**NUR 6003 Advanced Pathophysiology**

**Review Questions**

**How to use these study questions:**

The tests in Advanced Pathophysiology were written using this document as a guide. If you want to know how to study for the test, as you listen to the lectures, try to answer these questions. Then think, “How could that question be worded as multiple choice?”

For example, Chapter 9, question 3 asks about the 3 types of arteries, their function, and structural differences. That could become a matching question, but only three types is little low for matching. So you could have a question that asks about the structure of one of the types, or the function of one of the types. You might be asked which one is most susceptible to a certain kind of injury.

Finally, not all of you will have the same test. Because there are at least 6 questions that could be asked about this review question (3 functions and 3 structures) there is a good chance that you might be asked about function of elastic arteries, while a classmate may be asked about structure of arterioles.

I assure you. EVERY SINGLE QUESTION IN THE ENTIRE COURSE COMES FROM THIS DOCUMENT!!!

**Chapter 1 Cell Injury**

1. What is homeostasis?  What happens if it is not maintained?
2. What are the possible results of cellular stress?
3. What are the main differences between normal cell death and pathological death?
4. What are the reversible cellular adaptations to injury?  Describe physiological and pathological examples for each one.
5. What are the additional responses to cellular injury?
6. Describe the necrotic process.
7. Describe apoptosis.
8. List the categories of injurious stimuli and an example of each.
9. What are the two hallmarks of irreversible cell injury?
10. What are the two major effects of reversible injury?
11. Describe the six patterns of necrosis
12. What factors determine the cellular response to injury its consequences?
13. Describe how each of the five major mechanisms of Cell injury work.
14. Why ischemia worse than hypoxia alone?
15. What are the mechanisms of ischemia-reperfusion injury?
16. Describe the process of apoptosis.
17. Give examples of physiologic and pathologic apoptosis.
18. What is the key enzyme cascade? What are the two major pathways of activation?
19. How do Killer T Cells cause apoptosis?
20. List examples of diseases that are caused by pathologic apoptosis.
21. What is autophagy?
22. Why do cellular accumulations occur?
23. What are the two main forms of calcification?  What is the major difference in their mechanisms?
24. What are the mechanisms of aging? How can aging be slowed?
25. Look at the inaugural presidential photos of George W. Bush, and Barack Obama compared to their four year later photos.

**Inflammation and Repair**

1. What is inflammation?  What are its major functions?
2. What is the major cellular difference between acute and chronic inflammation?
3. What are the five classic signs and symptoms of edema?
4. What is the purpose and mechanism of each sign or symptom?
5. What are the steps of inflammation?
6. List the major Vascular and Cellular components of inflammation.
7. What are the two major pathways of inflammation receptor activation
8. What is the function of IL-1.  What diseases are associated with it?
9. Describe the process of leukocyte infiltration into the inflamed area.
10. What is the role of adhesion molecules?
11. Describe the activation of leukocytes.
12. What is a Neutrophil Extracellular Trap?
13. What are the possible outcomes of Acute Inflammation?
14. Describe the function and characteristics of the major inflammatory mediators.
15. Describe the Complement cascade function and role.
16. What is the roll of Hageman's Factor (Factor XII)?
17. Describe Macrophage function.
18. What are the two major activation pathways and how do they influence the roles that macrophages play?
19. What is a granuloma?  What disease should always be investigated with any granuloma?
20. What is Acute Phase Reaction?  What are the major cytokines? What are its results?  What proteins are produced?
21. What leukocytosis patterns are associated with various infections?
22. What are the major symptoms associated with Acute Phase Reaction?
23. What are the two components of tissue repair?
24. What is the difference between embryonic and adult stem cells?
25. What is regenerative medicine?
26. List the major functions of growth factors
27. What are the roles and major components of ECM?
28. How many types of collagen are there?  What is the role of crosslinking?  What vitamin is necessary?
29. Describe the steps in scar formation.
30. What is granulation tissue?  What does it look like?
31. Describe Angiogenesis.
32. What factors affect tissue repair?
33. Contrast primary vs secondary intention wound healing.
34. What is fibrosis of parenchymal organs?

