

Unit Four Homework

C23 Urinary System

Human Kidney Function (6 min)

1. What are the basic functions of the kidney?
2. What is the outer portion of the kidney called?
3. What is the middle layer called?
4. What is the inner most area called? Function?
5. What percent of the cardiac output goes to the heart?
6. How much blood is filtered into the kidney?
7. How much urine is produced every day?
8. How much filtrate is reabsorbed?

The Structure and Function of the Nephron (5 min)

1. What is the functional unit of the kidney?
2. What are the four functions of the nephron?
3. What are the two parts of a renal corpuscle?
4. What happens in the glomerulus?
5. What is the difference between reabsorption and secretion?
6. What are the nephron's two convoluted tubes?
7. What type of fluid is in the collecting ducts?
8. How many nephron are in each kidney?

The Urinary System (6:30 min)

1. What are the four major functions of the kidneys?
2. If your kidneys are not working, what must you do?
3. What are the four major organs of the urinary system?
4. What is urine?
5. What percent of the cardiac output goes through the kidneys?
6. What blood vessels carries blood into the nephron?
7. What blood vessels carries blood away from the nephron?
8. Where does filtration occur and through what structure?
9. What is secretion and reabsorption? Where does it occur?
10. What is the fluid in the glomerulus called?
11. What is the principle process taking place in the proximal convoluted tubules?
12. What is the principle process taking place in the descending loop of Henle?
13. What is the principle process taking place in the ascending loop of Henle?
14. What is created deep in the medulla by the loop of Henle?
15. What occurs in the distal convoluted tubule and collecting duct?
16. What is the function of antidiuretic hormone? Receptor locations?

Micturition Reflex (2 min)

1. What is the pathway of the action potential in this reflex?
2. Where is the reflex coordinated?
3. What may modify this reflex?
4. What is the stimulus that starts this reflex?
5. What type of nerve causes the bladder to contract?
6. How are you made aware that you need to urinate?
7. What occurs if you don't want to urinate?
8. What occurs if you want to urinate?

How Urine is Concentrated (5 min)

1. What is the function of a nephron?
2. Where does urine formation begin?
3. What is the name of the process by which urine is concentrated?
4. What surrounds the loop of Henle?
5. What is most important about the end result of the loop of Henle?
6. Why is this process called counter current?
7. What occurs in the thick segment of the ascending loop of Henle?
8. After a gradient is created by the ascending limb, what is moved out of the descending limb and what happens to the discharged item?
9. What is the osmotic pressure horizontally across the loop of Henle?
10. What is the osmotic pressure vertically between the cortex and deep medulla?
12. What happens as urine passes through the collecting ducts?
13. What is the collecting ducts permeable to?
14. What provides the force for the concentration of urine?
15. What determines the rate of water transferred out of the collecting duct?
16. What is the net effect of ADH?