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History of Anatomy

Answers and Explanations

I. Definition of the Science

A. Multiple Choice Questions

1. (a) – The act of “cutting up” or dissecting, is expressed through the derivation of the word *anatomy*.
2. (c) – Physiology concerns the study of body function, whereas anatomy concerns the study of body structure.
3. (a) – Biology is the study of living organisms, including the human body.
4. (c) – It was in Greece that human anatomy first found widespread acceptance as a science.

B. True–False Questions

1. True – The word *anatomize* was used more frequently than the word *dissect*, even though they are identical in meaning.
2. True – A basic principle of biology is that structure determines function.
3. True – With human cadavers, anatomists gained more anatomical accuracy than nonhuman specimens could provide.
4. True – The knowledge that was gained through anatomical studies provided a basis for medical explanations and treatments.

II. Prescientific Period

A. Multiple Choice Questions

1. (b) – The Greek derivation of this word is *trypanon*, a borer.
2. (a) – Pathology is the study of diseases.

B. True–False Questions

1. True – Knowledge of the anatomical position of the vital organs of animals, for example, enabled prehistoric people to be more effective hunters.
2. False – Evidence of trepanation is abundant in both the Old World and the New World.

III. Scientific Period

A. Multiple Choice Questions

1. (d) – The Greek philosophers had a tremendous impact on the establishment of human anatomy as a science.
2. (a) – Hippocrates’ beliefs concerning ethical medical conduct are expressed in what is known as the *Hippocratic Oath*.
3. (c) – Phlegm, thought to be removed from the lungs, was considered one of the “balancing fluids,” or body humors.
4. (b) – Aristotle believed that the heart was the governing center of the body and that the cerebrospinal fluid of the brain cooled the warm blood from the heart.
5. (d) – Aristotle was one of the great giants in the biological sciences. He is regarded as the father of embryology, and even as the father of zoology.
6. (d) – The development of movable type made mass production of books possible.
7. (c) – This publication by Vesalius clearly and accurately described structures of the body that up until then had been incorrectly represented.
8. (a) – The humoral theory was widely accepted even through the Renaissance.
9. (a) – Using the scientific method, William Harvey demonstrated the continuous circulation of blood through the vessels of the body.

B. True–False Questions

1. False – Hippocrates is regarded as the father of medicine.
2. True – Galen’s teachings were accepted by nearly everyone as fact; few people challenged his writings.
3. False – The Renaissance lasted from the mid-fourteenth century through the sixteenth century.
4. True – Use of the microscope provided a new scientific dimension that greatly increased our knowledge of body structure.

C. Matching Questions

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| 1. (c) | 5. (g) |
| 2. (f) | 6. (d) |
| 3. (e) | 7. (b) |
| 4. (a) | |

IV. Chapter Review

A. Multiple Choice Questions

1. (a) – Roentgen received a Noble Prize for his discovery of X rays.
2. (a) – Vivisections, which demonstrated the functions of certain body structures, were of limited value in the development of anatomy.
3. (b) – The *Iliad* includes descriptive accounts of battle wounds, suggesting that human anatomy was studied to some extent in ancient Greece.
4. (c) – In the Middle Ages, dissections were considered a morbid and desecrating practice; hence, hardly any progress in the study of anatomy was made during this time.
5. (b) – The “emotional role” of the heart, from which poets and lovers draw inspiration, reflects the Aristotelian belief that the heart was “the seat of emotion.”
6. (b) – It made sense to Aristotle that the cerebrospinal fluid bathing the brain would act as a coolant of the blood.

B. True–False Questions

1. False – A radiopaque substance is injected into the blood vessels.
2. True – It is the differential absorption that provides a radiographic image.
3. False – Cytology is the study of cells.
4. True – The discovery of capillaries was made possible through the development of the microscope.
5. False – Human dissections were performed in Alexandria, but not by Aristotle who was a Greek philosopher.
6. False – Both were well trained from cadaver specimens.

C. Completion Questions

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| 1. anatomy/physiology | 7. humors |
| 2. Harvey | 8. Galen |
| 3. acupuncture | 9. Vesalius |
| 4. vivisection | 10. Leeuwenhoek |
| 5. Schwann | 11. Hooke |
| 6. Paleopathology | 12. gross |