

## **Cardiovascular System—Blood**

### **Required:**

1. Describe how the functions of blood are related to cell and body homeostasis.
2. Describe the composition of blood and the relative volumes of each component.
3. Relate the structure of the red blood cell to its function.
4. Describe how red blood cell formation is homeostatically controlled.
5. Describe how damaged red blood cells are removed from circulation how the breakdown products are recycled or eliminated.
6. Briefly describe the composition and function of plasma.
7. Describe the structure and function of platelets.
8. Describe the three stages of hemostasis.
9. Describe the formation of a platelet plug.
10. Give a general overview of the clotting process (i.e. a cascade of reactions involving positive feedback that requires platelets and plasma proteins).
11. Distinguish the intrinsic clotting mechanism from the extrinsic mechanism with regard to their initiation and indicate how the two mechanisms are related.
12. Specifically describe the role of thrombin in blood clotting and describe the final reaction involved in clot formation.
13. Describe the function of anticoagulants.
14. Describe the function of factors that promote fibrinolysis
15. Be able to describe the different blood types in terms of the antigens (agglutinogens) and antibodies (agglutinins) present in the blood and the effects of mixing different blood types.
16. Describe how red blood cells, platelets and all types of white blood cells arise from a common cell type in the bone marrow.
17. Describe the general appearance (granular vs. agranular) of each type of white blood cell.

18. Describe the general function and relative abundance of each type of white blood cell.