**Chapter 3 - Hemodynamic, Thromboembolism, Shock**

1. 1.What are the differences between hyperemia and congestion?
2. List and describe the four factors that affect edema
3. Describe how each factor causes edema when disturbed and some common conditions that cause the disturbances.
4. What is the difference between Transudate and Exudate in terms of composition and cause.
5. What are the implications for system, pulmonary, and cerebral edema?
6. List and define the manifestations of hemorrhage.
7. What are the implications for the location of the hemorrhage?
8. Describe the overall hemostatic process at the largest level possible.
9. What are the characteristics and products of normal endothelium that inhibit clotting.
10. How does injured or activated endothelium contribute to clotting?
11. Describe the functions and features of platelets.
12. Why is the fact that platelets are anucleate important for drug therapy?
13. How do platelets adhere to vessel walls?
14. What happens during platelet activation?
15. What happens during platelet aggregation?  How is aggregation different from activation?
16. How does a platelet plug stabilize?
17. Describe the balance between the Prostaglandins Prostacyclin (PGI2) and Thromoxane (TxA2).  How does aspirin affect the balance?
18. What is the ultimate purpose of the clotting cascade?  What role does Factor XIIIa play?
19. What is the role of calcium in the clotting cascade?  How is it a limiting factor?
20. What is the role of Vitamin K in clotting?
21. What is the difference between intrinsic and extrinsic pathway clotting?  What is the significance of the difference?
22. What is the difference between PT and PTT?
23. Where does tissue factor come from, and what is its role?
24. Articulate the sequence of events for extrinsic pathway clotting.
25. What are the roles that Thrombin plays in clotting?
26. How is clotting controlled?
27. What is a fibrin derived D-dimer?  What is its significance?
28. How are clots broken down?
29. Why is tPA less effective after two hours?
30. What is Virchow’s triad?  What does it influence?
31. How does endothelial dysfunction impact thrombosis formation?
32. What factors helps maintain healthy endothelium?  What factors injure endothelium?
33. How do these factors influence where clots are likely to form?
34. How does stasis and turbulent blood flow enhance thrombosis?  List some conditions commonly associated with sluggish/turbulent blood flow.
35. What causes primary hypercoagulability?  What is the clinical significance?
36. What conditions are associated with secondary hypercoagulability?
37. What are the major differences between arterial and venous thrombi?
38. What is heart valve vegetation?
39. What are the possible outcomes of a thrombus?
40. Describe DVTs and risk factors.
41. What is DIC?
42. What is Pulmonary embolism?  How does it occur?
43. How does the size of a pulmonary embolism influence the outcome?
44. What are systemic thromboemboli?  Where do 80% come from?
45. When is fat embolism most likely to occur?
46. What is amniotic fluid embolism?
47. What are the three major forms of air embolism?
48. List major causes of infarction and the factors that influence likelihood of infarction.
49. What is shock?  What are the major causes of shock?
50. Describe septic shock.
51. Describe the relationship of septic shock to SIRS
52. List the three stages of shock and the major characteristic of each stage.
53. 51. What form of shock are the stages most applicable to?

**Chapter 4 – Inflammation, Immunity, Immunodeficiency**

1. Describe the terms Antigen, Epitope, Hapten, Multivalent, Self.
2. What are the two forms of MHC and what is their role in terms of antigens and self.
3. Describe each of the types of cells and tissues of the immune system: T and B lymphocytes, Natural Killer cells, Antigen Presenting cells, Effector Cells, and Lymphoid tissues (primary/secondary).
4. Describe the characteristics and components of the Innate Immune Response.
5. Describe the capture and display of Microbial Antigens
6. Describe the two major forms of Cell mediated immunity and their major role in infection.
7. Describe Humoral Immunity and its function in infection.
8. Describe what happens to the immune system after an infection is cleared.
9. Describe each of the four hypersensitivity reactions and list some common diseases or conditions associated with each type.
10. What is tolerance and how does it prevent autoimmune reactions.
11. Describe each of the selected autoimmune diseases.
12. How does transplant rejection take place?  How is graft survival enhanced?
13. How do Hematopoeitic Stem Cell transplants differ from other transplants?
14. Describe the types of primary immune deficiencies and how particular deficiencies affect disease potential.
15. What are the major causes of secondary Immunodeficiency.
16. Describe AIDS, its etiology, pathogenesis, and manifestations.

