

0 6

Water conservation is important to the human body.

0 6 . 1

Which gland releases the hormone that controls water loss from the body?

[1 mark]Tick (✓) **one** box.

Adrenal

Pancreas

Pituitary

Thyroid

0 6 . 2

Which hormone helps the kidneys to control water loss from the body?

[1 mark]Tick (✓) **one** box.

ADH

Adrenaline

LH

Thyroxine



0 6 . 3 A man is walking across a desert.

The man has used up his supply of drinking water.

Explain how the gland you named in Question **06.1** and the kidneys reduce water loss.

[3 marks]

Question 6 continues on the next page

Turn over ►



0 6 . 4

Some people have kidney failure.

Doctors may treat patients with kidney failure by either:

- dialysis
- a kidney transplant.

Explain **two** biological reasons why most doctors think that a kidney transplant is a better method of treatment than dialysis.

Do **not** refer to cost or convenience.

[4 marks]

Reason 1 _____

Reason 2 _____

9



| Question | Answers | Extra information | Mark | AO / Spec. Ref. |
|----------|--|---|------|--------------------|
| 06.1 | pituitary | | 1 | AO1 4.5.3.3 |
| 06.2 | ADH | | 1 | AO1 4.5.3.3 |
| 06.3 | high(er) concentration of blood causes (more) ADH / hormone release | allow ecf for name of hormone from Question 06.2 ignore name of gland | 1 | 4.5.3.3 AO2 |
| | (and hormone / ADH causes) increased permeability of kidney tubules (to water) | allow low(er) water potential of blood causes (more) ADH / hormone release allow alternative descriptions in terms of – eg low(er) water concentration / level or high(er) osmotic pressure or high(er) solute concentration / level | 1 | AO1 |
| | (so) increased water reabsorption | allow increased permeability of collecting duct / distal convoluted tubule allow more water taken back into blood ignore reference to urine | 1 | AO1 |

| Question | Answers | Extra information | Mark | AO / Spec. Ref. |
|--------------|---|---|-------------------------------------|------------------------|
| 06.4 | <p>changes in concentrations / levels of substances / urea are minimised</p> <p>(so) less / no chance of causing damage to body cells / tissues</p> <p>not repeatedly puncturing skin or blood not in contact with machine</p> <p>(so) less / no chance of infection or less / no chance of blood clots or no need to take anti-clotting drugs</p> | <p>allow converse if clearly describing dialysis explanation must match reason</p> <p>allow no change in concentration / level of substances / urea allow correctly named substances</p> <p>allow eg less / no osmotic stress or not poisoned by urea</p> <p>allow blood does not leave the body</p> <p>allow less / no chance of microorganisms entering body</p> <p>allow only one operation so less chance of infection for 2 marks allow dialysis requires anti-clotting drugs and so may lose more blood if cut for 2 marks</p> | <p>1</p> <p>1</p> <p>1</p> <p>1</p> | <p>AO3 4.5.3.3</p> |
| Total | | | 9 | |