

## 14 Excretion and the kidneys - answers

1 Carbon dioxide, urea, uric acid, spent hormones, excess water and salts (any four) have to be excreted from the body.

2 The kidneys, lungs and liver have an excretory function.

3 The missing words are (A) renal, (B) cortex, (C) blood pressure, (D) proteins, (E) Bowman's capsule (or renal capsule), (F) renal tubule, (G) glucose, (H) salts, (I) water, (J) urine, (K) ureter, (L) bladder.

4 (b) In hot weather, urine becomes more concentrated and darker in colour.

5 (c) You would not normally expect to find glucose in a urine sample.

6 (a) Blood in the renal vein will have less oxygen and more carbon dioxide (as a result of the kidney's respiration) and less urea, than blood in the renal artery.

7 Water is lost from the body by evaporation (lungs and skin), urination and defaecation (faeces always contain water).

8 (a) If the concentration of solutes in the blood rises, more water is reabsorbed in the kidney tubules. (This helps to reduce the concentration of the blood.)

9 (c) Water, urea and uric acid can pass through the dialysis tubing into the bathing solution. (You could argue that, if the patient's blood contained excessive salts or glucose, these too would escape.)

10 Drugs are used to suppress the patient's immune response to foreign tissue. The donor is as closely related as possible to the patient (or the tissue types are very similar).

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Organ	Substances regulated
Lungs	oxygen, carbon dioxide
Liver	glucose, amino acids
Kidneys	urea, uric acid, water, salts