

## Homework #2 - Blood Typing and Disorders - pg 295-304

Define the following terms:

1. Hemorrhage - **\_excessive bleeding**
2. Transfusion - **to transfer blood from one person to another\_**
3. Hemolyzed - **blood cells that have ruptured as a result of agglutination\_\_\_\_\_**
4. Antigens - **proteins that stimulate an antibody reaction in the blood\_\_\_\_\_**
5. Antibodies **a substance produced in response to an antigen\_\_\_\_**
6. Agglutination - **the clumping of red cells as a result of a mixing of blood types**
  
7. Name the four blood types in the ABO system. **A,B,AB, O**
  
8. What are the three main antigens involved in incompatibility reactions? **A, B, and D (Rh)**
9. What is the Rh factor, and what is the difference between Rh-positive and Rh-negative?  
**A third antigen found on the surface of red blood cells; Rh positive indicates you HAVE the antigen, Rh negative you do not have it.**
10. What is anemia, and what are some of the causes?  
**A condition in which there is a low level of hemoglobin in the body; causes include hemorrhaging, rupturing, bone marrow failure or nutritional deficiencies.**
11. Describe what happens to blood cells of someone with sickle cell anemia and the results of that change. **Upon physical exertion, the cells lose their oxygen and change shape, causing blockages in the capillaries, which in turn causes lack of oxygen to tissues, which causes pain/cell death.**
12. What characterizes leukemia? **An enormous increase in the number of white blood cells in the blood, causing them to become ineffective in their job and crowding out other cells.**
13. What characterizes hemophilia? **It is deficiency in the clotting factor VIII; injuries may then cause excess bruising and serious abnormal bleeding.**
14. What is a hematocrit, and what are the normal ranges for men and women? **The volume of red cells in whole blood. The normal range for men is 45-54% of the blood; for women it is 36-46%.**
15. What is "normal"/ and abnormal for each of the following:
  - a. red blood cell count - **4.5 - 5.5 million cells/ mL of blood**
  - b. white blood cell count - **5000 - 10,000 cells/mL of blood**