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 kidney.
• **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 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 **Convoluted 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 ____________.