **Human Body Level of Organization** |
| 1. Penny | Cell |
| 1. Nickel | Tissue |
| 1. Dime | Organ |
| 1. Quarter | Organ System |
| 1. Dollar | Organism |

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| **Analogy – Trees** | **Human Body Level of Organization** |
|  | Cell |
|  | Tissue |
|  | Organ |
|  | Organ System |
|  | Organism |

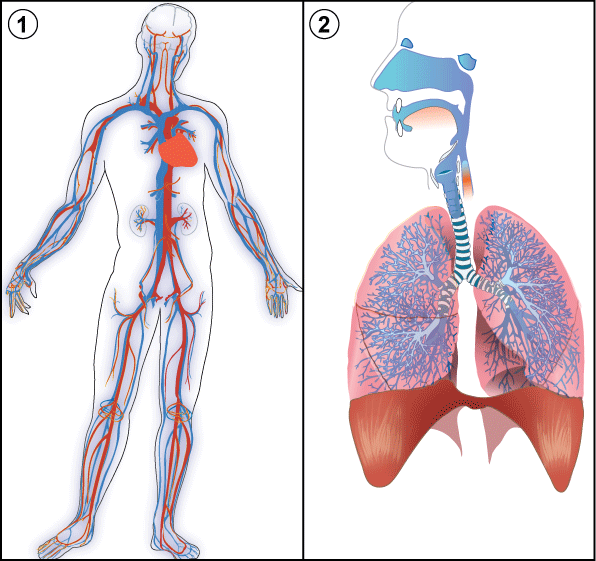
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| **Analogy – Local Government** | **Human Body Level of Organization** |
|  | Cell |
|  | Tissue |
|  | Organ |
|  | Organ System |
|  | Organism |

***Human Body System Matching***

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| 1. \_\_\_\_\_Nervous System | 1. The major organs of this system are the lungs. This system allows the body to breathe. |
| 1. \_\_\_\_\_Integumentary System | 1. The major organs of this systems are glands that produce chemicals to help control body functions such as growth and development. |
| 1. \_\_\_\_\_Digestive System | 1. White blood cells in this system fight pathogens (germs). |
| 1. \_\_\_\_\_Skeletal System | 1. The major organs of this system include the tonsils, the spleen, and other lymph nodes that help remove dead pathogens (germs) and other wastes from the body by contracting of skeletal muscles. |
| 1. \_\_\_\_\_Excretory System | 1. The major organ of this system is the skin. This system covers and protects the body. |
| 1. \_\_\_\_\_Lymphatic System | 1. The 3 types of tissue in this system include smooth, striated, and cardiac. This system provide shape, support, and movement for the body. |
| 1. \_\_\_\_\_Respiratory System | 1. The major organs of this system include the brain and spinal cord. This system controls the body. |
| 1. \_\_\_\_\_Endocrine System | 1. The major organs of this system include the kidneys and the bladder. The kidneys filter the blood and produce urine that is stored in the bladder until the body is ready to release the waste. |
| 1. \_\_\_\_\_Muscular System | 1. The major organs of this system are the heart and the blood vessels. This system provides transportation for nutrients, oxygen, and other substances throughout the body. |
| 1. \_\_\_\_\_Cardiovascular System | 1. The human body has 206 bones that help protect the internal organs and a variety of joints that allow movement. This system also produces red blood cells in the marrow of the bones. |
| 1. \_\_\_\_\_Urinary System | 1. This system has many organs including the stomach and the intestines. This system is responsible for breaking down food for the body. |
| 1. \_\_\_\_\_Immune System | 1. This system consists of 4 other systems that help the body removes wastes. These systems include the integumentary (sweating), respiratory (exhaling carbon dioxide), urinary (releasing urine), and digestive systems (releasing feces). |

***Systems Interactions***

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| **Action** | **Which body systems are in use**  **during this action?** | **How do you know these systems**  **are part of this action?** |
| Brushing your teeth | Skeletal  Muscular  Nervous  Respiration  Cardiovascular | respiration and cardiovascular give you energy to move your muscles; the muscles are moving the bones to lift and maneuver the toothbrush to clean the teeth which are also bones; the nervous system is directing the action using information from the senses (eyes, touch, taste) |
| Scoring a touchdown |  |  |
| Typing a paper on your laptop |  |  |
| Eating breakfast |  |  |
| Playing the flute |  |  |



1. What 2 systems are pictured in the diagram and

how do they work together?

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1. Define homeostasis

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1. When you are running the bases at a baseball game, you are sweating, and you feel thirsty. What body systems are interacting in this case?

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1. How does the body react when the outside temperature gets too hot?

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1. How might disruption of the respiratory system affect homeostasis of the body?

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1. When you burn yourself after touching something hot, you pull your hand away quickly. How do your skeletal, muscular, circulatory, endocrine, and nervous systems interact to make you react and to start healing your burn?

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