

Answers to end-of-chapter questions

Chapter 12: Excretion

- 1 waste products, metabolism, dioxide, respiration, lungs, liver, amino acids, kidneys, urine
- 2 a There are two ureters, which lead from the kidneys to the bladder, while the urethra leads from the bladder to the outside of the body;
- b Urine is a liquid that contains the nitrogenous waste product, urea;
- c Excretion is the removal of toxic waste products from the body, which have been made inside body cells – such as urea and carbon dioxide. Egestion is the removal of undigested food material, in the form of faeces. This material has never been inside a body cell, but has just travelled through the alimentary canal from mouth to anus;
- 3 a A; [1]
- b partially permeable; [1]
- c molecules are in constant motion;
small molecules can pass through the pores in the membrane;
net movement is from a high concentration to a low concentration;
by diffusion;
molecules D and E will diffuse from right to left;
water molecules also diffuse through the pores in the membrane;
down a water potential gradient;
by osmosis; [max 6]
- d water;
glucose;
urea;
amino acids / other named small molecule (e.g. hormones, broken down toxins); [4]
- e reference to high pressure;
forcing materials from blood in glomerulus into renal capsule;
liquid on both sides of the membrane flows continuously;
maintaining a concentration gradient; [max 3]
- f reabsorption;
from the tubule into the blood;
all glucose is reabsorbed;
reference to active transport;
most of the water is reabsorbed;
by osmosis;
urea remains in the liquid in the tubule; [max 5]