MyReadinessTest

Prep for A&P – Modules, Topics and Learning Outcomes

Module 1: Basic Skills

Personal Skills
- Determine your preferred learning styles.
- Identify study strategies to complement your preferred learning styles.
- Recognize your own accountability.
- Draft a written schedule that includes adequate study time.

Study Skills
- Identify effective note-taking skills.
- Demonstrate ability to outline material from a lecture.
- Identify effective test-taking strategies.
- Identify key points in scientific readings.

Thinking Skills
- Critically analyze reading material and data to draw valid conclusions.
- Differentiate between cause and effect relationships and independent events.

Module 2: Basic Math

Units and Conversions
- Identify appropriate metric units for measurement.
- Convert from one unit of measure to another.
- Convert decimal values to percents.
- Demonstrate the ability to work with decimals.

Calculations
- Calculate percentages.
- Calculate the mathematical mean and relate it to the concept of physiological normal.

Interpret Data
- Interpret numerical values expressed in scientific notation.
- Correctly interpret tables.
- Correctly interpret graphs.
- Correctly interpret charts.

Module 3: Biology

Principles
- Describe the Biological Hierarchy of Organization.
- Relate the Law of Conservation to normal body functions.
- Relate the concept of Form Fits Function to anatomy and physiology.

Regulation
- Describe homeostasis.
- Describe how negative feedback affects homeostasis.
- Differentiate between negative and positive feedback.

Module 4: Chemistry

Basic Chemistry
- Describe basic atomic structure.
- Differentiate between ionic, covalent, and hydrogen bonding.
- Differentiate between polar and nonpolar molecules.

Organic Chemistry
- Describe carbohydrates.
- Describe protein structure.
- Describe the chemical nature of lipids.
- Describe nucleic acids.
- Differentiate between the structures of DNA and RNA.

- Explain the functional relationship between DNA and RNA.

Chemical Reactions

- Interpret chemical reactions to identify reactants and products.
- Predict the impact of defective or deficient enzymes on metabolic pathways.
- Differentiate between anabolic and catabolic reactions.
- Describe the physiological significance of reversible reactions.

Energy

- Differentiate between potential energy, kinetic energy, and heat.
- Explain the importance of ATP to the work done in the human body.
- Relate the chemical energy in the foods we eat to ATP formation.

Electrolytes and pH

- Provide examples of electrolytes.
- Differentiate between solvent, solute, and solution.
- Relate hydrogen ion concentration to the pH value of a solution.
- Predict the impact of the presence or absence of buffers on pH.

Module 5: Cell

Cell Theory

- Explain the main principles of the Cell Theory.

Cell Basics

- Describe the structure of the cell membrane.
- Describe the functions of the cell membrane.
- Describe the functions of the cell organelles.
- Describe the role of the nucleus.
- Explain the process of protein synthesis.

Movement Processes

- Differentiate between simple diffusion and facilitated diffusion.
- Define "osmosis."
- Differentiate between active and passive transport.
- Differentiate between endocytosis and exocytosis.
- Differentiate between pinocytosis and phagocytosis.

Tonicity

- Differentiate between hypotonic and hypertonic solutions.
- Predict how hypotonic and hypertonic solutions would impact cell size.

Cell Cycle

- Describe the cell cycle.
- Explain the process of DNA replication.
- Describe the stages of mitosis.
- Differentiate between mitosis and cytokinesis.
- Differentiate between mitosis and meiosis.

Module 6: Genetics

Basic Genetics

- Define "gene."
- Differentiate between genotype and phenotype.
- Define heterozygous and homozygous.
- Define mutation.

Inheritance

- Differentiate between dominant, codominant, and recessive alleles.
- Predict the outcome of monohybrid and dihybrid crosses.