MEDICINE

RENAI

1a. What is the differential for a patient who presents with flank pain?

b. What procedures do you follow to work up a patient with flank pain? (labs, imaging)

2. Name several causes for hematuria.

3. Compare and contrast the clinical signs of nephrotic and nephritic syndromes.

4. Discuss the etiologies and potential treatments of prerenal, intrinsic, and postrenal insufficiency.

5. Describe the pathological changes observed with the following general renal conditions. 
   proliferative -
   membranous -
   membranoproliferative -

6a. What is the clinical significance of the serum BUN/Creatinine ratio?

b. List some conditions that cause an increased serum BUN/Creatinine ratio.

7. What pathological changes occur in diabetic nephropathy? What is the treatment?

8. Compare and contrast adult polycystic disease to infantile polycystic disease.

9. Make a table of the important diagnostic lab findings & management of acute tubular necrosis vs pyelonephritis vs papillary necrosis.

10. What is the most common cause of:
    a. kidney tumor in adults -
    b. kidney tumor in children -
    c. urinary tract tumor -
    d. glomerulonephritis -
    e. nephrotic syndrome -
RENAL (cont.)

11a. Describe the presentation, w/u, and treatment of renal calculi.

  b. Associate the composition and shape of crystals with their associated problems.

12. Fill in the following table: 

<table>
<thead>
<tr>
<th>Nephrotic/nephritic</th>
<th>Major Histopath</th>
<th>Management</th>
<th>Clinical Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-strep glomerulonephritis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal change disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membranous glomerulonephritis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membranoproliferative glomerulonephritis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodpastures disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systemic lupus erythematosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetic nephropathy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amyloidosis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13a. What is the pathological malfunction and clinical lab hallmark in renal tubular acidosis?

  b. What is the pathological malfunction and urine lab hallmark in Fanconi’s Syndrome?

14a. Name 3 important risk factors to consider before giving contrast dye in IVP.

  b. How do you calculate Creatinine clearance & how do you use the value?

15. Name 3 common causes of interstitial nephritis.

16. Name 5 important systemic complications that can result from renal failure with uremia.

17. How would you differentiate between Nephrogenic DI, Central DI, and Psychogenic polydipsia?
INFECTIONOUS DISEASE

1a. Give symptoms and treatment for acute uncomplicated UTI's.

b. Give symptoms and treatment for complicated UTI.

2. Discuss the appropriate management for a diabetic foot infection.

3. List and discuss treatment of the top 5 opportunistic infections that occur in the AIDS patient.

4. Describe the pathophysiology of TB and its recommended treatment.

5. What is the clinical presentation of tuberculosis and what tests would you order to confirm TB in a routine work-up? What can give a false negative PPD?

6. How is amyloidosis related to TB? What is the diagnostic test for amyloidosis?

7. Give the major clinical features, incubation time, and treatment of food poisoning with:
   C. Perfringens - Salmonella -
   S. Aureus - Shigella -

8. What organisms comes to mind when your patient tells you:
   a. he ate at a Chinese restaurant a few days ago.
   b. she ate at a seafood restaurant recently.

9. Describe the pathophysiology of S. Typhi.

10. What is the most common cause of nosocomial diarrhea? diagnose? Tx?
11. List the most likely organisms causing pneumonia:
   T-cell deficient -
   following splenectomy -
   hospital acquired /non-immune related -
   community acquired /non-immune related -

12. Make a table of these STD's that cause lesions -- use the following headings:

<table>
<thead>
<tr>
<th>STD</th>
<th>Organism</th>
<th>Description of Primary Lesion</th>
<th>D_{x}/R_{x}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herpes Genitalis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syphilis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chancroid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lymphogranuloma Venereum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condyloma</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Give the epidemiology, major clinical features, and treatment for the following viral causes of diarrhea:
   Rota -
   Enteric (adenovirus) -
   Norwalk -

