Name: _____

Period:_____

Unit 11: Urinary System

Test Review

1. List the major functions of the urinary system.

2. Describe the major functions of the urinary system organs.
   a. kidneys:
   b. ureters:
   c. urinary bladder:
   d. urethra:
3. Describe the gross anatomy of the kidney.
   a. renal cortex:
   b. renal medulla:
   c. renal pyramids:
   d. renal pelvis:
4. Describe the microscopic structures of the nephron. Include their functions.
   a. renal capsule:
   b. renal tubules:
   c. peritubular capillaries:
5. Describe the three basic physiological processes involved in urine formation.
   a. filtration:
   b. reabsorption:
   c. secretion:

6. Identify the physical characteristics of urine.
   1.
   2.
   3.
   4.
   5.

7. Know the methods of fluid intake and output and describe the following:
   a. micturition:
   b. voiding:
   c. sweat:
   d. feces:
   e. exhaled vapor:

8. Describe the diseases and disorders of the urinary system.
   a. Cystitis:
   b. Diabetes Insipidus:
   c. Glomerulonephritis:
   d. Incontinence:
   e. Kidney Stones:
   f. Renal Failure:
   g. Urinary Tract Infection:

Unit 11: Urinary System

Test Review - KEY

1. List the major functions of the urinary system.
   A. Regulate the composition and volume of the blood by removing and restoring selected amounts of water and solutes

   B. Excretes water, nitrogenous wastes from protein catabolism, inorganic salts, and assists in eliminating heat and carbon dioxide.

   C. Maintains blood pressure by controlling plasma volume of the blood

   D. Helps in metabolic processes

   E. Helps to regulate the pH of blood.

2. Describe the major functions of the urinary system organs.
   a. kidneys: The kidneys contain the functional units or the nephrons which are actually responsible for filtering the blood.

   b. ureters: transport urine from kidney to bladder

   c. urinary bladder: storage of urine

   d. urethra: removal of urine to the exterior of the body

3. Describe the gross anatomy of the kidney.
   a. renal cortex: outer reddish area of the kidney

   b. renal medulla: inner brownish area of the kidney

   c. renal pyramids: 8 to 18 triangular structures located within the medulla

   d. renal pelvis: a large cavity within the renal sinus that serves as an area to collect urine from the renal pyramids

4. Describe the microscopic structures of the nephron. Include their functions.

   a. renal capsule: the innermost layer of the tissue surrounding each kidney comprised of smooth, transparent, fibrous membrane that serves as a barrier against trauma and the spread of infection to the kidney.
   b. renal tubules: areas that the filtered fluid passes through where secretion and absorption occur

c. peritubular capillaries: Blood vessels (capillaries) surrounding the renal tubules
Involved with absorption of electrolytes and other necessary minerals from the urine

5. Describe the three basic physiological processes involved in urine formation.

a. filtration: the first step in urine production
forcing of fluids and dissolved substances through a membrane by pressure from the glomerulus to the glomerular (Bowmans) capsule
occurs in the renal corpuscle of the kidney

b. reabsorption: occurs in the renal tubules; as the filtrate passes through the renal tubules about 99% of it is reabsorbed by the body

c. secretion: the addition of materials to the filtrate from the blood

6. Identify the physical characteristics and abnormal constituents of urine.

1. color
2. turbidity
3. odor
4. pH
5. specific gravity
6. abnormal constituents: albumin, glucose, RBC, WBC, ketone bodies, bilirubin, urobiligen, casts, renal calculi, microbes

7. Know the methods of fluid intake and output and describe the following:

a. micturition: urination

b. voiding: the elimination of urine from the urinary tract

c. sweat: production and evaporation of fluids from the body in an attempt to regulate body temperature

d. feces: some water is eliminated by the body through defecation of fecal material.
-amount varies dependant upon volume and consistency of fecal material

e. exhaled vapor: some fluid is lost from the body through ventilation of exhaled water vapor - amount is dependant upon ventilation rate, humidity of atmospheric air, and environmental temperature

8. Describe the diseases and disorders of the urinary system.

   a. Cystitis: Cystits is the inflammation of the urinary bladder caused by bacteria.

   b. Diabetes Insipidus: Diabetes insipidus is the excessive urination of water due to a lack of the antidiuretic hormones (ADH). The kidneys are not able to absorb water which results in the excessive formation of urine.

   c. Glomerulonephritis: Glomerulonephritis, inflammation of the glomeruli, is caused by a bacterial infection.

   d. Incontinence: Incontinence is the ability to control urination.

   e. Kidney Stones: Kidney stones (renal calculi, nephrolithiasis) are crystallized mineral chunks that develop in the renal pelvis or calyces. Stones may develop as minerals crystallize on the renal papillae and break off into the urine.

   f. Renal Failure: Renal failure is the sudden interruption of kidney function due to obstruction, reduced circulation, or kidney disease. It may be acute, which comes on suddenly, or chronic, which occurs over a long period of time.

   g. Urinary Tract Infection: Urinary tract infections include cystitis and urethritis. They are generally caused by bacteria and are treated with antibiotics.