

YR 2 URINARY TRACT UNIT EXAMINATION -- February 05, 1999.

CHOOSE THE SINGLE BEST ANSWER FOR QUESTIONS 1 - 64.

1. Medullary rays are:
 - A. Chiefly derived from metanephric blastema
 - B. Located within the cortex
 - C. Nourished by vasa recta
 - D. Comprised of pars recta

2. The anemia of chronic renal failure is characterized by:
 - A. Burr cells
 - B. Macrocytic indices
 - C. Hypocellular bone marrow
 - D. Decreased iron stores

3. Which one of the following is true of the **medullary** thick ascending limb of Henle?
 - A. It has high water permeability
 - B. It plays no role in urinary dilution
 - C. Anti-Diuretic hormone increases water reabsorption at this site
 - D. Sodium, Potassium, and Chloride are actively reabsorbed here

4. The most common clinical stage at the time of diagnosis when using PSA (Prostate Specific Antigen) to detect prostate cancer is:
 - A. Localized
 - B. Extraprostatic
 - C. Regional nodal disease
 - D. Distant metastasis

5. A 3 year-old boy is brought to your pediatric practice. His mother states that he is going to the bathroom all the time and wets the bed at night. He is constantly drinking and complaining of thirst. His physical exam is normal, but he is somewhat shorter than most children his age and seems slightly slower in his learning ability. He weighs 20 kg. You obtain some lab tests.

Blood/serum:

creatinine = 0.4 mg/dL
BUN = 20 mg/dL
Na = 147 mEq/L
K = 4 mEq/L
Cl 110 mEq/L
total venous CO₂ = 25 mEq/L
plasma osmolality 300 mosm/kg water

Urine:

urine glucose not detected
urine osmolality 150 mosm/kg water
24 hr. urine volume in excess of 1.5L

(If required, you may use 0.6 x body weight for total body water even though this is a child.)

Because of your findings, you do some further testing and find that.

- A. Fluid restriction increases his plasma Na but does not raise his urine osmolality at all, so he has psychogenic polydipsia.
- B. His measured plasma antidiuretic hormone level is high, so he may have a hereditary V2 receptor defect.
- C. Calculation of the free water clearance shows that despite the high urine output, he is reabsorbing 500ml water each day.
- D. He will need formal testing for diabetes mellitus.
6. Diuretics whose principal site of action is the proximal tubule are not useful in the treatment of congestive heart failure because:
- A. They act at a major site of sodium reabsorption.
- B. They act at a major site of bicarbonate absorption.
- C. They do not result in decreased chloride reabsorption.
- D. Sites in the more distal nephron absorb large amounts of sodium and water.

7. The decrease in mortality rate from prostate cancer may be due to:
- A. Improvement in prostate cancer prevention agents.
 - B. Active chemotherapeutic regimens.
 - C. The decreasing incidence of smoking in men.
 - D. Identification of prostate cancer at an early clinical stage.
8. In a patient with acute tubular necrosis, which of the following is a good prognostic sign?
- A. Older age
 - B. Urine output greater than 500cc/24 hours
 - C. Associated with trauma
 - D. Associated with surgery
9. Bicarbonate reabsorption in the proximal tubule is increased in the presence of
- A. Increased circulating angiotensin II, due to increased number of Na^+/H^+ exchangers in the basolateral membrane.
 - B. Decreased blood pCO_2 , which increases the filtered load of bicarbonate
 - C. Decreased extracellular volume, by increasing Na^+ reabsorption
 - D. Increased aldosterone, due to direct stimulation of H^+ secretion at the apical membrane.
10. The most appropriate class of diuretics to treat a patient with pulmonary edema who requires acute rapid diuresis would be:
- A. Thiazide diuretics
 - B. Loop diuretics
 - C. Osmotic diuretics
 - D. Potassium sparing diuretics

