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History of Anatomy

I. Definition of the Science

☞ *Concept:* The science of human anatomy is concerned with the structural organization of the human body. The descriptive anatomical terminology is principally of Greek and Latin derivation.

A. Multiple Choice Questions

- ___ 1. Anatomy is derived from the Greek word meaning
(a) “to cut up.” (c) “functioning part.”
(b) “analysis.” (d) “observe death.”
- ___ 2. Physiology is the study of body
(a) structure. (c) function.
(b) organization. (d) chemistry.
- ___ 3. Anatomy is a subdivision of the science of
(a) biology. (c) genetics.
(b) human behavior. (d) human ecology.
- ___ 4. The majority of anatomical terms are derived from
(a) Latin and German. (c) Greek and Latin.
(b) German and French. (d) French and Latin.

B. True–False Questions

- ___ 1. The Greek term *anatomize* means “dissect.”
- ___ 2. Each body structure is adapted to perform a function, or perhaps several functions.
- ___ 3. Human cadavers are a vital aspect of the study of human anatomy.
- ___ 4. The history of human anatomy as a scientific discipline parallels that of medicine.

II. Prescientific Period

☞ *Concept:* Evidence indicates that a knowledge of anatomy was of survival value in prehistoric times and that it provided the foundation for medicine.

A. Multiple Choice Questions

- ___ 1. The ancient surgical procedure of drilling a hole in the skull or removing a portion of the cranial bone is known as
(a) craniectomy. (c) paleomorphotomy.
(b) trepanation. (d) lobectomy.
- ___ 2. Paleopathology of prehistoric humans is concerned with studying
(a) disease and causes of death. (c) growth rates and body structure.
(b) relative life spans. (d) sexual dimorphism.

B. True–False Questions

- ___ 1. Prehistoric people gained a practical knowledge of anatomy because it helped them to survive.
- ___ 2. Trepanation was an esoteric surgical technique used only by an isolated population of prehistoric people.

III. Scientific Period

☞ *Concept:* Human anatomy is a dynamic and growing science with a long, exciting heritage. It continues to provide the foundation for medical, biochemical, developmental, cytogenetic, and biomechanical research.

A. Multiple Choice Questions

- ___ 1. Widespread acceptance of human anatomy as a science first occurred in ancient
- (a) Rome. (c) China.
(b) Egypt. (d) Greece.
- ___ 2. The establishment of sound principles of medical practice earned this man the title “father of medicine.”
- (a) Hippocrates (c) Erasistratus
(b) Aristotle (d) Galen
- ___ 3. Which of the four body humors was believed by Hippocrates to be associated with the lungs?
- (a) black bile (c) phlegm
(b) yellow bile (d) blood
- ___ 4. The organ believed by Aristotle to be the “seat of intelligence” was
- (a) the liver. (c) the brain.
(b) the heart. (d) the intestine.
- ___ 5. Who described the development of the heart in a chick embryo in the first known account of embryology?
- (a) Harvey (c) Malpighi
(b) Vesalius (d) Aristotle
- ___ 6. What event that took place about 1450 helped to usher in the Renaissance?
- (a) the development of the microscope
(b) the acceptance of the scientific method
(c) the development of the cell theory
(d) the development of movable type
- ___ 7. The masterpiece of anatomical description *De Humani Corporis Fabrica* was written and illustrated by
- (a) Leonardo da Vinci. (c) Vesalius.
(b) Harvey. (d) Leeuwenhoek.
- ___ 8. Which of the following men would *not* have believed in the humoral theory of body organization?
- (a) Schwann (c) Hippocrates
(b) Galen (d) Aristotle
- ___ 9. The most important contribution by William Harvey was his research on
- (a) the continuous circulation of blood.
(b) the microscopic structure of spermatozoa.
(c) the detailed structure of the kidney.
(d) the striped appearance of skeletal muscle.

B. True–False Questions

- ___ 1. Claudius Galen is regarded as the father of medicine because of the sound principles of medical practice that he established.
- ___ 2. Galen had a tremendous impact on human anatomy in that his writings were influential for nearly 1,500 years.
- ___ 3. The period of the Renaissance lasted from the sixteenth through the eighteenth century.
- ___ 4. The most important contribution to human anatomy in the eighteenth century was the discovery and improvement of the microscope.

C. Matching Questions

Match the person with the significant contribution.

- ___ 1. Galen (g) establishment of human anatomy as a comparative science
- ___ 2. Harvey (b) father of medicine
- ___ 3. Erasistratus (c) influential medical writer of the second century
- ___ 4. Leeuwenhoek (d) father of anatomy
- ___ 5. Müller (e) father of physiology
- ___ 6. Vesalius (f) demonstration of blood flow
- ___ 7. Hippocrates (a) development of the microscope

IV. Chapter Review

A. Multiple Choice Questions

- ___ 1. X rays were discovered during the late nineteenth century by
(a) Roentgen. (c) Schleiden.
(b) Hooke. (d) Müller.
- ___ 2. Which of the following was *not* of major significance in the development of human anatomy as a science?
(a) vivisections (c) invention of the microscope
(b) human dissections (d) movable type
- ___ 3. The first Greek reference to human anatomy appears in
(a) Homer's *Odyssey*. (c) *Appolonius of Argo*.
(b) Homer's *Iliad*. (d) *The Trojan Women*.
- ___ 4. The dissection of human cadavers was prohibited in
(a) the Alexandrian era. (c) the Middle Ages.
(b) the Grecian period. (d) the early twentieth century.
- ___ 5. Plato, Aristotle's mentor, believed that the brain was the seat of feeling and thought, but Aristotle disagreed. Aristotle believed that _____ was the seat of intelligence.
(a) the liver (c) the kidney
(b) the heart (d) none of the above

- _____ 6. Aristotle believed that the function of the brain was to
- (a) keep the four body humors in check.
 - (b) cool the blood.
 - (c) remove waste products from the blood.
 - (d) break down and store lipid molecules.

B. True–False Questions

- _____ 1. Angiography involves the use of radiographs following the injection of a radiopaque substance into the lymph nodes.
- _____ 2. Radiology is based on the principle that substances of different densities absorb different amounts of X rays.
- _____ 3. Cytology is the study of tissues.
- _____ 4. Malpighi was the first to actually see capillaries.
- _____ 5. Human dissections were not performed in Alexandria because Aristotle thought it was inhumane.
- _____ 6. Vesalius and Leonardo da Vinci produced monumental studies of the human form but were not involved in human dissections.

C. Completion Questions

1. The science of _____ concerns understanding body structure, whereas the science of _____ concerns understanding body functions.
2. The Galenic philosophy of blood circulation prevailed for over 1,400 years, until _____ published his work *On the Motion of the Heart and Blood in Animals*.
3. Chinese medicine uses the practice of _____, which is believed by some to maintain a balance between the life forces of yin and yang.
4. The act of dissecting live human beings as a form of study is called _____.
5. Schleiden and _____ are credited with the biological principle known as the cell theory.
6. _____ is the science concerned with studying diseases and the causes of death in preserved forms, such as mummies from Egypt.
7. For many years, the predominant medical theory was that a balance of the four _____ was essential in maintaining body health.
8. For nearly 1,500 years, the writings of _____ were regarded as the authoritative reference on human anatomy and medical treatment.
9. _____ was the author of the masterpiece on anatomy *De Humani Corporis Fabrica*.

10. Significant improvements in the microscope were accomplished in the seventeenth century by the Dutch lens grinder _____.
11. The term *cell* was coined in 1665 by the English physician _____.
12. The study of the structures of a cadaver that can be observed with the unaided eye is referred to as _____ anatomy.