Chapter 43 – Immune System

Terms to know:

- Barrier defenses
- Lysozyme
- Neutrophils
- Eosinophils
- Macrophage
- Dendritic cells
- Interferon
- Complement system
- Inflammatory response
- Histamines
- B cells
- T cells
- Antigens
- Antibodies
- Clonal selection
- Memory cells
- Antigen-presenting cells
- MHC molecules
- Primary immune response
- Secondary immune response
- Humoral immune response
- Cell-mediated immune response
- Helper T cells
- Cytotoxic T cells
- Plasma cells
- Vaccine
- Allergies
- HIV

1. Describe the various elements of an innate immune response.

2. How are antigens recognized by immune system cells?

3. Compare B and T cells. (Where are they made? Matured? How are they activated? What are their actions?)

4. Describe differences in humoral and cell-mediated immunity.

5. Why are Helper T cells central to immune responses?

6. What is the role of antibodies in the immune system?

7. How do vaccines work?

8. Compare a primary immune response to a secondary immune response.

9. Explain the biological mechanisms that lead to the rejection of transplanted organs.

Chapter 48 & 49 – Neurons & the Nervous System

Terms to know:

- Neuron
- Cell body
- Dendrite
- Axon
- Myelin sheath
- Schwann cells
- Glia
- Synapse
- Neurotransmitter
- Synaptic terminal
- CNS
- PNS
- Sensory receptor
- Sensory neuron
- Interneuron
- Motor neuron
- Nerve
- Membrane potential
- Resting potential
- Nerve impulse
- Action potential
- Threshold
- Depolarization
- Refractory period
- Saltatory conduction
- Acetylcholine
- Epinephrine
- Norepinephrine
- Dopamine
- Serotonin
- GABA
- Reflex arc
- Cerebrum (forebrain)
- Brainstem (midbrain)
- Cerebellum (hindbrain)

1. Compare the central nervous system (CNS) to the peripheral nervous system (PNS).

2. Draw and label a neuron. What is the function of dendrites, cell body, axon, synapse, and myelin sheath?

3. Define membrane potential and resting potential.

4. What is the main cation inside the cell? Outside the cell?

5. How is a nerve impulse transmitted in a neuron?

6. Describe the mechanism of saltatory conduction.

7. Describe the process that leads to release of neurotransmitters, and what happens at the synapse.

8. Describe the action of acetylcholine.

9. Explain how the nervous system functions to respond to an external stimulus.

10. Describe the structure and function of the following parts of the brain:
    a) Cerebrum
    b) Cerebellum
    c) Brainstem
    d) Medulla oblongata
    e) Corpus callosum

Label the brain