11. Which of the following statements is true about post obstructive diuresis?
- A. It is commonly still present one week after the relief of obstruction
 - B. Occurs after relief of either unilateral or bilateral obstruction
 - C. Osmotic diuresis of retained urea and sodium is the main cause
 - D. Water diuresis is the main cause
12. A 60 year old woman presents with an acute abdomen and a serum creatinine of 0.7mg/ml. She underwent a laparotomy where a ruptured appendix was discovered. On the third post-operative day, urine output fell to 300cc/24hrs. Laboratory tests revealed the following: Serum creatinine 3mg/dl, Bun 80 mg/dl, Na 136 meq/L, K 5.4 meq/L, Cl 109 meq/L, HC03 15 meq/L. Urinary Na 50 meq/L, Creat 30 meq/L. Which one of the following is true regarding this patient?
- A. Fractional excretion of sodium is 2%
 - B. Renal Failure Index is 5.0
 - C. Non-oliguric renal failure is present
 - D. This process is most likely irreversible
13. What is the likelihood of a man developing clinically localized prostate cancer in his lifetime.
- A. 5%
 - B. 20%
 - C. 40%
 - D. 60%
14. Impaired ability to concentrate the urine may be caused by
- A. Ingestion of hypertonic breast milk
 - B. Decreased threshold for antidiuretic hormone (ADH) release
 - C. Renal damage due to analgesic associated nephropathy
 - D. Diarrhea

15. Normal complement levels are characteristic of:
- A. Acute poststreptococcal glomerulonephritis
 - B. Diffuse proliferative lupus glomerulonephritis
 - C. Acute bacterial endocarditis-associated glomerulonephritis
 - D. Berger's disease (IgA nephropathy)
16. Which one of the following causes of hypokalemia is likely to be associated with increased urinary potassium excretion?
- A. Diarrhea
 - B. Metabolic alkalosis
 - C. Decreased potassium intake
 - D. Laxative abuse
17. PSA binds primarily to which protein in the plasma?
- A. Alpha 1 antichymotrypsin
 - B. Albumin
 - C. Sex hormone binding globulin (SHBG)
 - D. Prostate related protein
18. A 60 Kg male is 5ft 10 inches tall. He is given 2 liters of normal saline. Which of the following would occur in his body fluid volumes?
- A. Total body water would increase to 37L
 - B. Extracellular fluid would increase to 14L
 - C. Intracellular water would increase to 24L
 - D. Interstitial fluid would not change

19. From the following list, which is the most common malignant tumor arising in a young child's kidney?
- A. Wilms' tumor
 - B. Clear cell carcinoma
 - C. Transitional cell carcinoma
 - D. Squamous cell carcinoma
20. A patient with acute renal failure presents with edema, serum creatinine 10mg/dl, BUN 95 mg/dl and a serum potassium of 6.8 meq/L. He has mild nausea and increased fatigue. He denies shortness of breath or vomiting and has no chest pain. Which of the following is the most appropriate immediate treatment.
- A. Dialysis
 - B. Compazine
 - C. Glucose and insulin
 - D. Loop Diuretics
21. The ammonia/ ammonium ($\text{NH}_3/\text{NH}_4^+$) system in the kidney.
- A. Displays inhibition of NH_4^+ production from glutamine in the presence of hypokalemia.
 - B. Exhibits increased NH_4^+ excretion under conditions of metabolic acidosis with an increased anion gap.
 - C. Utilizes the Na^+/H^+ exchanger in the thick ascending limb for reabsorption of NH_4^+ .
 - D. Requires the presence of titratable acid.
22. Creatinine clearances are decreased by:
- A. Increased dietary protein
 - B. Increasing age
 - C. Pregnancy
 - D. Increasing renal cortical blood flow

