

# Human Anatomy — Biology 255

## 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 52. 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 # 1 through # 16 by 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 Margin Ovara, 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 Margin, Edgar tries to strike up a conversation about the upcoming anatomy test on Wednesday. Margin, was unaware there was a test coming up — let alone start studying for it. Therefore she decided to study with Edgar that night in preparation for the upcoming test. Edgar assumes the following position in the hopes that Margin 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.

Answer questions #1 through 16 on the subsequent pages by placing the appropriate letter in the space provided. (2 points each)

- \_\_\_\_\_ 1. Edgar's left hip is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 2. Edgar's left knee is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 3. Edgar's left ankle is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 4. Edgar's right hip is
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 5. Edgar's right knee is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above

- \_\_\_\_\_ 6. Edgar's cervical vertebrae are:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 7. Edgar's right shoulder is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 8. Edgar's right elbow is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 9. Edgar's right wrist is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above

- \_\_\_\_\_ 10. Edgar's left shoulder is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 11. Edgar's left elbow is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 12. Edgar's left wrist is:
- flexed
  - extended
  - abducted
  - adducted
  - medially rotated.
  - laterally rotated
  - more than one of the above
  - none of the above
- \_\_\_\_\_ 13. Edgar's right hip rotated around what axis?
- anterior-posterior
  - vertical
  - horizontal
- \_\_\_\_\_ 14. Edgar's cervical vertebrae rotated around what axis?
- anterior-posterior
  - vertical
  - horizontal
- \_\_\_\_\_ 15. Edgar's left wrist rotated around what axis?
- anterior-posterior
  - vertical
  - horizontal
- \_\_\_\_\_ 16. Edgar's right knee rotated around what axis?
- anterior-posterior
  - vertical
  - horizontal

**Section 2:** 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)

- \_\_\_\_\_ 17. Thin skin and thick skin are found in different locations on the human body. Thin skin is found where hair normally grows, while thick skin is found on locations of extreme friction. Other than location, the only difference between thin skin and thick skin is the thickness of the stratum corneum.
- \_\_\_\_\_ 18. The color of a Caucasian's skin is due more to blood flow than to pigment found within the epidermis of the skin.
- \_\_\_\_\_ 19. 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.
- \_\_\_\_\_ 20. 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.
- \_\_\_\_\_ 21. Mature cartilage is avascular.
- \_\_\_\_\_ 22. Wrinkles of the skin, and stretch marks of the skin are due to tearing of connective tissue fibers within the epidermis of the skin.
- \_\_\_\_\_ 23. 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.
- \_\_\_\_\_ 24. In thin skin the stratum lucidum is typically absent.
- \_\_\_\_\_ 25. Both layers of the periosteum (fibrous layer and osteogenic layer) participate in the healing of a broken bone.
- \_\_\_\_\_ 26. The dermis is composed of two layers: the papillary layer and the reticular layer. The papillary layer of the dermis is responsible for the nourishment of the more superficial layers of the epidermis, while the reticular layer is responsible for the mechanical properties of the dermis.