Name:_____ Date:_____

Urine Production and Homeostasis

Fill in the blanks with appropriate words to complete the passage correctly about urine production.

When _____ enters the nephron through the afferent arteriole, it flows into a coiled network of capillaries called the _____. Here, _____ occurs: where high pressure forces small molecules such as _____, _____, amino acids, _____, and the toxin _____ out of the blood and into the _____ capsule, while larger molecules like _____ and _____ cells remain in the bloodstream.

The filtered fluid, now called the _____ _____, then passes into the proximal _____ tubule, where the process _____ _____ takes place to restore needed substances. In this region, most of the _____, amino acids, and a significant portion of _____ and salts are reabsorbed back into the blood via the nearby capillaries.

Next, the filtrate travels through the Loop of _____, which plays a vital role in concentrating the urine. The descending limb allows _____ to leave the filtrate by osmosis, while the ascending limb actively transports salts out, helping to maintain the kidney's osmotic gradient.

The filtrate then enters the _____ convoluted _____, where more of the process _____ _____ of salts and water occurs, depending on the body's needs and hormonal control.

Finally, the fluid from multiple nephrons reach the _____ duct, where more _____ may be reabsorbed to concentrate the urine further. The remaining fluid, now rich in _____ and other wastes, is the final yellow liquid called _____, which then trickles out of the nephron into the renal pelvis, down the two tubes called _____, and eventually to be temporarily stored in the _____ for excretion.