

## The Urinary System: Late Filtrate Processing

1. Name the two types of cells in the cortical collecting ducts and describe their function.

a.

b.

2. a. Aldosterone is stimulated by an increase or decrease in what ions?

1. \_\_\_\_\_ 2. \_\_\_\_\_

b. What does aldosterone increase in the basolateral membrane?

3. What does antidiuretic hormone (ADH) increase in the luminal membrane?

4. In dehydration and overhydration, what would be the levels of:

a. ADH? \_\_\_\_\_ dehydration \_\_\_\_\_ overhydration (↑ or ↓)

b. Aldosterone? \_\_\_\_\_ dehydration \_\_\_\_\_ overhydration (↑ or ↓)

5. Describe what moves out of the tubule and what the osmolality would be in the following nephron segments:

a. Proximal tubule \_\_\_\_\_ moves out \_\_\_\_\_ mOsm

b. Descending limb \_\_\_\_\_ moves out \_\_\_\_\_ mOsm

c. Ascending limb \_\_\_\_\_ moves out \_\_\_\_\_ mOsm

d. Late distal tubule \_\_\_\_\_ moves out \_\_\_\_\_ mOsm

6. a. By the medullary collecting duct, only \_\_\_\_\_% of the filtrate remains.

b. Under the following conditions, report the levels of ADH and subsequent urine osmolarity and flow rate:

<b>Hydration</b>	<b>ADH</b>	<b>Urine Osmolarity</b>	<b>Urine Volume</b>
Normal			
Dehydration			
Overhydration			

7. a. Urine with a “high normal osmolarity” and containing RBC’s and protein

would indicate: \_\_\_\_\_

b. Urine with a very high osmolarity and glucose would indicate:

\_\_\_\_\_

c. Urine with a very low osmolarity and high volume would indicate:

\_\_\_\_\_

8. An increase in plasma potassium levels would lead to what changes in the following? (↑ or ↓)

a. \_\_\_\_\_ Aldosterone levels

b. \_\_\_\_\_ Potassium excretion

c. \_\_\_\_\_ Sodium excretion

d. \_\_\_\_\_ Interstitial osmolarity

e. \_\_\_\_\_ Urine volume