**NR507 – Advanced Pathophysiology**

**Exam Study Guide – Midterm Study Guide**

**Exam Format:** Noncumulative

**Question Type:** Multiple Choice

**Number of Questions**: 100

**Time Allotted:** 120 minutes

**Testing Timeframe:** The midterm exam will only be available starting on Wednesday Week 4 at 12:01 am MT until Saturday Week 4 at 11:59 pm MT.

**1. Exam Coverage**

**Content Areas:**

* Week 1: Immunological Pathologies
* Week 2: Hematological and Cardiovascular Pathologies
* Week 3: Pulmonary Pathologies
* Week 4: Urinary System Pathologies

**2. Key Concepts to Study**

**Alterations in Immunity and Inflammation:**

* Pathophysiology of the four types of hypersensitivity reactions
* Prototype diseases that reflect each of the four types of hypersensitivity (i.e. Type IV-contact dermatitis) and signs and symptoms
* Treatment options for diseases under each hypersensitivity category
* Pathophysiology of Human Immunodeficiency Virus (HIV)
* Pathophysiology of Systemic Lupus Erythematosus (SLE)
* Diagnosis of SLE, including autoantibodies involved
* Clinical symptoms of SLE
* Treatment options for SLE including treatment during flare-ups
* Alloimmune phenomenon
* Differentiation between primary and secondary immunodeficiency including causes
* Common variable immunodeficiency

**Hematological Pathologies:**

* Pathophysiology of microcytic, macrocytic, and normocytic anemias
* Pathophysiology of anemia of chronic disease
* Pathophysiology of folate deficiency
* Pathophysiology of sickle cell anemia
* Red blood cell production and the role of erythropoietin
* Lab markers used in diagnosing anemia (e.g. iron deficiency and vitamin B-12 deficiency)
* Risk factors for iron deficiency anemia
* Risk factors for megaloblastic anemia
* Risk factors for hemolytic anemia
* Lab markers for normocytic anemia
* Treatment of beta-thalassemia major
* Implications for giving attenuated vaccines to compromised individuals

**Cardiovascular Pathologies:**

* Pathophysiology of coronary artery disease (CAD)
* Modifiable and nonmodifiable risk factors for CAD
* Differentiate between HDL and LDL cholesterol
* Total cholesterol ranges (normal vs. high)
* Primary and secondary causes of dyslipidemia
* Pathophysiology of right and left-sided heart failure
* Risk factors for heart failure
* Stages of heart failure according to the American College of Cardiology (ACC)/American Heart Association (AHA)
* Pharmacological management for Stage B and Stage C heart failure
* Purpose of the NYHA Functional Classification of Heart Failure
* Signs and symptoms of right and left-sided heart failure, including heart sounds
* Ejection fraction as a parameter for heart failure
* Pathophysiology of the heart valve disorders: aortic stenosis/regurgitation and mitral stenosis/regurgitation
* Murmur characteristics of heart valve disorders
* Risk factors for developing heart valve disorders

**Pulmonary Pathologies:**

* Mechanics of breathing
* Pathophysiology of obstructive and restrictive disorders
* Pulmonary function tests that represent an obstructive or restrictive disorder
* Pathophysiology, signs and symptoms and treatment of chronic bronchitis
* Pathophysiology, signs and symptoms and treatment of emphysema
* Differentiate between the types of emphysema
* Pathophysiology, signs and symptoms and treatment of asthma
* Pharmacological management of an asthma attack
* Client education for the asthma patient
* Pathophysiology of interstitial lung disease (ILD)
* Physical exam findings for ILD

Urinary System Pathologies:

* Pathophysiology of a urinary tract infection (UTI)
* Signs and symptoms of cystitis
* Complicated vs. uncomplicated UTIs
* Pathophysiology of acute pyelonephritis
* Diagnosis of acute pyelonephritis
* Pathophysiology of benign prostatic hypertrophy (BPH)
* Risk factors for BPH
* Treatment of BPH
* Pathophysiology of renal calculi
* Signs and symptoms of renal calculi
* Differentiate between functional and urge incontinence
* Risk factors for urge incontinence
* Pathophysiology of acute (prerenal, intrinsic, post-renal) and chronic renal failure, including stages
* eGFR values that represent the stages of CRF
* Risk factors for developing prerenal failure
* Risk factors for developing intrinsic renal failure
* Diagnosing chronic renal failure
* Treatment of acute kidney injury
* Uremic syndrome, including signs and symptoms by body systems
* Consequences of decreased renal production of Vitamin D
* Causes of dyslipidemia in individuals with chronic kidney disease
* Role of ACE inhibitors in managing chronic kidney disease
* Endocrine and cardiovascular complications as a result of chronic kidney disease
* Azotemia

**4. Recommended Resources**

Textbook Chapters: Rogers, J. L. (2023). *McCance & Huether's pathophysiology: The biologic basis for disease in adults and children*(9th ed.). Elsevier.

* Chapter 9: Alterations in Immunity & Inflammation, pp. 255-279
* Chapter 28: Structure and Function of the Hematologic System
* Chapter 29: Alterations of Hematologic Function
* Chapter 30: Alterations of Hematologic Function in Children
* Chapter 32: Alterations of Cardiovascular Function
* Chapter 34: Structure and Function of the Pulmonary System
* Chapter 35: Alterations in Pulmonary Function
* Chapter 37: Structure and Function of the Renal and Urinary System
* Chapter 38: Alterations of Renal and Urinary Tract Function, pp. 1242-1245
* Chapter 26: Alterations of the Male Reproductive System, pp. 842-844

Canvas Modules: Weeks 1-4

Edapt Modules: Weeks 1-4

Supplemental Resources (optional): Weekly Clinical Reasoning webinars

**6. Exam Logistics & Reminders**

* Platform: ExamSoft
* Open/Closed Book: Closed
* Proctoring Method: Assessment monitoring software with environmental scan
* Assessment Integrity: You are expected to comply with the Student Code of Conduct, the Chamberlain University Technical Requirements found in the Academic Catalog, all University Assessment Requirements during testing, the third-party assessment platform’s End User License Agreement, and use the most recent version of the third-party assessment platform’s software. Failure to adhere may result in academic integrity and/or professional conduct inquiry.

**7. Course Leader Notes/Advice**

* Topics and content on guides are intended to focus student attention when reading/studying, and some topics may be repeated in multiple chapters.
* Multiple test items are derived from the same topic areas to encourage deeper comprehension.
* Students must have a broad understanding of content and not simply memorize passages in textbooks.
* Exam questions represent various levels of cognitive learning. You are expected to analyze, synthesize, and evaluate patient scenarios to answer the questions.
* Utilize your time well by not rushing. You will have plenty of time to read each question for understanding before you select your final answer.