BIOLOGY 218
HUMAN ANATOMY & PHYSIOLOGY II

EXAM 1 REVIEW SHEET

Material Covered on Exam: Chapters 17-19

For this exam, you will be expected to . . .

- Describe the important components, functions, and major characteristics of whole blood.
- Discuss the composition and functions of plasma.
- List the characteristics and functions of red blood cells.
- Describe the chemical structure of hemoglobin and how it relates to sickle cell anemia.
- Describe how the components of aged or damaged red blood cells are recycled.
- Explain the importance of blood typing and the basis for the ABO and Rh incompatibilities.
- Describe hemolytic disease of the newborn, erythroblastosis fetalis, explain the clinical significance of the cross-reaction between fetal and maternal blood types, and cite preventive measures.
- List the common characteristics to all leukocytes.
- Discuss the structural and functional differences between the different types of leukocytes and list the relative abundance of each type in a healthy individual.
- Discuss the characteristics and functions of platelets.
- Discuss the process of hematopoiesis and list the stages, factors, and chemicals involved in the process.
- Describe the events of the clotting cascade and list the chemicals that regulate each phase of the process.
- Explain how blood disorders are detected and describe examples of the various categories of blood disorders.
- Describe the size, shape, location, and orientation of the heart in the thoracic cavity.
- Describe the pericardium, layers of the heart wall and describe the orientation of the superficial and deep layers of the heart muscle.
- Name each chamber of the heart and the type of myocardium of which each is made.
- Name the major vessels supplying the right versus left side of the heart and the type of blood each is transporting.
- Name the 4 heart valves, and describe their location, function, and mechanism of operation.
- Be able to trace the flow of blood through the pulmonary, systemic, and coronary circulation.
- Explain the events of the cardiac cycle including atrial and ventricular systole and diastole, and relate the heart sounds to these events.
- Name and describe the components and functions of the intrinsic and extrinsic cardiac conduction systems.

- Explain the mechanisms the body uses to control cardiac output.
- Describe the factors affecting heart rate and the factors affecting stroke volume.
- Explain how adjustments in stroke volume and cardiac output are coordinated at different levels of activity.
- Name the waves of an EKG and describe what each wave represents.
- Describe the factors affecting blood flow, total peripheral resistance, blood velocity, and blood pressure.
- Describe the autoregulation and central regulation mechanisms used by the body to control blood flow & blood pressure.
- Discuss the various hormones that raise and lower blood pressure and blood flow.
- Describe the two pump mechanisms that aid in venous return.
- Discuss the pressures involved with capillary exchange, what produces each pressure, and which one favors filtration.
- Define net filtration pressure.
- For a given set of numbers, calculate pulse pressure, mean arterial pressure, cardiac output, and net filtration pressure.
- Name and define the various cardiovascular disorders as described in this chapter.
- Name the three layers of a typical blood vessel and give the functions and tissue types associated with each layer.
- Name the three types of arteries, give an example of each, and describe the main characteristics & functions of each.
- Name the types of veins and describe the main characteristics & functions of each.
- Name and describe the three types of capillaries and discuss their location and functions in the body.
- Identify the structures of a capillary bed and describe how these structures and blood flow regulate capillary exchange.
- Describe the venous system, and indicate the volume of blood distributed within the cardiovascular system at any given time.
- Be able to identify the major arteries and veins of the pulmonary circuit, systemic circuit, and coronary circuit.

Additionally, you should be reviewing the following items . . .

- Course Textbook; Chapters 18-20
- Course Supplement; Modules 2-4
- Human A & P Labs 1-3
- Hole's Anatomy & Physiology; Chapters 14-15
- Anatomy & Physiology (McKinley text); Chapters 18-20
- Principles of Anatomy & Physiology (Tortora text); Chapters 19-21
- Seeley's Anatomy & Physiology; Chapters 19-21

Also, be sure to take a look at the links and resources on Canvas and my lecture and laboratory webpage. ***This study guide covers the majority of information on the lecture exam, but***

possibly not all of it. You are still responsible for any information that was covered but not put on this study guide (intentionally or unintentionally). Good Luck and Study Hard!!!