**Cardiovascular System (Part I) Study Guide**

1. Know the major functions of the cardiovascular system:

To pump and circulate blood throughout your body, but why?

* 1. Blood gains oxygen in the lungs and that oxygen must be distributed to cells throughout your body.
  2. Blood gains nutrients from your digestive tract and those nutrients must be distributed to cells throughout your body.
  3. Cells throughout your body produce CO2 (carbon dioxide) as a waste. Your blood transports that CO2 waste to your lungs to be exhaled.
  4. Cells throughout your body produce other waste molecules that must be delivered to your liver to be broken down or to your kidneys to be excreted.
  5. Your blood circulates and delivers white blood cells to any areas of infection or injury in the body.
  6. Distributes hormones and other chemical signals throughout the body from the organs that produce them. For example: adrenaline from the adrenal glands, insulin from the pancreas, growth hormone from the pituitary gland, etc.
  7. Our cardiovascular system can help regulate body temperature. Blood vessels can dilate (widen) near the skin to release heat or blood vessels can constrict (narrow) near the skin to retain heat.

1. Be able to trace the flow of blood through the circulatory system.
   1. Know figure 11.3 “The systemic and pulmonary circulations” page 352. (given as a handout)
   2. Read page 352 (the section next to the diagram).
   3. Be able to identify where in the circulatory system blood is oxygenated (high in oxygen) and where it is deoxygenated (low in oxygen).
   4. Know the basic differences between arteries, capillaries, and veins.
      1. Arteries carry blood away from the heart.
      2. Capillaries are the smallest and thinnest blood vessels across which materials are *exchanged* between blood and body cells.
      3. Veins carry blood back to the heart.
2. Be able to label the external and internal anatomy of the heart.
   1. Know Figure 11.2 pages 350 and 351. (given as a handout)
   2. Read pages 348-354.
   3. Know the basic differences between atria and ventricles.
      1. Atria chambers receive blood: Right atrium receives deoxygenated blood from the body. Left atrium receives oxygenated blood from the lungs.
      2. Ventricle chambers pump blood: Right atrium pumps deoxygenated blood to the lungs. Left atrium pumps oxygenated blood to the body.
   4. Know the location and function of the AV valves.
   5. Know the location and function of the aortic and pulmonary valves.
3. Know the location and function of the coronary arteries
   1. Read sections “Cardiac circulation” and “Homeostatic imbalance” on page 354.
   2. Understand that a heart attack is the result of a blocked coronary artery.