23. Which of the following will result in an **increase** in serum potassium concentration?
- A. Increased insulin release
 - B. Rhabdomyolysis (muscle injury)
 - C. Beta₂ adrenergic stimulation
 - D. Metabolic alkalosis
24. Which one of the following statements concerning bladder cancer is true?
- A. Its clinical course is most often characterized by multiple local recurrences over a period of several years.
 - B. It is more common in women than men.
 - C. The majority of cases are due to industrial exposure to carcinogens.
 - D. It is a rapidly fatal form of cancer in most patients.
25. Which of the following is the leading cause of death in patients with acute tubular necrosis?
- A. GI bleeding
 - B. Infection
 - C. Acute myocardial infarction
 - D. Stroke
26. Which of the following would influence the concentration of protein in the urine determined by the dip-stick method?
- A. Urine glucose concentration
 - B. Urinary Leukocyte Esterase
 - C. Urinary nitrites
 - D. Specific gravity

27. The greatest amount of Potassium is found in the:
- A. Skin
 - B. Muscle
 - C. Nerve
 - D. Bone
28. Hypertension in chronic renal failure is a result of:
- A. Increased sympathetic tone
 - B. Decreased renin production
 - C. Tubular sodium wasting
 - D. Excess kinins
29. A patient involved in an automobile accident presents with a blood pressure of 90/60 and a pulse rate of 120 beats/minute. Which would be the most appropriate IV fluid therapy to administer to this patient?
- A. 5% Dextrose and water
 - B. 5% Dextrose and 1/2 Normal saline
 - C. 1/2 Normal saline
 - D. Normal saline
30. The most characteristic feature of a "nephritic" urinary sediment is the presence of:
- A. Granular casts
 - B. Broad "brown" casts
 - C. RBC casts
 - D. WBC casts
 - E. Fatty casts

31. A 56 year old man is found to have an elevated serum prostate specific antigen (PSA) at the time of his annual physical examination. Digital rectal examination reveals a firm nodule on the left side. Of the following choices, a needle biopsy of this lesion is most likely to show:
- A. Adenocarcinoma
 - B. Squamous cell carcinoma
 - C. Rhabdomyosarcoma
 - D. Malignant lymphoma
 - E. Transitional cell carcinoma
32. Which of the following would be expected to have low levels of serum C3?
- A. Diabetic glomerulosclerosis
 - B. Minimal change disease
 - C. Post-streptococcal glomerulonephritis
 - D. Focal (segmental) glomerulosclerosis
 - E. Renal amyloid deposits
33. A child afflicted with which one of the following would have the best prognosis?
- A. Minimal change disease
 - B. Diffuse proliferative lupus glomerulonephritis
 - C. Focal segmental glomerulosclerosis
 - D. Diabetic nodular glomerulosclerosis
 - E. Crescentic glomerulonephritis

34. A man is brought into the emergency room. He was found unresponsive on the floor of a shelter for the homeless. He is afebrile. His BP is 130/92 and heart rate is 90 bpm. respiratory rate is 30 per minute. He is thin and poorly nourished. Besides his unresponsiveness, no other acute abnormalities were detected.

Arterial blood gases: pH 7.25
 pCO₂ 26 mmHg
 pO₂ 90 mmHg

Venous laboratory values: Na = 135 mEq/L
 K = 5.3 mEq/L
 Cl = 100 mEq/L
 Total venous CO₂ content = 11

Of the following possible-diagnoses, the one that best fits the presentation and laboratory parameters is:

- A. Severe diarrhea with profound dehydration
 - B. Ethylene glycol ingestion
 - C. Prolonged vomiting
 - D. Distal renal tubular acidosis
 - E. Impaired ammonium excretion
35. In acute pyelonephritis, an alkaline urine is most often caused by:
- A. Staphylococcus
 - B. Klebsiella
 - C. Proteus
 - D. E. coli
 - E. Pseudomonas