**Chapter 5 - Cancer**

1. Define the following terms:
	1. Cancer
	2. Tumor
	3. Metaplasia
	4. Dysplasia
	5. Neoplasia
	6. Tissue invasion
	7. Metastasis
	8. Differentiation
	9. Anaplasia
2. What is the underlying mechanism of cancer?
3. Describe the four major differences between benign and malignant tumors.
4. List five factors that can increase the likelihood of a person developing cancer?
5. What four types of genes that influence cancer formation?
6. What is the relationship of oncogenes and proto-oncogenes?
7. List the seven types of genetic lesions that can influence cancer formation.
8. What is the difference between monoclonal and polyclonal tumors?  What are the implications for the cancer and treatment?
9. Describe the mechansims of the six classic hallmarks of cancer and the 2 newer ones?
10. List the three classes of carcinogens and representatives from each class.
11. Describe process of carcinogenesis.
12. What is telomerase and why is it important to cancers?
13. Describe the immune system’s defense against tumors.
14. Describe the system of staging carcinomas.
15. List five factors that influence manifestations of cancer.
16. What are the clinical manifestations of cancer?  What is paraneoplastic syndrome?
17. Describe the main mechanism of cachexia.
18. Describe methods of diagnosing or detecting tumors.
19. What are cancer markers? Name five cancer markers and cancers often associated with them.
20. How is genetic profiling of tumors creating a paradigm shift in the approach to classification and treatment of tumors?

**Chapter 6 Genetic, Pediatric**

1. Define the following terms:
	1. Congenital
	2. Hereditary
	3. Familial
	4. Gene
	5. Allele
	6. Trait
	7. Genotype
	8. Phenotype
2. How many protein coding genes are there in the human genome?  How much of the genome is identical among humans?
3. What are the three types of protein coding mutations?
4. What are Polymorphisms and what are the two major form of polymorphism?
5. What is epigenetics?  What are the two major mechanisms and how do they work?
6. What are the types and functions of non-coding RNA?
7. What is the hallmark of Mendelian inheritance?  What are the three major Mendelian patterns?
8. What is happening at a genetic/molecular level for each of the three forms of Mendelian inheritance?
9. Trace the percentage chances of various genotypes and phenotypes for each form of Mendelian inheritance.
10. Explain the concepts of penetrance and variable expressivity.  Provide genetic/molecular explanations for each (note there is more than one mechanism).
11. Provide a brief description of each inherited disease you are responsible for including:
	1. Underlying genetic defect and its Mendelian classification
	2. Physiological effect
	3. Manifestations of disease.
12. What characterizes complex multigenic (multifactorial) disorders?.  Give two examples.
13. What is a karyotype?  What are the major abnormalities of karyotype?
14. Describe the major diseases/disorders associated with an abnormal karyotype.
15. What is a lethal allele?

Chapter 6b

1. List and define the major forms of malformation
2. What does the term teratogenic mean?  List common genetic and environmental teratogens.
3. What are the two major routes of perinatal infections?  List some common Infectious agents for each route.
4. What factors lead to fetal growth restriction?
5. What is SIDS? What seem to be the most common risk factors?
6. What are the major differences between pediatric and adult tumors?
7. Briefly describe the most common benign and malignant tumors of children and infants.
8. Describe the major types of molecular screening tools for Mendelian disorders and Complex Multigenic disorders. What are the main limitations of each one?
9. What are the indications for Genetic Analysis?

**Chapter 7 – Environmental, Toxic, Nutritional**

1. Although Carbon Dioxide gets all the press, what two mechanisms of climate change/environmental damage may be much more dangerous?
2. How does the P-450 enzyme system contribute to toxic processes?
3. List the major environmental pollutants and briefly describe their effects.
4. Describe the health effects of tobacco consumption.
5. What additional habit vastly increases the toxicity of tobacco?
6. Describe the health effects of alcohol consumption.
7. List the major therapeutic drugs associated with toxic effects and their effects.
8. List the major non-therapeutic drugs associated with toxic effects and their effects.
9. List and define the major kinds of mechanical trauma.
10. Describe the types of burns and the pathological consequences of burns.
11. List and describe the types of hyperthermia.
12. Describe the effects of hypothermia
13. What are the two major problems associated with electric shock?  What is the problem associated with grasping live AC wires?
14. What are the three –genic effects of ionizing radiation?  What factors influence the degree of damage?
15. What are the major effects of ionizing radiation physiologically?
16. What factors influence Malnutrition?
17. Compare and contrast Marasmus with Kwashiorkor including etiology, pathophysiology, and manifestations.
18. Compare and contrast Anorexia Nervosa and Bulimia
19. List the major vitamin deficiencies and their effects.
20. Describe the hormonal interplay that contributes to obesity.
21. Describe the clinical effects of obesity.

