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Your answers must be in complete sentences without grammatical error, they must be well thought out, with specifics and details.

1. Why are red blood cells biconcave?

Red blood cells being biconcave help them be very flexible and able to be manipulated to fit through capillaries. This helps with oxygen transportation through the whole body. Because they are biconcave and they are able to manipulate themselves easier to fit in smaller capillaries this brings to oxygen throughout the whole body so there is not one part that would be lacking more than the other.

2. Why is a WBC differential so important when making differential diagnoses?

It is so important when making differential diagnoses because a WBC differential is looking at all the different WBC individually and the counts of each individual type of WBC. An abnormality in one of the WBC can indicate a certain illness, infection or disease that an abnormality in another WBC wouldn't. It narrows down what the issue could be by doing a WBC differential to help diagnose the patient.

3. Why are patients who have relatively normal hemoglobin but a low hematocrit given packed cells rather than whole blood?

This is because a hematocrit level measure the volume of red blood cells compared to the volume of blood. So, when a hematocrit is low, that means the volume of RBCs is low. You would give someone with a low hematocrit packed cells rather than whole blood because the patient isn't lacking blood, they are lacking RBCs and need more RBCs, not blood.

4. What are the essential features of blood cells used in the differentiation of the cells?

The essential features of blood cell differentiation are erythrocytes, basophil, neutrophil, eosinophil, and monocyte. These are used when the cell becomes more specialized for a certain function that it is going to have in the body.

5. What is the normal shape of a red blood cell? A white blood cell?

Biconcave is the normal shape of a red blood cell, as talked about in question one. Biconcave shape is round with the middle of the cell being sunken in, and not as protruding as the sides of the cell. The normal shape for a white blood cell isn't one set shape. White blood cells are constantly changing their shape because the function of white blood cells are to help fight off bacteria, so the WBCs are constantly moving and morphing to different shapes to do so.

6. Why are capillary punctures used to obtain a blood specimen from geriatric patients?

Capillary punctures are done on geriatric patients because there is less risk for injury to the patient. Geriatric patients usually have small, weak veins that can make it hard to obtain from, and also a lot easier to damage or roll. A lot of tests can be run with obtaining minimal blood, this is why it is easier and quicker to obtain the sample with a capillary puncture because there is minimal risk for the patient.

7. Where is the primary site for the production of erythrocytes, granulocytes, and platelets?

All three of these are going to be produced in ones bone marrow. That is where most of the red and white blood cells are going to be produced.