

Assessment in Anatomy and Physiology

The assessment strategy is intended to assure adequate mastery of the essential curricular content required by the student in preparation for upcoming course work and clinical instruction. To this end, an assessment will be given after each unit is completed. Assessment will be on a unit-by-unit basis and is non-cumulative, although it should be noted that any particular unit discussed assumes a working knowledge of previous units.

Assessments are given in two different modalities:

1. In-class Exams – These generally are paper exams where students are allotted a certain amount of time to complete them.
2. Blackboard Exams – Blackboard exams are timed more tightly, with one minute per question. Further, there is no backtracking.

To accomplish this preparatory task, detailed outlines and handouts are available online, as well as a learning guide for each module to help guide you in the task of learning. In addition, videos of lecture content are available to view. The information contained in these resources is the information that will be assessed. The outlines will guide you through the required anatomical and physiological topics and concepts. They will contain the required vocabulary, physiological processes requiring understanding, and any other essential points or issues that require mastery.

In terms of assessment, anatomical concerns tend to employ illustrations, true and false, multiple-choice and fill-in-the-blank questions. Regarding physiological concerns, short answers, illustrations, and guided essays may be employed. Again, the questions types are:

- True / False
- Multiple Choice
- Fill in the Blanks
- Short Answers
- Illustrations for labeling
- Guided Essays

These assessment categories can be broadly divided as follows:

- T/F, MC, and “Fill in the Blank” questions tend to deal with vocabulary, essential anatomy and physiology of specific structures or essential

principles. Students are expected to gain a working knowledge of critical vocabulary. Fill in the blank questions are used frequently.

- Short answers, Illustrations, and Guided Essays tend to deal with major themes and understanding.

All exams must be completed by the day and time indicate on the syllabus.

So what do the exams look like? Here are some examples of how the questions may look:

True and False questions – If the answer is true, the entire statement is true. If one aspect of the statement is not true, then the entire statement is false. T/F frequently deals with absolutes.

1. The cytoskeleton of an Erythrocytes is made of spectrin, and prevents the spontaneous formation of fibrin clots True False

This answer is False. Although the first part of the statement is true, the second is not. Therefore, the answer is False.

2. In cellular respiration, NAD⁺ is reduced to NADH and the associated electrons will be delivered to the electron transport chain. True False

This answer is True. Everything about this statement is true.

Multiple Choice Questions – Here a question is poised, and the correct answer must be chosen

3. Which stem cell will directly give rise to B and T Cells
- | | |
|------------------------|-------------------------------|
| a. myeloid stem cells | c. hematopoietic stem cells |
| b. lymphoid stem cells | d. osteoprogenitor stem cells |

The correct answer is b. They directly give rise to B and T cells

4. Which of the pathways below gives rise to a fibrin clot
- | | |
|----------------------|---------------------|
| a. intrinsic pathway | c. common pathways |
| b. extrinsic pathway | d. all of the above |

D is the correct answer, as both “a”, “b” and “c” all give rise to a fibrin clot

Fill in the Blank – Here a question is made and the answer must be provided in the space provided, or a statement is made and the appropriate association needs to be made.

5. _____ The stage in erythropoiesis that both results in a biconcave shape of an erythrocytes as well as an anaerobic respiration

The correct answer is Ejection Stage, which occurs when the mitochondria and other organelles such as the nucleus are ejected out of the cell

6. _____ If iron is to be transported from the spleen to the liver, it will need to be associated with what transport molecule

Transferrin is the correct answer.

Matching – In the case of matching, answers may be used more than once or not at all. If there is no correct answer, just leave the space blank

7. _____ When oxygen binds to hemoglobin it is called
_____ Iron stored within cells is bound to what molecule
_____ Lends flexibility to an Erythrocyte
_____ 30% of the CO₂ transported in the blood will be in what form

G	Globin
H	Heme
I	Iron
O	Oxyhemoglobin
F	Fetal Hemoglobin
C	Carbaminohemoglobin

The answers are below. For those answers that are left blank, you will note as you do the readings that there is no reference to such statements whatsoever. Note also that not all answers are used.

7. O When oxygen binds to hemoglobin it is called
 _____ Iron stored within cells is bound to what molecule
 _____ Lends flexibility to an Erythrocyte
 C 30% of the CO₂ transported in the blood will be in what form

G	Globin
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Guided Essay – When you do a guided essay, you will not get a tired or cramped hand. These are essentially large fill in the blank questions. Further, if there is one, I will normally let you know in advance what it is. Below is a very short example of such an “essay” with the answers:

8. Fluid Movement
- A. _____
 B. _____
 C. _____
 D. _____
- Water balance within the tissues of the body is tightly regulated and controlled by relative concentrations of “osmotically active substances.” In the case of water balance between interstitial fluid and the intracellular fluids within cells, we note that fluid will enter into cells what the ion A increases concentration within cells. Regarding fluid balance between the blood and the interstitial fluids, we see that the protein B has a constant concentration throughout the capillary. However, because the blood is thick or C, it experiences resistance upon passage through the capillary, and as a result, the hydrostatic (or blood) pressure goes D.

8. Fluid Movement
- A. **Potassium**
 B. **Albumin**
 C. **Viscous**
 D. **Down**
- Water balance within the tissues of the body is tightly regulated and controlled by relative concentrations of “osmotically active substances.” In the case of water balance between interstitial fluid and the intracellular fluids within cells, we note that fluid will enter into cells what the ion A increases concentration within cells. Regarding fluid balance between the blood and the interstitial fluids, we see that the protein B has a constant concentration throughout the capillary. However, because the blood is thick or C, it experiences resistance upon passage through the capillary, and as a result, the hydrostatic (or blood) pressure goes D.

Short Answers – Short answer questions are typically answered in a few sentences.

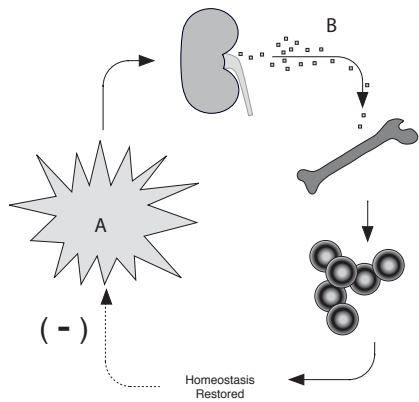
9. How is heme processed in the body

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The primary location is within the spleen where macrophages will modify this pigment to biliverdin and then to bilirubin. Bilirubin is then complexed with albumin for blood transport to the liver. The liver will retrieve it, and then the bilirubin is transported to the gall bladder for temporary storage before going to the digestive tract for elimination.

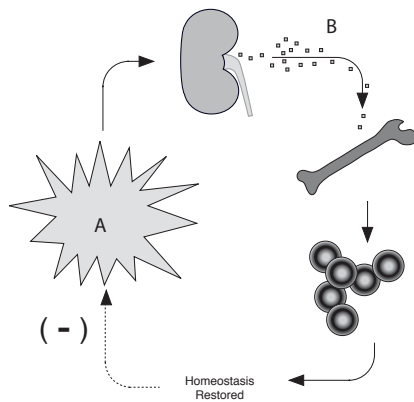
Illustrations – An illustration will be recognized as something that you saw or is similar to something you saw in the required course work. Below is a simple illustration with the answers that follow

10.



“A” is referring to a type of stress called

The hormone “B” is called



“A” is referring to a type of stress called
Hypoxia

The hormone “B” is called
Erythropoietin