**Chapter 8 – Infectious Disease**

1. What are the 2 infectious causes of death that are among the top ten causes of mortality in the United States?
2. List the major classes of infectious agents and some of the major diseases caused by each one.
3. What is does the term obligate intracellular parasite mean?
4. Where is the best location within a lesion for identifying organisms?
5. How can one tell an acute infection from a chronic/recurrent infection?
6. What is the major advantage of molecular tests such as PCR and nucleic acid amplification tests over traditional culture?
7. Describe the symptoms of small pox.  (Although there are no known cases, every government seems to have a stash of it “just in case” we need it, so it doesn’t hurt to be familiar with the symptoms.)
8. Describe the major routes of microbial invasion, the defenses that must be overcome organisms/diseases associated with those routes.
9. Describe the spread of organisms throughout the body.
10. Describe the mechanisms by which organisms can be shed from the body.
11. Describe the major ways in which organisms cause disease.
12. Describe the major mechanisms organisms use to evade the immune system.
13. Describe the spectrum of inflammatory responses to infection.

**Chapter 9 – Blood Vessels**

1. What are the two principal mechanisms of vascular disease development?
2. Describe the structure of blood vessels in general, and then in particular for arteries, veins and capillaries?
3. What are the three types of arteries, their major function, and structural differences?
4. Describe the functions of endothelial cells and smooth muscle cells.  How can one test for endothelial function?
5. Describe the normal regulation of blood pressure including neurological and hormonal interactions.
6. Describe the etiology and mechanisms of hypertension.
7. Describe the two mechanisms of isolated systolic hypertension.
8. Describe atherosclerosis and the major risk factors and additional risk factors for it.
9. List the major steps in atherosclerosis formation.  What are the two underlying mechanisms that drive atherosclerosis?
10. What are the mechanisms and results of acute atherosclerotic plaque change?
11. Describe aneurysms and dissections in general and Abdominal Aortic Aneurysm in particular.
12. What are the two major mechanisms of vasculitis?  What test is necessary for definitive diagnosis of vasculitis?
13. Describe Raynaud Syndrome and Myocardial Vessel Vasospasm
14. Describe Varicose Veins
15. Describe DVTs
16. Describe Lymphangitis and Lymphedema
17. Describe list the major Vascular tumors
18. Describe the three major vascular interventions: angioplasty, stent, replacement.

**Chapter 10 - Heart**

1. List the six mechanisms of a “broken” heart.
2. What is the definition of CHF?  What are the two major forms?  What non-heart factors can directly cause or contribute to CHF?
3. What is the difference between forward failure and backwards failure?
4. What compensatory mechanisms occur during heart failure?  How do they ultimately cause decompensation?
5. Describe the major morphology and  clinical features of left and right sided heart failure.
6. What is the most common congenital heart defect?  WHat is the most common congenital heart defect diagnosed during adulthood?  Describe the heart defects and obstructions mentioned in the lecture.
7. What is the difference between right to left and left to right shunts: physiologically and manifestations?
8. What cause 90% of Ischemic Heart Disease?  List the other major causes.
9. Define each of the four cardiac syndromes.
10. Describe the pathogenesis of Ischemic Heart Disease, including the factors that contribute to the development and the consequences of atherosclerosis.
11. Describe the three types of angina pectoris.
12. What is the difference between angina pectoris and myocardial infarction (MI)?  How can you tell clinically?
13. Describe the pathogenesis of MI including reversible/irreversible changes, major cause of death acutely, patterns of infarction (both distribution and mural portion), and reperfusion injury.
14. Describe the clinical features of MI including prodromal symptoms and its major consequences.
15. Describe the major dysrhythmias and sudden cardiac death.
16. Describe left and right sided hypertensive heart disease.
17. Describe the major valvular diseases.
18. Describe the major cardiomyopathies.
19. Describe the two major forms of pericardial disease.
20. Describe the major long term complication of cardiac transplant.

