Acid Base - Vanders Ch. 9

When an acid is dissolved in water, it …_____

When a base is dissolved in water, it … _____

What is the difference between a weak acid and a strong acid?

What is the relationship between pH and [H+]?

Write out the Henderson-Hasselbalch Equation and explain what it means.

Describe the concept of buffering using the CO2-bicarbonate buffer system as an example.

List 5 body buffers:

1. _____
2. _____
3. _____
4. _____
5. _____

Does administration of LRS acidify or alkalinize the blood? How?

Bicarbonate is freely filtered by the glomerulus and the vast majority is reabsorbed by the _____. Then, the _____ secretes either protons or bicarbonate to balance net acid/ base input into the body.

Describe bicarbonate reabsorption in the proximal tubule.

Describe the action of Type A and Type B intercalated cells.

How do the kidneys excrete an acid load (or replace a bicarbonate deficit)?

Give two examples of urinary non-bicarbonate bases

1. _____
2. _____

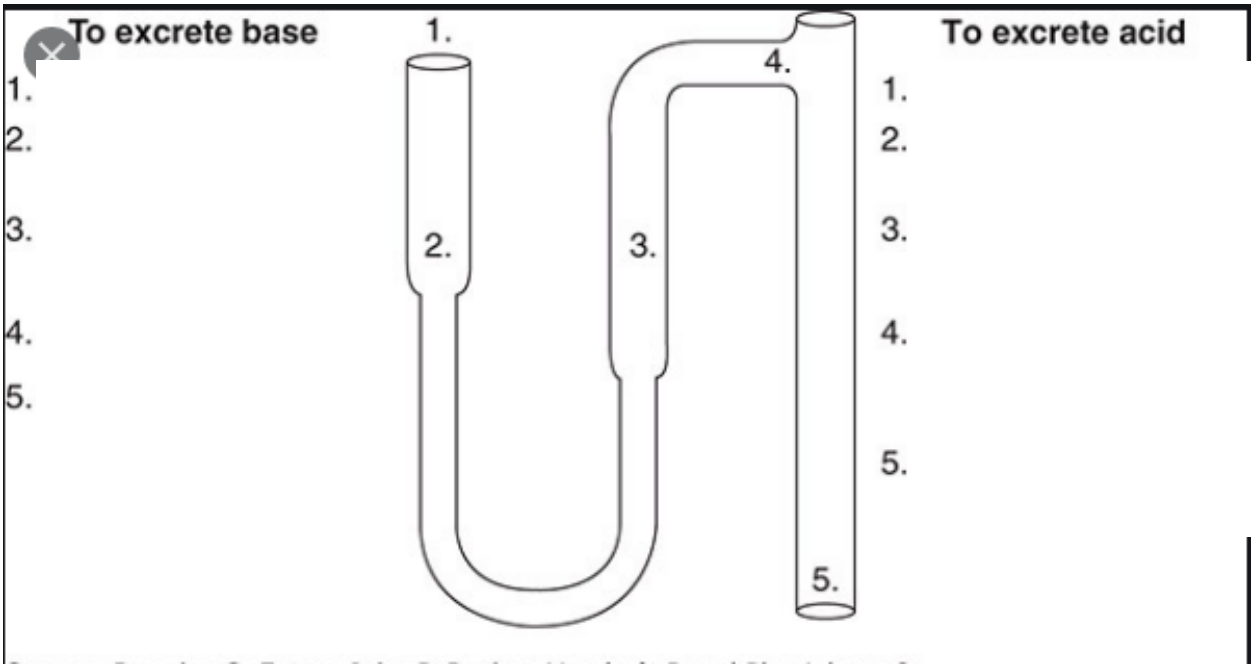
Describe ammonium handling by the kidneys at the proximal tubule, thick ascending limb, and in the medullary collecting ducts.

Proximal tubule:

Thick ascending limb:

Medullary collecting ducts:

Label what happens at each segment of the kidney to (A) Excrete base; (B) Excrete acid



Fill out the following chart regarding renal tubular acidosis

	Type 1	Type 2	Type 4
Defect in …			
Mild/ mod or severe acidosis			
Effect on K+			
Acidic or alkaline urine?			

*Type 3 - rare, combination of type 1 and 2