

THE HUMAN URINARY SYSTEM

URINE

- ◆ Urine consists of excess _____, excess salt, urea and uric acid.

PARTS OF THE URINARY SYSTEM

- ◆ **Renal Arteries** – 2 renal arteries constantly transport blood to the _____
- ◆ **Kidneys** – 2 kidneys composed of millions of nephrons constantly filter about 170 to 200 litres of _____ to produce about 1.5 to 2 litres of _____ daily.
- ◆ **Renal Veins** – 2 renal veins return useful nutrients back into the body circulation.
- ◆ **Ureters** – 2 ureters carry urine from the kidneys to the urinary _____.
- ◆ **Urinary Bladder** – The urinary bladder temporarily stores urine until it is released from the body.
- ◆ **Urethra** – The urethra is the _____ that carries urine from the urinary bladder to the outside of the body.

THE STRUCTURE OF THE KIDNEY

- ◆ There are 2 kidneys located on the _____ wall of the abdominal cavity.
- ◆ Each kidney has 3 regions, the outer **cortex**, the middle **medulla** and the inner **pelvis**.

THE NEPHRON

- ◆ The nephron is the basic filtering unit of the _____.
- ◆ There are over 1 million nephrons in each kidney.
- ◆ 2 important processes occur in the nephron – filtration and reabsorption.

Filtration

- ◆ Blood pressure of the **Renal Artery** forces blood plasma fluid to be filtered through the _____ of the **Glomerulus** into **Bowman's Capsule**.
- ◆ Blood _____ and large proteins remain in the glomerulus.
- ◆ The filtrate which enters Bowman's Capsule contains a large amount of water, salt, urea and uric acid to be excreted, but also useful nutrients that the body needs such as _____. The filtrate does not contain blood cells nor large proteins.

Reabsorption

- ◆ As the filtrate containing both wastes and useful nutrients passes through the **Convulated Tubules** and the **Loop of Henle**, the useful substances such as water and glucose are _____ through the walls of the tubule back into the **Renal Vein**. Water is reabsorbed passively by osmosis. Glucose is reabsorbed by active _____.
- ◆ Desert animals need to reabsorb more water and therefore have a very long Loop of _____ in each nephron. A cross-section of the kidney of a desert animal would show a thicker medulla where the Loop of Henle is situated.
- ◆ The urine formed then travels through the **Collecting Tubule** to the pelvis of the kidney and then to the _____.