14. How would you diagnose and treat a Giardia infection? Amebiasis?

15. Compare and contrast the important characteristics and treatment of cellulitis vs erysipelas.

16. Discuss the treatment for animal vs human bite infection and preventive measures for each.
HEMATOLOGY/ONCOLOGY

1. Describe the work up for a patient with anemia.

2. Describe splenic sequestration crisis. How would you diagnose and treat it?

3. Which anemias are associated with:
   - normal mcv - 
   - increased mcv -
   - decreased mcv -

4. List the anemias caused by increased destruction of cells vs decreased production of cells.

5. Fill in the following table with the appropriate arrows and explain why.

<table>
<thead>
<tr>
<th>ABNORMALITY</th>
<th>FERRITIN</th>
<th>SERUM Fe</th>
<th>TIBC</th>
<th>RDW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron deficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sideroblastic anemia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thalassemia</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

6. Describe the management of a patient with increased PTT and bleeding time.

7. Fill in the matching disease:
   - round dense cells lacking central pallor -
   - target cells -
   - schistocytes -

8. Name some broad categories that result in DIC and what the abnormal lab findings would be.
9. Fill in the following table with the appropriate arrows:

<table>
<thead>
<tr>
<th>INHERITED</th>
<th>FACTOR DEFICIENCY</th>
<th>INHERITANCE PATTERN</th>
<th>PT</th>
<th>PTT</th>
<th>PLATELET</th>
<th>BT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemophilia A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemophilia B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Von Willibrands</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

10. What are the acute treatment options for VWF deficiency?

11. Compare and contrast ITP and TTP (include treatment options).

12. Compare and contrast CLL and CML.

13. Compare and contrast ALL and AML.

14. Describe the important clinical features and labs observed with multiple myeloma.

15. Draw and explain antineoplastic man.

16. Name 3 cancers that can cause hypercalcemia.

17. List several causes (5 or less) for decreased platelet formation vs increased platelet destruction.

18. Describe the clinical symptoms and work-up of Hogkins lymphoma.
RESPIRATION

1. Classify the different types of emboli to the lung and list risk factors for each.

2a. Name 2 hypoxic conditions not related to a change in A-a gradient.
   b. Name 3 hypoxic conditions with an increased A-a gradient.
   c. On 2 L of oxygen by nasal cannula:
      7.46 | 32 | 85 | 96% | 21 comes from the lab. Calculate the A-a gradient.

3a. Describe the difference between ABG and puls ox measurements vs co oximetry.
   b. With CO poisoning, what is the best initial test to order to assess its extent?

4. List and describe the four main types of lung cancer (include risk factors, complications, Tx).

5. Describe SVC syndrome and how would it occur?

6. Fill in the appropriate arrows in the following table:
   \[
   \begin{array}{|c|c|c|c|c|}
   \hline
   \text{TEST} & \text{Asthma} & \text{Chronic Bronch.} & \text{Emphysema} & \text{Restrictive} \\
   \hline
   \text{FEV}1 & & & & \\
   \text{FEV}1/FVC & & & & \\
   \text{TLC} & & & & \\
   \text{Diff Capacity} & & & & \\
   \text{Bronchodilator response} & & & & \\
   \hline
   \end{array}
   \]

7. Give the best tests and the results you would expect with asthma vs chronic bronchitis. How would you treat them?

8. Explain the pathophysiology and etiology of emphysema.

9a. What is the etiology of 3 common restrictive lung diseases?
   b. How is restrictive lung disease diagnosed and treated?
RESPIRATION (cont.)

10. Explain the pathology of Wegener's Granulomatosis and of Goodpastures Synd.

11. What is the common presentation of sarcoidosis and what is the management?

12. Compare and contrast a patient presenting with a pleural effusion vs pulmonary edema.

13. Discuss 3 complications of PEEP.

14. Name and discuss etiology and treatment of the following general causes of hypoxia: shunt -
    V/Q mismatch -
    hypoventilation -
    diffusion problems -

15. Discuss the important clinical features of Cystic Fibrosis.

16. Compare and contrast typical history of Coccidioido -, Blasto -, and Histo -.

17. Describe the work-up of a solitary nodule in the lung.

18. Describe the clinical presentation of typical vs atypical pneumonia. Give 2 or 3 examples of infectious agents for each type along with their appropriate treatment.

