

Unit Four Study Guide

C23 Urinary System (6/24)

- 1 What are the functions of the urinary system? What are the functions of the kidneys?
- 2 What are the three steps in urine formation? How much urine is produced daily?
- 3 What is the structural unit of the kidney? Draw and label the different segments? What is the function of each segment? Where is most of the solute and water reabsorbed? What is the difference between the cortical and juxtamedullary structure? Where along the nephron are these terms used? (filtrate, tubular fluid, urine)
- 4 How are blood vessels associated with the different types of nephrons? What capillaries are only associated with the cortical convoluted tubules? What nephron is responsible for making the deep renal medulla hypertonic? Where are peritubular and juxtamedullary capillaries located? Their functions? What capillaries are associated with the Loop of Henle? Significance?
- 5 Where does filtration occur in the kidney? What three forces determine net filtration pressure?
- 6 In general (simple explanation), where does reabsorption and secretion occur? How do solute and solvent move during reabsorption and secretion in the nephron? Movement from where to where?
- 7 Where is glucose reabsorbed in the nephron? How much glucose is reabsorbed from the filtrate in a healthy person? When may glucose be in the blood? What is the significance of the glucose transport maximum? What type of "pump" moves glucose? When may glucose become an osmotic diuretic?
- 8 How much fluid is filtered by the nephron each day? How much urine do we produce in a day? Percent fluid reabsorbed? What is the significance of the glomerular filtration rate? What happens if GFR is too low or too high? How is it regulated?
- 9 What solutes are filtered by the glomerulus? What type of solutes are not filtered by the glomerulus? What percent of the glomerular filtrate is reabsorbed?
- 10 What two hormones have docking stations in the collecting duct of the nephron? What hormone conserves water in the collection duct by reabsorbing sodium ions? What hormone conserves water in the collecting duct by inserting aquaporins? What hormone is able to change the tonicity of the blood?
- 11 What is the significance of the counter current multiplication and counter current exchange? Location of each?
- 12 What is the renin-angiotensin-aldosterone mechanism? How is it activated?
- 13 What is the structure and function of the urinary bladder?
- 14 What is the micturition reflex?