Study Guide - Bio 160 - **Blood** – Chap 11

List some if the physical characteristics of blood, including what type of tissue it is, its temperature, viscosity, pH, and average blood volume

What are the three general functions of blood? Give specific examples of each function

What is the composition of blood (what is it made up of)?

What is the main constituent (ingredient) of Plasma?

What are the three main plasma proteins and what functions do they perform? Which plasma proteins are synthesized by the liver?

What are the “formed elements” of blood?

What is the name of the pluripotent stem cell that gives rise to all of the formed elements?

Be able to explain the process of Hemopoiesis, including which “blast” cells develop from myeloid & lymphoid stem cells, and which of the formed elements develop from each of the blast cells

Describe the structure of an erythrocyte (RBC), including what organelles & molecules are found within these cells.

Approximately how many red blood cells will you have in a cubic millimeter (mm3) sample of blood?

What is the average life span of a RBC? How & where are old/damaged RBC’s removed from the circulation?

Describe the basic structure of hemoglobin. What is the function of hemoglobin? Describe the fate of a typical molecule of hemoglobin when RBCs are removed from the circulation.

What is erythropoiesis? Where in the body does it occur? What is the stimulus for erythropoiesis?

Which of the formed elements is responsible for your blood type?

What are the 3 common surface antigens (aka iso-antigens or agglutinogens) that determine your blood type? Where are these antigens found?

What are the 3 common agglutinins (blood type antibodies) that might be found in blood? In which part of the blood could you find these agglutinins?

List the 8 common blood types. For each one, list which surface antigens are present, which antibodies are present, which blood types that person could donate safely to, which blood types that person could safely receive from.

Describe what might happen if an Rh- mother has a child who is Rh+. What is the name of the resulting disorder?

Which leukocytes are classified as granular leukocyes? Which ones are agranular?

What is the normal range of WBCs found in a cubic millimeter of blood?

What is the average life span of WBCs?

Name and describe the 4 characteristics associated with white blood cells?

What is the average laboratory value for a total WBC count in a healthy person?

What is the normal distribution of WBCs in the blood (normal WBC differential)?

What are the specific functions associated with each of the WBCs. Know which specific WBCs will increase in number with conditions such as: bacterial infections (acute & chronic), parasitic infections, allergic responses, inflammatory reactions, viral infections

Which cells in the bone marrow directly give rise to the platelets which are found in the blood?

What is the average number of platelets found in a cubic millimeter of blood?

What is the average “life span” of platelets?

What is hemostasis?

Describe the processes of vascular spasm, & platelet plug formation

Describe the process of coagulation. What is meant by the terms intrinsic pathway & extrinsic pathway in regards to the initiation of the coagulation process? What is the common product that is produced by both initial coagulation paths? What is the resulting product when Factor X is activated? What does prothrombinase do? Why is it necessary to produce thrombin? (What does it do?)

Once a clot is formed in a damaged blood vessel, why is clot retraction helpful? What is fibrinolysis and why is it important?

What is a thrombus? What is an embolism? Why are they dangerous?