

Unit 5 – Homeostasis

Chapter 7 - Maintaining an Internal Balance

1. Describe what is meant by the terms homeostasis, dynamic equilibrium, negative & positive feedback.
2. Describe the 3 basic component of any control system. Describe the way body temperature is regulated.
3. Describe the importance of excreting wastes in terms of homeostasis.
4. Describe the function of each part of the kidney. Why are nephrons considered the kidney's functional unit?
5. Describe in detail how the nephron performs filtration, reabsorption and secretion in the formation of urine.
6. Compare and contrast the relative concentration of specific solutes in blood and urine.
7. Describe in detail how the nervous and endocrine systems maintain blood osmotic pressure and blood pressure.
8. Describe the reactions involved in maintaining pH balance of the blood.
9. Describe the following disorders of the kidney and their treatments: Diabetes, Bright's disease & kidney stones.
10. Compare and contrast hemodialysis and peritoneal dialysis

Chapter 8 - Chemical Signals Maintain Homeostasis

1. Identify the body's glands and the hormones that each produce. What is a target organ?
2. Compare and contrast the action of steroid and protein hormones.
3. Explain why the pituitary is referred to as the master gland. Describe its structure and the hormones it produces.
4. Describe in detail the way in which the endocrine system regulates blood sugar levels.
5. Describe the action of the following: epinephrine, norepinephrine, cortisol, TSH, thyroxin, PTH and GH.
6. Describe the mechanism by which anabolic steroids work.
7. What are the side effects of anabolic steroid use and why are they particularly dangerous for youths?

Chapter 9 - How Nerve Signals Maintain Homeostasis

1. Differentiate between teach nervous system: a) central and peripheral b) somatic and autonomic
2. Describe the structure of a neuron. Differentiate between sensory neurons, interneurons and motor neurons.
3. Discuss the importance of the sodium-potassium pump to maintaining resting membrane potential.
4. Describe how an action potential (nerve impulse) travels down a myelinated and unmyelinated neuron.
5. Outline the steps involve in the “knee-jerk reflex”. Include all structures and nerves involved.
6. Describe in detail, the mechanism by which a nerve impulse is send **between** neurons.
7. Nerve impulses are all-or-none events, what does this mean?
8. State the function of the following brain structures: cerebellum, medulla, corpus callosum, cerebrum, pons.
9. Locate and state the function of each of the following cerebral lobes: frontal, temporal, parietal, occipital.
10. Describe the method by which scientist have uncovered the function of different parts of the brain.