

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.
- 3 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, physical trauma and cellular accumulation damage.
- 5 Define necrosis.
- 6 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, pCO<sub>2</sub> and HCO<sub>3</sub><sup>-</sup> 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, and carrier.
- 6 Evaluate pedigree charts for the inheritance pattern of genetic diseases.
- 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, 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.

- 5 Describe the use of twin and adoptive studies in the analysis of multifactorial diseases.

#### Chapter 11

- 2 Cite the method for naming and classifying tumors; provide examples.

#### Chapter 12

- 1 Identify and describe factors encouraging and discouraging local spread of cancerous cells.
- 3 Describe 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 Identify and describe the common clinical manifestations of cancer: anemia, leukopenia, thrombocytopenia, infection, paraneoplastic syndromes, fatigue, and pain.

#### Chapter 13

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

#### Chapter 26

- 1 Define anemia.
- 2 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 27

- 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 28

- 1 Compare and contrast the two major causes of hemolytic disease of the newborn.
- 2 Describe the inheritance pattern, disease, process, and clinical manifestations of sickle cell disease.

## Chapter 6

- 3 Describe inflammation and contrast it with adaptive (acquired) immunity.

## Chapter 7

- 5 Compare and contrast active and passive immunity.
- 16 Characterize the cellular interactions within the immune response: actions of antigen-presenting cells,  $T_h$  cells,  $T_c$  cells,  $T_{reg}$  cells, B cells, plasma cells, and memory cells.

## Chapter 8

- 2 Compare and contrast the four hypersensitivities (I, II, III, and IV).
- 10 Describe the immune deficiency disorder, AIDS: signs, symptoms, pathophysiology, and laboratory testing.

## Chapter 15

- 3 Differentiate between acute and chronic pain.
- 4 Differentiate between the following pain descriptors: somatic pain, visceral pain, referred pain, phantom pain, neuralgias, hyperesthesias, myofascial pain syndromes, hemangiosarcoma and low back pain (LBP).

## Chapter 16

- 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.
- 9 Characterize cerebral hemodynamics and stages of increased intracranial pressure; describe herniation syndrome.

## Chapter 17

- 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.
- 9 Differentiate between bacterial and aseptic (viral) meningitis.

## Chapter 21

- 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, retinopathy, and infections.

## Chapter 10

- 2 Define stress, identify stressors, and characterize the stress response.

## Chapters 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 33

- 1 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, pleuritic pain, clubbing, and sputum.
- 2 Characterize the following lung conditions that are caused by pulmonary disease or injury: pulmonary edema, aspiration, atelectasis, bronchiectasis, bronchiolitis, pneumothorax, pleural effusion, empyema, pleurisy, abscess, fibrosis, chest wall restriction, flail chest, toxic gas exposure, pneumoconiosis, and allergic alveolitis.
- 5 Define pneumonia and describe its causes, manifestations, and treatment.
- 6 Describe the pathogenesis of tuberculosis.

## Chapters 36

- 3 Compare and contrast the signs, symptoms, and etiology of cystitis versus pyelonephritis.

- 4 Describe glomerulonephritis to include features, manifestations, and treatment.
- 5 Identify and explain the key features of nephrotic syndrome.

Chapter 39

- 2 Compare and contrast the various disorders of digestive motility: dysphagia, gastroesophageal reflux, hiatal hernia, pyloric obstruction, and intestinal obstruction.
- 6 Compare ulcerative colitis and Crohn's disease.
- 10 Compare the viral hepatitis types.
- 11 Describe hepatic cirrhosis and compare the various types of cirrhosis: alcoholic, biliary, and postnecrotic.
- 12 Compare cholelithiasis to cholecystitis.