36. The best way to tell chronic renal failure from acute renal failure is by:
- A. Bilateral symmetric decreased renal size
 - B. The level of serum creatinine
 - C. The presence of blood in the urine
 - D. Sodium retention with weight gain
 - E. The presence of metabolic acidosis
37. Papillary necrosis most commonly results from:
- A. Chronic interstitial nephritis from lead exposure
 - B. Analgesic associated/abuse nephropathy
 - C. Acute tubular necrosis
 - D. Acute allergic interstitial nephritis
 - E. Hemorrhagic shock
38. A 65 year old woman is found to have a 5 cm. solid mass in the right kidney during an ultrasound examination for presumed gall bladder disease (cholelithiasis). If the kidney is removed, the most likely pathologic diagnosis would be:
- A. Wilms' tumor
 - B. Clear cell renal cell carcinoma
 - C. Benign cyst
 - D. Liposarcoma
 - E. Transitional cell carcinoma
39. Which of the following is characterized by hypercellular glomeruli?
- A. Post-streptococcal glomerulonephritis
 - B. Minimal change disease
 - C. Diabetic (nodular) glomerulosclerosis
 - D. Benign familial recurrent hematuria
 - E. Idiopathic membranous glomerulonephritis

40. Which of the following typically presents as acute renal failure?
- A. Membranous glomerulopathy
 - B. Post infectious glomerulonephritis
 - C. Focal glomerulosclerosis
 - D. Diabetic nephropathy
 - E. Minimal change disease
41. Bilateral small kidneys are the RULE in:
- A. Chronic interstitial nephritis
 - B. Acute pyelonephritis
 - C. Chronic pyelonephritis
 - D. Acute tubular necrosis
 - E. Acute interstitial nephritis
42. A 62 year old man presents with a history of several episodes of gross hematuria. Cystoscopic evaluation reveals a mass in the urinary bladder. The mass is resected and submitted for pathologic evaluation. The most likely diagnosis is:
- A. Adenocarcinoma
 - B. Leiomyosarcoma
 - C. Squamous cell carcinoma
 - D. Transitional cell carcinoma
 - E. Small cell carcinoma

43. A 74 year old man presents with back pain and is found to have multiple osteoblastic bone lesions. A biopsy of one of the bone lesions reveals metastatic carcinoma. The most likely origin of the metastatic cancer is:
- A. The kidneys
 - B. The pancreas
 - C. The bladder
 - D. The prostate
 - E. The testes
44. Wegener's granulomatosis is most likely to have:
- A. Circulating anti-double stranded DNA
 - B. Circulating C ANCA
 - C. Membranous glomerulonephritis
 - D. Bright linear glomerular immunofluorescence for IgG
 - E. Glomerular mesangial deposits of IgA

45. A 35 year old woman comes to see you for a routine examination prior to beginning a weight reduction program. She denies a history of any medical problems. She smokes 1 pack cigarettes per day. Her BP is 170/90 mmHg and heart rate is 80. Cardiopulmonary exam is normal. She has no edema. You obtain laboratory screening tests.

Venous laboratory values: Na = 143 mEq/L
K = 2.8 mEq/L
Cl = 100 mEq/L
Total venous CO₂ content = 33 mEq/L

glucose = 100 mg/dL
creatinine = 1.2 mg/dL
BUN = 12 mg/dL

You call her back for further tests. Repeat venous tests are **exactly** the same, and you now have obtained simultaneous urinary electrolytes and blood gas tests.

Arterial blood gas: pH 7.45
pCO₂ 49
pO₂ 88 mmHg

Urinary Na = 30 mEq/L
Urinary K = 40 mEq/L
Urinary Cl = 45 mEq/L

Your best working diagnosis is:

- A. Respiratory alkalosis due to lung disease
- B. Self-induced vomiting to lose weight
- C. Primary hyperaldosteronism
- D. Use of over-the-counter ammonium chloride containing diet pills
- E. Villous adenoma