**Chapter 11 - Blood**

1. What is anemia?  How is it measured?  What are the general symptoms?
2. What other lab tests are available for specific situations?
3. What is the immediate concern with acute blood loss (hemorrhagic) anemia?
4. What are the two major sites or blood cell destruction?  What is the major cause of extrinsic destruction?  How can you tell the difference?  What complication is associated with intrinsic destruction?
5. List the major causes of hemolytic anemia.  What complication can cause crises in patients with hemolytic anemia?
6. Describe the pathogenesis, morphology, and clinical course of sickle cell anemia. What kinds of stimuli typically cause sickling?  What are the splenic implications of sickle cell anemia?  What is the major treatments for sickle cell anemia?
7. Describe thalassemia’s genetic cause.  What is the implication for phenotypic disease?  What is the long term effect of thalassemia?
8. What is the underlying cause and trigger of G6PD deficiency anemia?
9. What lab test is used to detect immune action against red blood cells?
10. Describe the pathophysiology of malaria, particularly vector, lifecycle, and how lifecycle relates to symptoms.  What makes P. falciparum more dangerous than other malarias?
11. Describe the normal iron cycle and what each iron lab test is used to assess.  Describe the major causes of iron deficiency and the anemia’s chronic course.
12. Describe the underlying mechanism of anemia of chronic disease. Describe the two megaloblastic anemias. (Note: Pernicious anemia technically only refers to B12 deficiency as a result intrinsic factor problems).  Describe aplastic anemia’s two forms.
13. Describe the two forms of polycythemia.
14. Describe leukopenia and reactive leukocytosis including common causes of leukocytosis patterns.  Describe mononucleosis.  What differential diagnosis should always accompany lymphadenitis?
15. List the leukemias and their major features.  What is the difference between Hodgkins and Non-Hodgkins Lymphomas?  Describe myeloma.  What complications can occur from excess protein?  What is polycythemia vera?
16. What are the major test for coagulation?   What can cause bleeding in the presence of normal coagulation tests?  What bleeding patterns are associated with platelet and clotting factor defects?
17. Describe DIC.
18. Describe the Thrombocytopenias and Hemolytic Uremic Syndrome.  How are they treated?
19. What is the underlying problem in vonWillebrand disease?
20. What is the underlying problem and manifestation of Hemophilia A and B.

**Chapter 12 - Lung**

1. Describe the three types of atelectasis.
2. What are the three primary manifestations of Acute Lung Injury.  Describe the underlying mechanism of ARDS.  What do patients usually die from?  What is a hyaline membrane, and how does it contribute to hypoxemia?
3. Describe the pathophysiology of the major obstructive lung diseases.  (table 12-2 might be a good starting place.  Include the mechanism (not listed) for C.B., emphysema, and asthma
4. What is bronchiectasis?
5. Describe the commonalities of chronic interstitial diseases.  What is the difference between Fibrosing and non-Fibrosing diseases?  What is the major exacerbating factor to all pneumoconiosis?  What do patients with sarcoidosis typically seek healthcare for?
6. What are the major risk factors for Pulmonary embolism?  How does the size of embolus affect the outcome?  What are the major clinical outcomes of pulmonary embolism?
7. Describe the pathophysiology of pulmonary hypertension.  What are three major secondary causes?
8. What are the symptoms of Diffuse Alveolar Hemorrhage Syndrome?  Describe Goodpasture’s Syndrome; what are the treatments for it?
9. Describe the normal defenses of the lung.
10. Describe the general pathophysiology of the pneumonia.  What two habits predispose patients to pneumonia?  Why is RML auscultation so important?
11. What causative agents are typical for CAP, HAP, and immunosuppressed pneumonia? Describe the features of common pneumonia infectious agents.  What are the four major complications of strep pneumo pneumonia?
12. What defines atypical pneumonia? What causes it?
13. Describe the pathophysiology of influenza infection.  What is the difference between antigenic drift and shift?
14. Describe the pathophysiology of tuberculosis.  What makes it so insidious?
15. Describe the pathophysiology of Lung Carcinomas.
16. Describe the pathophysiology of pleural lesions.
17. Describe the pathophysiology of upper respiratory infections.

