**13. Excretion in humans**

* **State that urea is formed in the liver from excess amino acids**
* **State that carbon dioxide is excreted through the lungs**
* **State that the kidneys excrete urea and excess water and salts**
* **Explain the need for excretion, limited to toxicity of urea and carbon dioxide**
* **Describe the role of the liver in the assimilation of amino acids by converting them to proteins, including plasma proteins, e.g. fibrinogen**
* **Define deamination as the removal of the nitrogen-containing part of amino acids to form urea**
* **Explain that the volume and concentration of urine produced is affected by water intake, temperature and exercise**
* **Identify on drawings, diagrams and images, the ureters, bladder and urethra**
* **Outline the structure of the kidney, limited to the cortex, medulla and ureter**
* **Outline the structure and functioning of a kidney tubule, including:**
  + **the role of the glomerulus in the filtration from the blood of water, glucose, urea and salts**
  + **the role of the tubule in the reabsorption of all of the glucose, most of the water and some salts back into the blood, leading to the concentration of urea in the urine as well as loss of excess water and salts (details of these processes are not required)**
* **Explain dialysis in terms of salt balance, the maintenance of glucose concentration and the removal of urea**
* **Describe the use of dialysis in kidney machines**
* **Discuss the advantages and disadvantages of kidney transplants, compared with dialysis**