19. How does TB present? What is the recommended treatment regimen?

20a. Discuss the major causes for ARDS and its treatment.
    b. Name 5 causes for ARDS.

21. Discuss the presentation, diagnosis, and treatment of obstructive sleep apnea.
1a. List 11 symptoms associated with SLE. (SOAP BRAIN MD)

b. What is the most sensitive and specific test for SLE?

c. What is the treatment of SLE with increasing renal involvement?

d. What is the treatment of uncomplicated SLE?

e. Name 3 drugs that can induce SLE.

2. Compare ankylosing spondylitis (AS) to Reiters.

3. Compare the work-up, tx, and characteristics of rheumatoid arthritis vs osteoarthritis.

4. Name the important adverse effects of steroid treatment?

5. What signs and symptoms would you look for and what tests would you do to differentiate between scleroderma, Sjogren's, and CREST?

6. The following ANA patterns are associated with what diseases:
   homogeneous (diffuse) -
   rim (peripheral) -
   speckled -
   anticentromere -
RHEUMATOLOGY (cont.)

7. Match the following tests with their disease:
   (-) birefringent yellow crystals__c__     a. amyloidosis
   Wright's stain__f__                      b. Whipple's disease
   blue dull looking crystals__e__         c. gout
   Prussian Blue__d__                     d. hemochromatosis
   Periodic acid-Schiff__b__               e. pseudogout
   Congo Red__a__                         f. SLE

8a. What is the ddx, and treatment for each possibility, in a patient with a single inflammed joint?

b. Compare and contrast risk factors, diagnosis, and treatment of gout vs pseudogout.

9. What is the clinical picture of hemochromatosis?

10. Name 4 possible conditions/disorders to investigate when working up a patient with Carpal tunnel syndrome.


12. Compare the clinical symptoms, work-up and treatment of dermatomyositis vs polymyositis.

13. Compare polymyalgia rheumatica vs temporal arteritis.

14. Discuss the 3 types of juvenile chronic arthritis: systemic, polyarticular, and pauciarticular.
CARDIOLOGY

1a. Name 5 factors that could precipitate CHF.

b. Name 4 cheap tests to diagnose CHF.

c. Discuss the rationale for CHF treatment options.

d. What is the initial desired effect of morphine when given to a patient with CHF?

2. Discuss the typical presentation and treatment of IHSS (hypertrophic cardiomyopathy).

3. Compare and contrast the presentation, diagnosis, and management of pericarditis vs MI.

4. Discuss 3 different types of angina and their respective treatments.

5a. What are the five major risk factors for an MI?

b. What's the most common cause of death following an MI?

c. What enzymes are elevated following an MI? Describe the time-frame of their appearance.

d. Discuss the major treatment options post MI.

6. List the most common causes of right heart and left heart failure.

7. Give the pathophysiology of the following EKG findings:
   - T wave inversion -
   - shortened PR interval -
   - ST elevation -
   - increased size of the Q wave -
   - ST depression -
   - prolonged QT interval -
   - widened QRS complex -
   - peaked T waves -
8. Describe the presentation of a patient progressing from pericarditis with a mild effusion to cardiac tamponade. What is the management for this situation?

9. Describe the pathophysiology of Wolf-Parkinson-White syndrome. What is the appropriate therapy? What drug(s) is/are contraindicated and why?

10a. Discuss the three types of heart block, pathology and Tx.
     b. Give 3 indications for a pacemaker.

11. What are the clinical characteristics and treatment of Marfan's syndrome?

12. Give the etiology, and major signs & symptoms of the following:
    mitral regurgitation -
    aortic regurgitation -
    aortic stenosis -
    mitral stenosis -
    Austin-Flint murmur -

13. What is the clinical significance of S3 and S4?

14a. What is the mechanism of action for digitalis?

     b. Compare and contrast digitoxin and digoxin.

     c. Discuss some possible causes of digitalis toxicity.
CARDIOLOGY (cont.)