**Chapter 13 - Kidney**

1. Describe the normal functioning of the kidney. Sketch a nephron.  How much sodium is reabsorbed at each segment?  What is the control mechanism of control of sodium resorption in the final segment?
2. What is azotemia?  What are its three major classes of causes?  What is symptomatic azotemia called?
3. What are the characteristics of the major renal syndromes?
4. Describe the glomerulus.  What is its ultimate purpose?  What are the major mechanisms of glomerular injury?
5. What is the threshold for nephron loss where ESRD is inevitable?  What is the mechanism?
6. Describe the major features of the representative glomerular diseases.
7. Describe the two major forms of Tubulointerstitial Nephritis.
8. Describe the pathophysiology of acute tubular injury.
9. Describe the pathophysiology of renal vascular diseases.
10. Describe the pathophysiology of chronic kidney disease
11. Describe the pathophysiology of cystic kidney diseases
12. Describe the pathophysiology of kidney stones and hydronephrosis.
13. What are the most common manifestations of kidney tumors?

**Chapter 14 - GI Tract**

1. Describe the inflammatory and proliferative disorders of the mouth.
2. Describe the normal function and obstruction of the esophagus.
3. Describe esophageal lacerations and esophagitis.
4. Describe the pathophysiology of GERD and its role in esophageal cancer.
5. Describe the pathophysiology of Acute and Chronic Gastritis
6. Describe the role of H. pylori in gastritis and peptic ulcers. How can it be diagnosed?
7. Describe the pathophysiology of peptic ulcer disease.  What are the major risk factors?  What is the causative mechanism for each one?
8. Describe the pathophysiology of gastric adenocarcinoma.
9. Describe the pathophysiology of intestinal obstruction.
10. Describe the symptoms of ischemic bowel disease.
11. Describe the pathophysiology of hemorrhoids.
12. Describe the pathophysiology of selected Malabsorptive and Infectious diarrhea.
13. Describe the pathophysiology of diverticulitis.
14. Describe the pathophysiology of Crohn Disease and Ulcerative colitis, highlighting their similarities and differences.

**Chapter 15 - Liver and Gall Bladder**

1. List the major lab tests of hepatic function and damage, and what each test signifies.
2. What are the signs and symptoms of liver failure?  What causes each one?
3. Describe the pathophysiology of the clinical liver syndromes and associated conditions.
4. Describe the pathophysiology of
5. Summarize the commonalities and differences among the various viral hepatitis particularly regarding route, manifestations, chronicity, and prevention.
6. Describe the pathophysiology of alcoholic liver disease.
7. Describe the pathophysiology of nonalcoholic fatty liver disease.
8. Describe the three metabolic liver diseases.
9. Describe the pathophysiology of liver cancer.
10. Describe the pathophysiology of cholelithisasis and cholecystitis.

**Chapter 16 - Pancreas**

1. Describe the normal functioning of the pancreas and protective measures the body uses to prevent autodigestion of the pancreas.
2. Describe the major malformations of the pancreas.
3. What changes occur in cystic fibrosis?
4. What is the role of trypsin in the pancreas?
5. Describe the pathophysiology acute pancreatitis.  What are the major risk factors?
6. What systemic complications can occur as a result of pancreatitis?
7. Describe the pathophysiology of chronic pancreatitis.  What are the major risk factors?  What are the two major differences between acute and chronic pancreatitis?
8. What is the relationship between pancreatitis and pancreatic cancer?
9. Describe the pathophysiology of pancreatic cancer.  What are the major risk factors?

**Chapter 17 - Urinary and Male Genital**

1. Describe the common malformations, inflammatory lesions and neoplasms of the penis.
2. What is the historical importance of scrotal cancers?  What is the role of transluminescence in evaluating scrotal masses?
3. Describe the pathophysiology of cryptorchidism.
4. Describe the common inflammatory, vascular disturbances, and neoplasms of the testes.  Why is radical orchiectomy the preferred treatment of testicular
5. Describe the pathophysiology of prostatitis.
6. Describe the pathophysiology of benign prostatic hyperplasia..
7. Describe the pathophysiology of prostate cancer.  Why is prostate cancer screening controversial?
8. Describe the pathophysiology of bladder cancer.
9. Describe the pathophysiology of cystitis.
10. Describe the transmission and major clinical features of the covered sexually transmitted infections.