46. Glomerular immunofluorescence for immune reactants is likely to be negative in:
- A. Post-streptococcal glomerulonephritis
 - B. Idiopathic membranous glomerulonephritis
 - C. Diffuse proliferative lupus glomerulonephritis
 - D. Berger's disease
 - E. Minimal change disease
47. The most common bacteria in a first episode of acute ascending pyelonephritis is:
- A. E. coli
 - B. Proteus
 - C. Klebsiella
 - D. Pseudomonas
 - E. Staphylococcus
48. All of the following are true regarding renal handling of potassium **EXCEPT**:
- A. Increased luminal negativity in the collecting duct results in increased urinary potassium
 - B. Aldosterone results in increased potassium secretion in the collecting duct
 - C. Increased potassium concentration in the intercalated cell results in increased potassium excretion
 - D. Increased tubular fluid flow rate in collecting duct results in enhanced potassium secretion
49. Which of the following **IS NOT** a cause of acute renal failure?
- A. Congestive heart failure
 - B. Penicillin induced interstitial nephritis
 - C. Occlusion of the right ureter by tumor
 - D. Hypotension

50. All of the following drugs can potentiate hyperkalemia in chronic renal failure EXCEPT:
- A. Triamterene
 - B. Angiotensin Converting Enzyme Inhibitors
 - C. Furosemide
 - D. Non selective beta adrenergic blocking agents
51. All of the following might be associated with increased serum potassium EXCEPT:
- A. A WBC count of greater than 100,000
 - B. Hyperaldosteronism
 - C. Platelet count greater than one million
 - D. Laxative abuse
52. Each of the following statements regarding bicarbonate and the kidney is true EXCEPT:
- A. Bicarbonate may exit the basolateral membrane of both the proximal tubule and the alpha intercalated cells via a $\text{HCO}_3^-/\text{Cl}^-$ exchanger.
 - B. When H^+ ion combines with HCO_3^- in the tubular lumen, the net effect is reabsorption of filtered bicarbonate.
 - C. An increase in the production and excretion of ammonium leads to an increase in HCO_3^- reabsorption.
 - D. Inhibition of the $\text{HCO}_3^-/\text{Cl}^-$ exchanger in the beta-intercalated cell would lead to increased excretion of HCO_3^- into the urine.
53. Which of the following **IS NOT** characteristic of the **cortical** thick ascending limb of Henle?
- A. Important in urinary concentration
 - B. Important in urinary dilution
 - C. Impermeable to water
 - D. A site of action of Bumetanide (Bumex)

54. Acute Tubular Necrosis may result from all of the following EXCEPT:
- A. Aminoglycoside administration
 - B. Cardiogenic shock
 - C. Bilateral urinary tract obstruction
 - D. Radiographic contrast administration
55. Microscopy of the urinary sediment is generally helpful in distinguishing between each of the following EXCEPT:
- A. A glomerulonephritis from an acute interstitial nephritis
 - B. A pure nephrotic syndrome from a nephritic syndrome
 - C. A glomerular disease of hereditary versus an acquired cause
 - D. Acute renal failure from a prerenal cause versus acute tubular necrosis
56. Features consistent with chronic glomerulonephritis with mild renal failure include all of the following EXCEPT:
- A. Normal anion gap metabolic acidosis
 - B. Normal serum potassium
 - C. Renal concentrating defect
 - D. Hypertension
57. Clinically useful diuretics increase urine flow by all of the following mechanisms EXCEPT:
- A. Directly inhibiting active sodium transport
 - B. Directly inhibiting water transport in the collecting duct
 - C. Increasing Vasa Recta Blood flow
 - D. Directly inhibiting active calcium transport

