STUDY GUIDE – EXAM 1

Be able to:

Describe or label a diagram of the heart including chambers, vessels, valves, and tissue layers.

Explain the relationship of the S. A. node to the heart rate in humans.

Match the wave or an interval of an ECG with the event occurring in the heart.

Describe the tissue layers surrounding the heart and the location and function of pericardial fluid.

Explain the difference between the S. A. node, the A. V. node, and the rest of the conducting tissues found in the heart. Specify the location of each structure.

Describe all events of a cardiac cycle, including the time periods of each event.

Explain the difference between parasympathetic and sympathetic effects on the heart, and understand the effect of prominent hormones on the heart activity.

Explain the cause of the 1st and 2nd heart sounds, and when they occur during the cardiac cycle.

Match the pressure cycle in the heart and the aorta with the opening and closing of the valves, and specify which event is responsible for each valve movement.

Given the beat frequency (heart rate) and the volume per beat (stroke volume) be able to calculate the cardiac output, or vice versa. Define each factor and its effects.

Explain the relationship of Starling's law to the force of contraction of the heart.

Describe blood flow through the heart, including what mechanisms are responsible for the flow.

Define the terms ischemia and infarction and specify which is more serious.

Discuss all aspects related to regulation of the heart rate.

Discuss blood in terms of functions and basic composition.

Describe the components of erythrocytes and their functions, creation and destruction.
Specify the normal packed cell volume in an adult’s hematocrit.

Describe the composition of plasma.

Be able to describe normal plasma solutes.

Given the blood type of a donor and a recipient be able to discuss what significant (!) reaction would occur and which reactant is from the donor blood and which is from the recipient blood.

If given the blood types of a pregnant mother and fetus, identify if a risk occurs, why the risk is present, and what the treatment would be.