

Human Anatomy — Biology 351

Exam #1

Please place your name and I.D. number on the back of the last page of this exam.

You must answer *all* questions on this exam. Because statistics demonstrate that, on average, between 1-2 objective questions on every 50-point exam are ambiguous enough to come out "aberrant" on an item analysis, the total number of points possible on this exam is 53. However, grades will be calculated out of a possible 50 points, assuming that 1–2 questions on this 50-point exam are aberrant.

Section 1 – Position Analysis: Read the following paragraph, and then answer questions placing the most appropriate letter in the spaces provided. (2 points each)

It is late on a Friday night, and Edgar Onn, a first-year pre-med student is walking back to the Westerlin complex after a late night of studying. As he turns a corner in the slough path he encounters Sasha Painindeass, a third-year premed and psychology student that is also enrolled in Edgar's anatomy class — a female student that Edgar has been salivating over since the first day of class. In an attempt to impress Sasha, Edgar tries to strike up a conversation about the upcoming anatomy test on Wednesday. Sasha didn't even realize that there was a test coming up — let alone start studying for it. Edgar encourages Sasha to study with him that night in preparation for the upcoming test. Edgar assumes the following position in the hopes that Sasha can correctly analyze it, thereby leading to further anatomical studies.

Edgar stands in the middle of the Westerlin lounge balancing on his left lower limb (knee straight, foot flat on the floor). His right lower appendage and ankle are bent such that his right thigh is parallel to the ground and his left heel is touching his right buttocks. Edgar's right upper appendage is straight out to the side, thumb pointing towards the ceiling, palm directed anteriorly. His left upper appendage is directed posteriorly, elbow bent such that his forearm is perpendicular to the floor. The left wrist is bent such that the hand is parallel to the floor, with the posterior surface of his hand parallel (and closer) to the floor and the anterior surface parallel (and closer) to the ceiling. He is arching his back, and his chin is on his chest.

(go to the next page for the position analysis questions)

Answer questions by placing the appropriate letter in the space provided. (2 points each)

- _____ 1. Edgar's right knee is:
- a. flexed
 - b. extended
 - c. abducted
 - d. adducted
 - e. medially rotated.
 - f. laterally rotated
 - g. none of the above – the joint is neutral

- _____ 2. Edgar's left hip is:
- a. flexed
 - b. extended
 - c. abducted
 - d. adducted
 - e. medially rotated.
 - f. laterally rotated
 - g. none of the above – the joint is neutral

- _____ 3. Edgar's left ankle is:
- a. flexed
 - b. extended
 - c. abducted
 - d. adducted
 - e. medially rotated.
 - f. laterally rotated
 - g. none of the above – the joint is neutral

- _____ 4. Edgar's cervical vertebrae are:
- a. flexed
 - b. extended
 - c. abducted
 - d. adducted
 - e. medially rotated.
 - f. laterally rotated
 - g. none of the above – the joint is neutral

- _____ 5. Edgar's right elbow is:
- a. flexed
 - b. extended
 - c. abducted
 - d. adducted
 - e. medially rotated.
 - f. laterally rotated
 - g. none of the above – the joint is neutral

_____ 6. Edgar's right shoulder is:

- a. flexed
- b. extended
- c. abducted
- d. adducted
- e. medially rotated.
- f. laterally rotated
- g. none of the above – the joint is neutral

_____ 7. Edgar's left shoulder is:

- a. flexed
- b. extended
- c. abducted
- d. adducted
- e. medially rotated.
- f. laterally rotated
- g. none of the above – the joint is neutral

_____ 8. Edgar's right wrist is:

- a. flexed
- b. extended
- c. abducted
- d. adducted
- e. medially rotated.
- f. laterally rotated
- g. none of the above – the joint is neutral

_____ 9. Edgar's right knee rotated around what axis?

- a. anterior-posterior
- b. vertical
- c. horizontal

_____ 10. Edgar's left wrist rotated around what axis?

- a. anterior-posterior
- b. vertical
- c. horizontal

_____ 11. Edgar's right hip rotated around what axis?

- a. anterior-posterior
- b. vertical
- c. horizontal

Section 2 – Short answer/essay

12. List all of the layers of thick skin, starting deep and progressing to superficial, and give a short explanation of the function of each of these layers. (15 points)

Section 3: True-False Questions: Answer the following questions by placing a (+) in the space provided if the statement is true; place a (O) in the space provided if the statement is false. (2 points each)

- _____ 13. Both layers of the periosteum (fibrous layer and osteogenic layer) participate in the healing of a broken bone.
- _____ 14. Caucasian individuals and individuals of African-American descent have the same number of pigment-producing cells within the stratum germinativum of the epidermis. The difference in skin color is due to the difference in the rate and amount of pigment produced; not due to a difference in the number of pigment-producing melanocytes.
- _____ 15. Cleavage lines of the skin are important to a surgeon in that an incision made perpendicular to the cleavage lines will (usually) heal more slowly and will leave a more prominent scar than an incision made parallel to the cleavage lines of the skin.
- _____ 16. Compact bone withstands stress from compression (forces parallel to the longitudinal axis of the bone) better than it withstands stress perpendicular to the longitudinal axis of the bone.
- _____ 17. Wrinkles of the skin, and stretch marks of the skin are due to tearing of connective tissue fibers within the epidermis of the skin.
- _____ 18. All cartilaginous joints are freely movable.
- _____ 19. Connective tissue is classified by the type of material found in the intracellular space.
- _____ 20. One of the characteristics of epithelial tissue is that it has little or no intercellular space.