

Chapter 18- Lab- Pig Kidney Dissection

You are a third year medical student and have been asked by a resident physician to create an instruction manual for first year medical students illustrating the external and internal structures of the Kidney. The resident physician has asked you to include the following structures of the heart in your instruction manual:

External Structures

Anterior View

Hilum
Renal capsule (Draw)
Ureter (Draw)

Medial View

Renal artery
Renal vein
Ureter

Internal Structures

Major calyces (calyx- singular)
Minor calyces
Renal columns
Renal cortex
Renal medulla
Renal papilla
Renal pelvis
Renal pyramids
Ureter

Label the structures from above on the given diagrams below.

Anterior View



Medial View



Internal Structures



Analysis Questions:

Matching

Match the terms in column A with the descriptions in column B. Place the letter of your choice in the space provided.

Column A

- a. Calyces
- b. Hilum
- c. Nephron
- d. Renal column
- e. Renal cortex
- f. Renal papilla
- g. Renal pelvis
- h. Renal pyramid
- i. Renal sinus

Column B

- _____ 1. Shell around renal medulla
- _____ 2. Branches of renal pelvis to renal papillae
- _____ 3. Conical mass of tissue within renal medulla
- _____ 4. Projection with tiny openings into minor calyx
- _____ 5. Medial depression for blood vessels and ureter to enter kidney chamber
- _____ 6. Hollow chamber within kidney
- _____ 7. Microscopic functional unit of kidney
- _____ 8. Cortical tissue between renal pyramids
- _____ 9. Superior funnel-shaped end of ureter inside renal sinus

10. Using the terms **tubular secretion** and **tubular reabsorption**, describe how urine can become concentrated or diluted.

11. Support the claim with your knowledge about the urinary system, the kidneys, and the nephron.

"Testing urine samples is a highly effective way of determining if an athlete has taken banned substances, such as performance enhancing drugs (PED's)."

Put in Order

Arrange the following structures of the nephron in order in which substances flow through the urinary system, beginning with the site of filtration.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

- ascending limb of the Loop of Henle
- Bowman's capsule
- calyces (major and minor calyx)
- collecting duct
- descending limb of the Loop of Henle
- distal convoluted tubule
- proximal convoluted tubule
- renal pelvis
- ureter
- urethra
- urinary bladder