58. Bone disease in renal failure may be caused by all of the following EXCEPT:
- A. Increased parathyroid hormone
 - B. Aluminum
 - C. Decreased vitamin D
 - D. Decreased serum phosphorus
59. Which of the following **IS NOT** involved in the pathogenesis of Acute Tubular Necrosis?
- A. Cytokines
 - B. Hypoxia
 - C. Redistribution of integrins in renal tubular cells
 - D. Loss of intracellular calcium
60. All of the following are true regarding potassium homeostasis EXCEPT:
- A. 90% of ingested daily potassium is excreted in the urine
 - B. Increased potassium intake results in increased urinary potassium
 - C. Urinary Potassium excretion is determined by events in the collecting tubule
 - D. The urinary potassium excretion under normal circumstances is determined by events in the Loop of Henle.
61. All of the following are true of acute renal failure EXCEPT that it:
- A. May be associated with urine output less than 400 cc/day
 - B. May result from renal hypoperfusion
 - C. May be caused by bilateral obstruction
 - D. May result from hypocalcemia
 - E. May be associated with urine output greater than 500 cc/day

62. Each of the following occurs in response to metabolic acidosis with an increased anion gap EXCEPT:
- A. Net acid excretion by the kidney is increased
 - B. H^+ secretion by both proximal tubule and collecting duct cells is increased
 - C. Intracellular proteins participate by buffering the H^+
 - D. Reabsorption of the filtered load of bicarbonate is increased by the kidney
 - E. Ventilation changes so that pCO_2 is increased
63. Ipsilateral features of the urinary tract in an individual with established unilateral chronic (non-obstructive) pyelonephritis include all EXCEPT:
- A. An enlarged renal silhouette
 - B. Pelvi-ureteric dilation
 - C. Laterally displaced vesico-ureteric orifice
 - D. "Clubbing" of at least one calyx
 - E. "Golf-hole" (gaping) vesicoureteric orifices
64. Each of the following conditions may be associated with increased antidiuretic hormone (ADH) secretion EXCEPT:
- A. Severe congestive heart failure
 - B. Decompensated liver disease, such as cirrhosis
 - C. Profound hypoxia (low pO_2)
 - D. Psychogenic polydipsia
 - E. Hemorrhage

DIRECTIONS:

Match each statement 65-68 with its appropriate alternative from those provided A-E below. Use each alternative once, more than once or not at all.

- A. An individual with a plasma Na concentration of 120 mEq/L, a glucose of 108 mg/dL and a BUN of 14 mg/dL with a measured plasma osmolality of 251 mosm/kgH₂O.
- B. An individual with a plasma Na concentration of 120 mEq/L, a glucose of 108 mg/dL and a BUN of 28 mg/dL with a measured plasma osmolality of 288 mosm/kgH₂O.
- C. An individual with a plasma Na concentration of 120 mEq/L, a glucose of 680 mg/dL and a BUN of 28 mg/dL with a measured plasma osmolality of 288 mosm/kgH₂O.
- D. An individual with a plasma Na concentration of 130 mEq/L, a glucose of 800 mg/dL and a BUN of 28 mg/dL with a measured plasma osmolality of 315 mosm/kgH₂O.
- E. An individual with a plasma Na concentration of 140 mEq/L, a glucose of 108 mg/dL and a BUN of 140 mg/dL with a measured plasma osmolality of 336 mosm/kgH₂O.

65. Individual with syndrome of inappropriate antidiuretic hormone

66. Plasma Na concentration will normalize after correction of hyperglycemia

67. Water shift from intracellular to extracellular compartment will not occur

68. Needs evaluation for hyperlipidemia

DIRECTIONS: Match each numbered statement, 69 - 73 with the conditions listed A - D below. Assume two previously normally functioning kidneys and complete obstruction. Use each alternative once, more than once or not at all.

- A. Unilateral ureteral obstruction
- B. Bilateral ureteral obstruction
- C. Both unilateral and bilateral ureteral obstruction
- D. Neither unilateral nor bilateral ureteral obstruction

- 69. Single nephron glomerular filtration rate is decreased upon release of 24 hours of obstruction
- 70. Ureteral pressure is high at 5 hours of obstruction
- 71. Ureteral pressure is high at 24 hours of obstruction
- 72. Glomerular filtration rate is zero at 24 hours
- 73. Thromboxane A₂ is the main prostaglandin released during the first 5 hours of obstruction

DIRECTIONS: Match the following laboratory values A - E below, that are most closely associated with the individuals numbered 74 - 77.