15a. What is pulsus alternans and when does it show up?
    b. What is electrical alternans and when does it show up?
    c. What is pulsus paradoxicus and when does it show up?
    d. What is torsade de pointe and when does it show up?
    e. What is Kussmal’s sign and when does it show up?

16. What is the treatment for:
    Atrial Fibrillation -
    Atrial flutter -
    Paroxysmal Atrial Tachycardia -
    Ventricular fibrillation -
    PVC’s -

17. Discuss the management of hypercholesterolemia.

18. Compare and contrast the mechanism of action of niphedipine, diltiazem, and verapamil.


GI DISORDERS

1. Compare and contrast the pathophysiology, symptoms, and treatment for ulcerative colitis with Crohn's disease. (GIFTS)

2a. What are the 3 main causes of upper GI bleed?
b. What are the 3 main causes of lower GI bleed?

3. Give the common etiologies of small bowel and large bowel obstruction.

4. Discuss the characteristics and treatment of diverticulitis.

5a. Describe Duke's classification systems and give their uses.
b. List the major risk factors, symptoms and treatment for CA of the colon.

6a. Discuss the 3 major causes, physical findings, and complications of cirrhosis.
b. Name 5 drugs that can cause cirrhosis.

7. Describe the etiology, symptoms, and work-up for cholestasis.

8. Fill in the appropriate arrows and explain what happens with pre-hepatic, hepatic, and post-hepatic jaundice:

Conjugated bilirubin (direct)
Unconj bilirubin (indirect)
Urine UBG
Example

HEPATOCELLULAR BILE DUCT
HEMOLYSIS DISEASE OBSTRUCTION

9. What is Charcot's triad?
What is Reynold's pentad?
GI DISORDERS (cont.)

10. Fill in the following table with a + or - where appropriate: (or draw the immune Hep B graph)

<table>
<thead>
<tr>
<th>DISEASE STATE</th>
<th>HEP BsAg</th>
<th>anti-HEP BcIgM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute hepatitis B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early acute hepatitis B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or Chronic hepatitis infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute or recent infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with hepatitis B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Make a table comparing transmission, incubation time, diagnostic serology, prophylaxis, and treatment of Hepatitis A, B, and C.


13. Name the clinical hallmarks of acute pancreatitis. (Ranson's criteria)

14. What are the precipitating factors for hepatic encephalopathy? (GUS KIC)

15. Compare and contrast the presentation and labs of acute alcoholic pancreatitis vs gallstone pancreatitis.

16. How would you manage a patient with achalasia?

17. Discuss the differential for dysphagia.

18. Problems with what organs would result in epigastric pain?
VASCULAR/LYMPHATIC DISORDERS

1. Name several common causes of 2° hypertension, discuss their etiology and treatment.

2. What constitutes a 'hypertensive crisis'? How do you treat it?

3. Describe the grading of hypertensive retinopathy.

4. Name and describe the most common vasculidites due to:
   large vessels -
   medium vessels -
   small vessels -

5. Compare and contrast abdominal vs thoracic aortic aneurysms and possible treatments.

6. Describe the clinical features of polyaryteritis nodosa.

7. Discuss the clinical presentation, staging, and treatment of Hodgkin's Disease.

8. Name the common causes of lymphadenopathy.


10. Discuss the management of essential hypertension in adults. How would this differ in children?

11. Compare and contrast the clinical presentation and labs of pheochromocytoma vs hyperthyroidism.
CRITICAL CARE ISSUES

SHOCK:

1. Draw the characteristic wave forms seen as a Swan-Gantz catheter is advanced. What are some possible complications of using a SG catheter?

2a. Describe conditions that result in the following shock states:
   - cardiogenic -
   - hypovolemic -
   - distributive -
   - obstructive -

b. For each of the above states, what would be the effect on SG data?

3. How would a case of toxic shock syndrome present and how would you treat it?

4. What is meant by cold shock and warm shock and how would you treat them?

COMA:

5. Describe the different types of breathing seen in a comatose patient and where you expect the lesion would be found.

6. Describe the different types of pupillary responses seen in comatose patients and where you expect the lesion would be found.

