Final Exam Objectives
Hthsci 2230
Pathophysiology

Chapter 2
1. Identify and describe under which conditions the following cellular adaptations occur: atrophy, hypertrophy, hyperplasia, dysplasia and metaplasia.
2. Identify and describe the mechanisms of cellular injury for the following causes: hypoxia, chemicals, free radicals, infectious agents, asphyxial injuries, immunological and inflammatory responses, genetic factors, nutritional imbalances, and physical trauma.
5 & 6. Define necrosis and identify the five major types of cellular necrosis. Identify and describe the mechanism and resulting damage of coagulative, liquefactive, caseous, fat, and gangrenous necrosis.

Chapter 3
4. Describe how the following events contribute to the development of edema: decreased capillary oncotic pressure, increased capillary permeability, increased capillary hydrostatic pressure, and lymph obstruction.
7. Identify the major clinical manifestations of abnormal levels of sodium, potassium, calcium, phosphate, and magnesium.
8. Describe the role of pH, pCO2 and HCO3 in evaluating acid-base imbalances.
9. Identify the stimulus and compensatory mechanisms for metabolic acidosis, respiratory acidosis, metabolic alkalosis, and respiratory acidosis.
10. Differentiate between metabolic acidosis, respiratory acidosis, metabolic alkalosis, and respiratory acidosis given appropriate clinical testing data.

Chapter 4
5. Define and describe the following elements of inheritance: autosomal, sex-linked, carrier, dominant, and recessive.
7. Describe the genetic abnormalities and resulting clinical abnormalities associated with the following diseases: Down syndrome, Turner syndrome, Klinefelter syndrome, Cri du Chat syndrome, Huntington disease, cystic fibrosis, neurofibromatosis, hemophilia A and Duchenne muscular dystrophy.

Chapter 5
2. Describe and apply the terms liability distribution and threshold of liability as they relate to the threshold model of multifactorial disease.
3. Describe the use of twin and adoptive studies in the analysis of multifactorial diseases.

Chapter 10
2. Cite the method for naming and classifying tumors; provide examples.
7. Describe the initiation-promotion-progression theory of carcinogenesis.
12. Indicate the limitations of immune surveillance as a defense against cancer.

Chapter 11
1 & 2. Identify and describe factors encouraging local spread of cancerous cells. Describe the role of the following in the proposed sequence of events for tumor cell invasions of the extracellular matrix; tumor cell attachment to
the basement membrane, degradation of the matrix, and locomotion into the matrix.

7 Describe the common clinical manifestations of cancer: anemia, infection, paraneoplastic syndromes, cachexia, fatigue, and pain.

Chapter 12
1 Compare childhood neoplasms to adult cancers: environmental vs. genetic influences, cure success rate, common cancers, incidence rates, and response to treatment.

Chapter 25
1 & 2 Define anemia.

Classify the anemias in one of the following groups: macrocytic-normochromic, microcytic-hypochromic and normocytic-normochromic

4 Describe the pathophysiology and any unique clinical manifestations of the following anemias: iron deficiency, pernicious anemia, folic acid deficiency, sideroblastic anemia, aplastic anemia, hemorrhagic anemia, hemolytic anemia, and anemia of chronic disease.

Chapter 26
3 Classify, contrast, and describe the manifestations of leukemia: acute lymphoblastic leukemia (ALL), chronic lymphocytic leukemia (CLL), acute myeloblastic leukemia (AML), chronic myelocytic leukemia (CML).

4 Describe the pathophysiology and manifestations of multiple myeloma.

5 Compare and contrast Hodgkin disease to non-Hodgkin lymphoma.

8 Identify the causes and clinical manifestation of coagulation disorders: hemophilia A (factor VIII), von Willebrand disease, vitamin K deficiency, and excessive utilization of clotting factors

9 Describe the pathophysiology and manifestation of disseminated intravascular coagulation (DIC).

Chapter 27
1 & 2 Compare and contrast the two major causes of hemolytic disease of the newborn, ABO and Rh incompatibility.

Describe the inheritance pattern, disease, process, and clinical manifestations of sickle cell disease.

Chapter 6
3 Define active, passive, artificial, and innate immunities.

