

The urinary system and the kidneys: practice questions

6 questions · 16 marks · mark scheme at the back

For Edexcel GCSE Biology 1BI0 and Combined Science 1SC0. **Triple only** is not in Combined Science. **Higher tier** is only on the Higher paper.

Name

Total / 16

1 **Triple only** [1 mark]

Which tube carries urine from the kidney to the bladder?

- A. ☐ Urethra
- B. ☐ Renal vein
- C. ☐ Ureter
- D. ☐ Renal artery

2 **Triple only** [2 marks]

State where urea is produced and what it is produced from.

3 **Triple only** [3 marks]

Describe how the kidney filters blood in the glomerulus and Bowman's capsule.

4 **Triple only** [3 marks]

Glucose is filtered at the glomerulus, but the urine of a healthy person contains no glucose. Explain why.

5

Triple only

Higher tier

[4 marks]

On a hot day a person sweats a lot and the water content of the blood falls. Explain how ADH helps to return the water content to normal.

6

Triple only

[3 marks]

Describe two treatments for kidney failure.

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1] Triple only

C C (1)

2. [2] Triple only

- in the liver (1)
- from the breakdown of excess amino acids (1)

3. [3] Triple only

- blood in the glomerulus is at high pressure (1)
- small molecules such as water, glucose, urea and ions are forced into the Bowman's capsule (1)
- large molecules such as proteins and blood cells stay in the blood (1)

4. [3] Triple only

- all the glucose is reabsorbed (1)
- back into the blood (1)
- by active transport, using energy from respiration (1)

5. [4] Triple only Higher tier

- more ADH is released (from the pituitary gland) (1)
- ADH makes the collecting duct more permeable to water (1)
- more water is reabsorbed into the blood (1)
- a small volume of concentrated urine is produced (1)

6. [3] Triple only

- dialysis: blood passes through a machine, separated from dialysis fluid by a partially permeable membrane (1)
- urea (and excess ions) pass out of the blood into the dialysis fluid (1)
- transplant: a healthy kidney from a donor is put into the patient (1)
- the donor kidney must be a good tissue match / the patient takes drugs to stop the immune system rejecting it (1)
- Max 3