		<u>Blood</u>		<u>SERUM</u>		
	Blood pH	pCO₂ mmHg	HCO₃⁻ mEq/L	Cl⁻ mEq/L	Na⁺ mEq/L	Urinary Cl⁻ mEq/L
A.	7.46	46	32	96	138	30
B.	7.56	54	47	80	138	10
C.	7.37	54	30	100	138	30
D.	7.29	26	12	114	138	30
E.	7.25	28	12	100	138	10

74. A man who had his urinary bladder removed because of cancer and now has a ureterosigmoidostomy
75. A woman with Cushing's disease
76. An elderly woman with Alzheimer's who has accidentally overdosed on aspirin over several days
77. A man who has been vomiting for 3 days

DIRECTIONS: Match each disease 78 - 81 with its most typical histologic feature in glomeruli from those listed A-D below. Use each alternative once, more than once or not at all.

- A. Nodules of mesangial matrix
- B. Hematoxylin bodies
- C. Spikes
- D. Humps
78. Idiopathic membranous glomerulonephritis
79. Post-streptococcal glomerulonephritis
80. Diffuse proliferative lupus glomerulonephritis
81. Diabetic glomerulosclerosis

DIRECTIONS: Match each of the diuretic agents 82 - 85 with its appropriate feature listed A - D below. Use each alternative once only.

- A. Used to prevent diuretic induced hypokalemia
- B. Used in the treatment of cerebral edema
- C. Used in the treatment of calcium stones
- D. Used in the treatment of life threatening hyponatremia

82. Triamterene

83. Mannitol

84. Hydrochlorothiazide (Hydrodiuril)

85. Lasix (Furosemide)

DIRECTIONS: Match each description 86 - 90 with its corresponding cell A-E below. Use each alternative once only.

- A. Parietal epithelial cell
- B. Endothelial cell
- C. Visceral epithelial cell
- D. Macrophage
- E. Mesangial cell

86. A migrant cell in the glomerulus

87. The cell that possesses slit diaphragms in health

88. The endocapillary cell that may migrate to the subendothelial space

89. The cell whose apical surface only contacts glomerular filtrate

90. The intrinsic glomerular cell in contact with blood circulating within capillaries

DIRECTIONS: Match each clinical situation 91 - 95 with its corresponding renal disease from those provided, A-E below. Use each alternative once only.

- A. Autosomal recessive polycystic kidney disease
- B. Medullary sponge kidney
- C. Autosomal dominant polycystic kidney disease
- D. Bilateral renal hypoplasia
- E. Juvenile nephronophthisis

- 91. Death at age 50 years due to ruptured berry aneurysm at the circle of Willis; enlarged cystic kidneys.
- 92. Death at age 10 years from uremia. Renal cysts confined to the medullary pyramids of bilaterally small kidneys.
- 93. Stillborn with bilateral enlarged cystic kidneys with smooth surfaces and intact fetal lobulation.
- 94. Death at age 35 years due to an automobile accident. Previous x-rays investigating hypercalciuria had revealed bilateral medullary calcification. There was no evidence of portal hypertension.
- 95. Death at age 10 years from uremia. Bilateral small kidneys with decreased number of renal lobes.

DIRECTIONS: Match each description 96 - 100 with the disease affecting the kidney from those provided A - E below. Use each alternative once, more than once, or not at all.

- A. Benign nephrosclerosis
- B. Polyarteritis nodosa
- C. Malignant nephrosclerosis
- D. Sickle hemoglobin disease (SS)
- E. Hemolytic uremic syndrome

- 96. Intrarenal aneurysms of interlobular arteries
- 97. Papillary necrosis
- 98. Fibro-elastic intimal thickening of interlobular arteries
- 99. E. coli 0157:H7
- 100. Mucoid, "onion skin" type intimal thickening of interlobular arteries