7. What is the difference between corticate and decerebrate posturing?

8. Describe the cold caloric test.

BURNS:

9. What are the differences in damage and in treatment of 1st, 2nd, and 3rd degree burns?

10. What is the Parkland formula? Give the standard percentages of body parts (for burn patients) in adults and children.

11. What is the order of conduction in tissues for electrical shock injury?

TOXICOLOGY:

12. Describe the general management for an unknown adult poisoning case in the ER.

NEUROLOGY

1. Compare and contrast the clinical characteristics of an upper motor neuron lesion vs a lower motor neuron lesion.

2. How does myasthenia gravis present? How do you diagnose and treat it?

3. What is the pathophysiology of ALS?

4. What is the pathophysiology of Guillane Barré? How do you diagnose and treat it?

5. Compare the clinical findings of damage to the median, radial, and ulnar nerves.

6. What is the etiology of rhabdomyolysis and what are the expected electrolytes and enzyme levels?

7. What are the clinical signs, unusual labs, diagnosis, and treatment for multiple sclerosis?

8. Describe pseudotumor cerebri.

9. What are the most common signs of cervical spondylosis? How would you manage this case?

10. Compare and contrast migraine vs cluster headaches.

11. Describe the pathophysiology and treatment of Parkinson's disease. What is the clinical triad?

12. List the major distinguishing features of:

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>GRAND MAL</th>
<th>PETIT MAL</th>
<th>SIMPLE</th>
<th>COMPLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ENDOCRINOLOGY

1. Discuss the coverage and use for the different types of insulin.

2. Compare and contrast primary and secondary adrenocortical insufficiency. (clin. presentation, and treatment)

3. Compare the expected labs and management of DKA with hyperosmotic non-ketotic hyperglycemia.

4. Compare and contrast etiology, diagnosis, and treatment of diabetes mellitus type I vs type II.

5. Compare and contrast the underlying cause, the symptoms, and the treatment of reactive hypoglycemia vs 1° hypoglycemia.

6. Describe the presentation and management of Somogyi vs Dawn phenomenon.

7a. Name three causes for Cushing's syndrome. Discuss its diagnosis and treatment.

b. Describe the dexamethasone suppression test and what it can help to diagnose.

8. What is the best diagnostic test for pheochromocytoma?

9. Fill in the table to show the effects of PTH, and Vit. D on Ca^{2+} and PO_{4}^{2-}:

<table>
<thead>
<tr>
<th>HORMONE</th>
<th>BONE</th>
<th>KIDNEY</th>
<th>INTESTINE</th>
<th>SERUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
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</tbody>
</table>

10. Compare the pathophysiology of Grave's Disease to Hashimoto's Thyroiditis.

11. Discuss the general clinical features of hypo vs hyperthyroidism.
ENDOCRINOLOGY (cont.)

12a. What general clinical features are expected and what is the DDx (top 3 choices, max.) for the following labs:
   i. $\uparrow$ TSH, $\Box$ T$_3$ and T$_4$
   ii. $\Box$ TSH, $\uparrow$ T$_3$ and T$_4$
   iii. + microsomal Ab test

b. How is the free thyroxin index (FTI) calculated?

c. What is the significance of T$_3$RU?

d. What changes (if any) would you expect in the following labs:

<table>
<thead>
<tr>
<th>FTI</th>
<th>T$_4$</th>
<th>T$_3$RU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperthyroidism</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13a. Name three conditions that cause an increased blood level of TBG.
   b. Name three conditions that cause a decreased blood level of TBG.

14. Describe the presentation of a prolactinoma? What is the treatment?

15. Discuss the etiology and treatment of myxedema coma.

16. Name the common clinical signs and symptoms of thyrotoxicosis.

17. Give the major clinical features, diagnostic findings, and treatment for the following:
   Addison's disease -
   Cushing's disease -
   Diabetes Insipidus -
   SI ADH -
   Pheochromocytoma -
   Barter's syndrome -

18. Name 1 to 3 defining characteristics of the following:
   Pancoast's tumor -
   Sheehan's Syndrome -
   Horner's Syndrome -

19. How would you diagnose 1° hyperaldosteronism?