

## ANATOMY AND PHYSIOLOGY

This examination is a survey of the structure and function of the human body. Topics include: cells and tissues; integumentary, skeletal, muscular, nervous, circulatory, respiratory, digestive, urogenital, and endocrine systems. (6 s.h.)

BIO-211/212-TE

This is a three-hour examination in which you must answer 200 multiple choice questions (worth 1 point each). A passing score is **120** out of 200 points.

**Here are the areas covered and their approximate importance on the test:**

- I. THE CELL AND TISSUES (10%)
  - A. Biomolecules
  - B. Cell physiology
  - C. Tissue types and functions
- II. INTEGUMENTARY SYSTEM (5%)
  - A. Structure and function
  - B. Physiology
- III. SKELETAL SYSTEM (10%)
  - A. Ossification
  - B. Structure and function
  - C. Names and locations of all bones of the body
  - D. The body
  - E. Joints
- IV. MUSCULAR SYSTEM (10%)
  - A. Structure (microscopic and macroscopic)
  - B. Physiological properties of muscle contraction
  - C. Muscles of the skeleton (names, origin, insertion and action)
  - D. Neuromuscular junction
- V. NERVOUS SYSTEM (10%)
  - A. Structure
  - B. Physiology of nerve impulse
  - C. Central nervous system (structure and function)
  - D. Peripheral nervous system
  - E. Autonomic nervous system
- VI. SENSE ORGANS (STRUCTURE AND FUNCTION) (5%)
  - A. Eye
  - B. Ear
  - C. Taste buds
  - D. Olfactory
  - E. Cutaneous

VII. CIRCULATORY AND LYMPHATIC SYSTEMS (10%)

- A. Blood and lymph (composition, function and properties)
- B. Heart (structure and function)
- C. Blood vessels and lymphatics (names, structure and function)
- D. Fetal circulation
- E. Hemodynamics of circulation
- F. Immunity

VIII. DIGESTIVE SYSTEM (10%)

- A. Structure – gross and microscopic structures of entire alimentary canal and accessory organs
- B. Function – enzymes, hormones, metabolism and the absorption and utilization of food

IX. RESPIRATORY SYSTEM (5%)

- A. Structure
- B. Function – mechanics and regulation of breathing; carbon dioxide and oxygen transport
- C. Cellular respiration

X. UROGENITAL SYSTEM (15%)

- A. Kidney and bladder
- B. Male reproductive organs
- C. Female reproductive organs
- D. Pregnancy and embryo development

XI. ENDOCRINE AND EXOCRINE SYSTEM (10%)

- A. Hormone secreted by each gland and its function
- B. Fluid and electrolyte balance
- C. Regulation of blood glucose levels

**Textbooks to help you prepare:**

Marieb, Elaine. *Human Anatomy and Physiology*. Current edition. Reading, MA: Addison-Wesley

Seeley, Rod, et al. *Anatomy and Physiology*. Current edition. New York: McGraw-Hill

Shier, David, et al. *Hole's Human Anatomy and Physiology*. Current edition. Boston: McGraw-Hill

## SAMPLE QUESTIONS

1. The membrane lining the abdominal cavity is the
  - a. pleura
  - b. peritoneum
  - c. meninges
  - d. pericardium
2. Hyaline cartilage is found in the
  - a. ear lobe
  - b. epiglottis
  - c. tracheal rings
  - d. intervertebral disk
3. Which layer of the epidermis gives rise to new cells by mitosis?
  - a. Stratum corneum
  - b. Stratum lucidum
  - c. Stratum granulosum
  - d. Stratum germinativum
4. The number of thoracic vertebrae is
  - a. 10
  - b. 11
  - c. 12
  - d. 13
5. The contractile unit of a skeletal muscle is called a(n)
  - a. sarcomere
  - b. actin filament
  - c. sarcolemma
  - d. myoneural junction
6. Which division of the nervous system is concerned with "fight or flight"?
  - a. Central
  - b. Parasympathetic
  - c. Peripheral
  - d. Sympathetic
7. The Organ of Corti is found in the
  - a. outer ear
  - b. inner ear
  - c. Eustachian tube
  - d. middle ear