**Chapter 18 Female GU and breast**

1. What are the main causes and symptoms of vulvitis?
2. What is the difference between Lichen Sclerosus and Lichen SImplex Chronicus? What is the major concern for both?
3. Describe the role of HPV in benign and malignant tumors of the external and internal female genitalia.  What are the risk factors of HPV?
4. List the three major causes of vaginitis/vaginosis.
5. Describe the pathophysiology of cervicitis.
6. Describe the pathophysiology of cervical carcinoma.
7. What does CIN refer to?  What are the implications of high and low grade?  How are they used to prevent cervical cancer?
8. Describe the pathophysiology of endometritis.
9. Describe the pathophysiology of endometriosis.
10. List the likely causes of abnormal uterine bleeding at each age group.
11. Describe the major uterine cancers.
12. Describe Salpingitis.
13. Describe cystic conditions of the ovaries.
14. Describe ovarian tumors.  What is the major screening tool?  What are its limitations?
15. Describe the two routes of placental inflammations.
16. Describe ectopic pregnancy.
17. Describe pre-eclampsia.
18. Describe mastitis.
19. Describe fibrocystic breast changes.
20. Describe the pathophysiology of fibroadenoma and breast cancer.  Describe the genetic factors associated with breast cancer.  What is the difference between ductal and lobar carcinoma in situ?

**Chapter 19 - Endocrine**

1. List the major hormones of the pituitary gland and their function.
2. What are the two main ways the pituitary adenomas cause symptoms?
3. Describe the effects of the three highlighted hyperpituitarism adenomas.
4. Describe the two disorders associated with the posterior pituitary
5. Describe the normal functioning of thyroid hormone
6. Describe the pathophysiology and major causes of thyroid dysfunction.
7. Describe the pathophysiology of hyperparathyroidism and major causes of hypercalcemia.
8. Describe the pathophysiology of Diabetes Mellitus.
9. What are the risk factors and mechanisms of insulin resistance?
10. Describe the pathophysiology of the selected adrenal disorders.

**Chapter 20 - Bones and Joints**

1. Describe the pathophysiology of osteoporosis
2. Describe the pathophysiology of osteonecrosis
3. Describe the pathophysiology of osteoarthritis
4. Describe the pathophysiology of rheumatoid arthritis
5. Describe the pathophysiology of gouty arthritis
6. What are the differences among the three types of arthritis?

**Chapter 21 Peripheral Nerves and Muscles**

1. Describe the normal physiology of a neuron impulse
2. Describe the patterns of peripheral nerve injury
3. Describe the pathophysiology of Guillain Barre
4. Review the pathophysiology of diabetic peripheral neuropathy
5. Describe the pathophysiology of neuromuscular junctions and Myasthenia gravis.
6. Describe the pathophysiology of muscular Duchenne and Becker muscular dystrophy
7. List the toxic myopathies and their causes.

**Chapter 22 - Central Nervous System**

1. Describe Cerebral edema and Hydrocephalus
2. Describe the pathophysiology of acute cerebrovascular disease?
3. What is the most common form of chronic cerebral ischemia?
4. Describe the factors that determine the symptoms of Traumatic Parenchymal injuries.
5. Describe the pathophysiology of meningitis
6. Describe the pathophysiology of selected parenchymal infections
7. Describe the pathophysiology of Prion diseases
8. Describe the pathophysiology of Multiple Sclerosis
9. Describe the pathophysiology of selected Central nervous Metabolic and Nutritional diseases
10. Describe the pathophysiology of Alzheimer’s disease
11. Describe the pathophysiology of Parkinson Disease
12. Describe the pathophysiology of Huntington's Disease
13. Describe the pathophysiology of Amyotrophic Lateral Sclerosis
14. Describe the general features of CNS tumors.

**Chapter 23 - Skin**

1. Describe the normal structure and physiology of skin.
2. Define the terms for macroscopic lesions
3. Describe the inflammatory dermatoses
4. Describe the infectious dermatoses
5. Describe the benign and malignant skin tumors