

**MA119 Lab 2
Critical Thinking
Week 3**

**Name: Jasmine Woodard
Date:**

All Answers Must be in Complete Sentences as well as well rounded and thought out, giving specifics/details and examples as necessary.

1. Why do females have lower hemoglobin after puberty than males?

Just like most things that have to do with the body hemoglobin level also depends on age, sex and other health problems. Due to a woman's menstrual cycle and hormone levels women have less hemoglobin, also women have lower red cell mass because of greater efficiency in tissue oxygenation.

2. What role does thrombin play in clot formation in a patient with a small cut?

Thrombin catalyzes the conversion of fibrinogen which is a soluble plasma protein into long, sticky threads of insoluble fibrin. The fibrin threads form a mesh that traps platelets, blood cells, and plasma. Within minutes, the fibrin meshwork begins to contract.

3. Why does the physician usually order both an hemoglobin and a hematocrit as a means of evaluating anemia?

Hemoglobin and hematocrit testing are so simple to do that it is often requested by the physician and the two should then be calculated together; the hemoglobin test should be calculated ($\times 3 \pm 3$) and should equal the hematocrit. The hematocrit is a measurement of the percentage of packed RBC in a volume of blood. Hemoglobin is another way to check oxygen carrying capacity in the blood.

4. Why is it important for patient comfort for the capillary puncture to be performed on the side of the finger rather than on the tip?

If it is done on the tip it can be more painful and there is also a higher chance of causing nerve damage or hitting a bone.

- 5.** Is a PT/INR of 1.7 high or low when ensuring a therapeutic level for someone on Coumadin therapy to prevent clot formation?

For a patient who is taking Coumadin the normal range is from 2-3 because their blood should clot slower than those that are normal healthy individuals so a 1.7 is considered low.

- 6.** What tests are part of a chemistry panel and what reasons for performing them?

Blood glucose testing, elevated blood glucose levels are most often associated with diabetes mellitus as well as pancreatitis, endocrine disorders, and chronic renal failure.

Hemoglobin A1c testing, measuring the amount of glucose that has been irreversibly bound to hemoglobin and provides an assessment of the average blood sugar over 60-90 days. This is performed on diabetic patients every 3 months.

Cholesterol testing, this is done to measure the cholesterol a person eats and the cholesterol that is produced by the body if a person has too much cholesterol a stroke or heart attack may occur.

- 7.** Why do we need to understand Red Blood Cell Indices?

Red blood cell indices provide information about RBC disorders. The indices are used to classify anemias and used to select additional tests that may help determine the cause of the anemia. The indices are also helpful to monitor treatment. They are also very important when it comes to treatment, it shows how a patient is responding to a treatment they use Hct, Hgb, and the RBC count in a mathematical calculation. The Red blood cell indices include the Mean cell volume, Mean cell hemoglobin, and Mean cell ratio of hgb and hct.