

13.1 Excretion in humans

Name: _____ Class: _____ Date: _____

Total: 10 marks

KEY WORDS urea 尿素 • nephron 肾单位 • amino acids 氨基酸 • liver 肝脏 • excretion 排泄

Objective

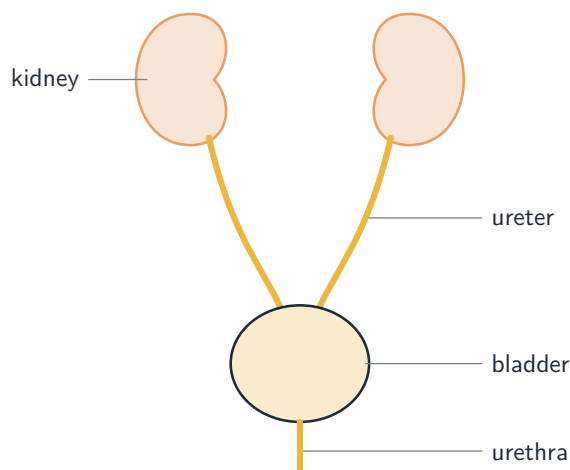
Build the skills to answer exam questions on **excretion in humans** 人体排泄 — the wastes removed, the **urinary system** 泌尿系统, the **nephron** 肾单位, and **urea** 尿素 from the liver.

You must be able to:

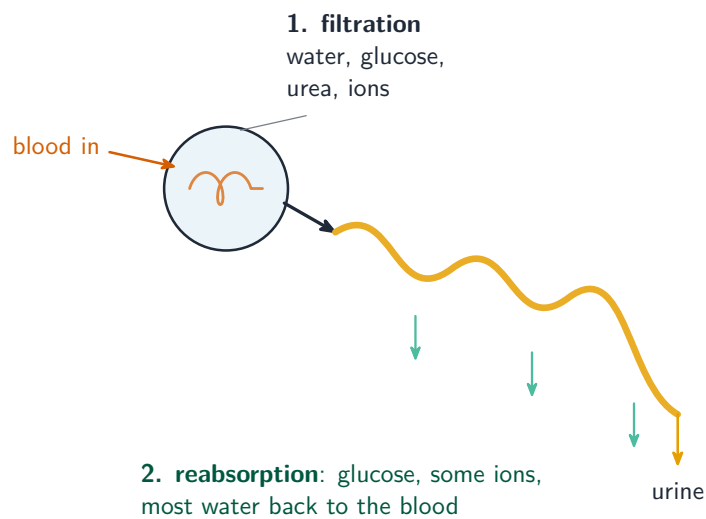
- define excretion and name the main wastes
- state the urine pathway and the role of the kidney
- describe filtration and reabsorption in a nephron; explain how urea is made

1 Worked examples

■ Kidney and nephron



Urine path: kidney → ureter → bladder → urethra



Glomerulus filters; the nephron reabsorbs all glucose, some ions and most water — what's left is urine

- **urea** is made in the **liver** from excess amino acids (deamination); it is toxic.

2 Practice

2.1 Name the two main waste products removed by excretion.

[2]

2.2 State the pathway of urine from the kidney to outside the body.

[2]

3 Exam-style questions

3.1 Urea is made in the:

[1]

- **A** kidney
- **B** liver
- **C** bladder
- **D** lungs

3.2 A nephron cleans the blood.

(a) Name the two main processes in a nephron. [2]

(b) State which substances are reabsorbed into the blood. [2]

3.3 Explain why urea must be excreted from the body. [1]

Solutions

2.1 carbon dioxide; urea.

2.2 kidney → ureter → bladder → urethra.

3.1 B. Urea is made in the liver.

3.2 (a) filtration; reabsorption.

(b) all the glucose; some ions; most of the water.

3.3 because urea is toxic (poisonous) if it builds up in the blood.