13 Characterize the cellular interactions within the immune response: actions of antigen-presenting cells, Th cells, Tc cells, Ts cells, B cells, plasma cells, and memory cells.

Chapter 7
1 Define inflammation and contrast it with immunity.

Chapter 8
2 Compare and contrast the four hypersensitivities (I, II, III, and IV).

11 Describe the immune deficiency disorder, AIDS: signs, symptoms, pathophysiology, and laboratory testing.

Chapter 14
3 & 4 Differentiate between acute and chronic pain.

Differentiate between the following pain responses: somatic pain, visceral pain, referred pain, phantom pain, neuralgias, hyperesthesias, myofascial pain syndromes, hemangniosia and low back pain.
Chapter 15
1. Define the following terms that describe various levels of consciousness: confusion, lethargy, obtundation, stupor, and coma.
5. Define seizure and cite conditions associated with seizure disorders.
10. Characterize cerebral hemodynamics and stages of increased intracranial pressure; describe herniation syndrome.

Chapter 16 & 18
2. Define and describe the following types of brain injuries: coup, contracoup, extradural hematomas, subdural hematomas, intracerebral hematomas, mild and classical cerebral concussions, and mild, moderate, and severe diffuse axonal injuries.
5. Compare and contrast the types of cerebrovascular accidents (CVA): thrombotic stroke, transient ischemic attack (TIA), stroke-in-evolution, completed stroke, embolic stroke, and hemorrhagic stroke.
10. Differentiate between bacterial and aseptic (viral) meningitis.

Chapter 20
4. Characterize the manifestations of hypothyroidism and hyperthyroidism: basal metabolic rate, sympathetic response, weight, temperature tolerance, GI functions, cardiovascular function, respiratory function, muscle tone and reflexes, general appearance, and general behavior.
8. Describe the similarities and differences between insulin-dependent (type I) and non-insulin-dependent (type II) diabetes mellitus.
10. Describe the chronic complications of diabetes mellitus: diabetic neuropathies, microvascular diseases, macrovascular diseases, and infections.

Chapter 9
3. Define stress, identify stressors, and characterize the stress response.

Chapters 29 & 30
1. Distinguish between arteriosclerosis and atherosclerosis; describe the development and consequences of atheromatous plaque.
2. Distinguish between primary, secondary, complicated, and malignant hypertension.
7. Characterize coronary artery disease (CAD); distinguish between myocardial ischemia and myocardial infarction and list complications of each.
12. Compare the pathophysiology, manifestations, and treatment of right (con pulmonale) and left (congestive) side heart failure.

Chapters 32 & 33
1 & 2. Define the terms used in describing the signs and symptoms of pulmonary disease: dyspnea, orthopnea, paroxysmal nocturnal dyspnea, hyperpnea, Cheyne-Stokes respirations, hypoventilation, hyperventilation, hypercapnia, hypocapnia, coughing, hemoptysis, cyanosis, pain, clubbing, and sputum.
Characterize the following lung conditions that are caused by pulmonary disease or injury: pulmonary edema, aspiration, atelectasis, bronchiectasis, bronchiolitis, bronchiolitis obliterans, pneumothorax, pleural effusion, empyema, pleurisy, abscess, fibrosis, chest wall restriction, flail chest, toxic gas exposure, pneumoconiosis, and allergic alveolitis.
5 & 6. Define pneumonia and describe its causes, manifestations, and treatment. Describe the pathogenesis of tuberculosis.
Chapters 35 & 36
4, 5. Compare and contrast the signs, symptoms, and etiology of cystitis versus pyelonephritis.
6. Describe the types of glomerulonephritis, its features, manifestations, and treatment.
   Identify and explain the key features of nephrotic syndrome.

Chapter 38 & 39
2. Compare and contrast the various disorders of digestive motility: dysphagia, gastroesophageal reflux, hiatal hernia, pyloric obstruction, and intestinal obstruction.
10, 11. Compare the viral hepatitis types Describe hepatic cirrhosis compare and
   & 12. the various types of cirrhosis: alcoholic, biliary, and postnecrotic. Compare cholelithiasis to cholecystitis.