

11.3 The Kidney & Osmoregulation

Question Paper

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|------------|----------------------------------|
| Course | DP IB Biology |
| Section | 11. Animal Physiology (HL Only) |
| Topic | 11.3 The Kidney & Osmoregulation |
| Difficulty | Easy |

Time allowed: 10
Score: /5
Percentage: /100

Question 1

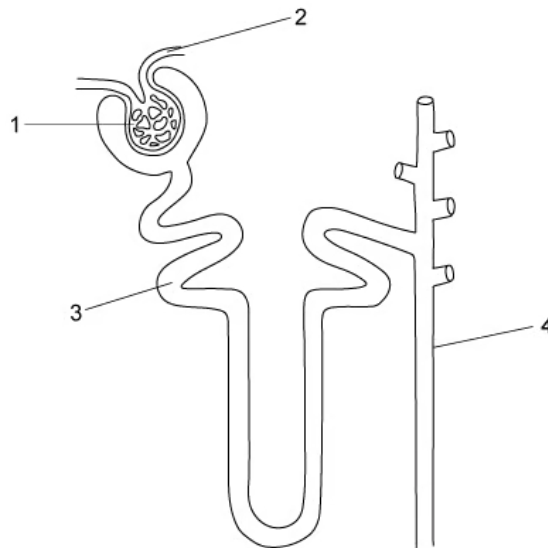
Which of the following is a correct definition of **osmoconforming**?

- A. The osmolarity of an organism's body fluids matches those of other organisms around it.
- B. Maintaining a constant body fluid osmolarity regardless of the osmolarity of the surrounding environment.
- C. Cells with a lower osmolarity than the surrounding environment will gain water by osmosis and shrink.
- D. The osmolarity of an organism's body fluids matches those of its surroundings.

[1 mark]

Question 2

Which row in the table correctly identifies the structures labelled **1-4** in the diagram of a nephron?



| | 1 | 2 | 3 | 4 |
|-----------|------------------|--------------------|----------------------------|--------------------------|
| A. | Glomerulus | Afferent arteriole | Loop of Henle | Collecting duct |
| B. | Glomerulus | Efferent arteriole | Proximal convoluted tubule | Collecting duct |
| C. | Bowman's capsule | Efferent arteriole | Loop of Henle | Distal convoluted tubule |
| D. | Bowman's capsule | Afferent arteriole | Proximal convoluted tubule | Renal pelvis |

[1 mark]

Question 3

Which of the following statements about dehydration is **not** correct?

- A. Dehydration can result from excessive sweating.
- B. During dehydration more metabolic waste is removed from the body.
- C. Symptoms of dehydration include a drop in blood pressure and concentrated urine.
- D. Dehydration can occur if water is lost from the body and not replaced.

[1 mark]

Question 4

Which of the following statements about excretion of nitrogenous waste are correct?

- I.
Nitrogenous waste comes from the breakdown of nucleic acids.
 - II.
Excreting nitrogenous waste in the form of urea or uric acid is more energy efficient than excreting it in the form of ammonia.
 - III.
Birds and insects excrete nitrogenous waste in the form of uric acid.
- A. I only.
 - B. I and III only.
 - C. I, II, and III.
 - D. II and III only.

[1 mark]

Question 5

Which of the following rows correctly shows the concentration of substances in dialysis fluid compared to the blood of an otherwise healthy individual at the start of dialysis?

| | Ions | Glucose | Urea |
|----|---------|---------|------|
| A. | Low | Similar | Low |
| B. | High | High | Low |
| C. | Similar | Similar | Low |
| D. | Similar | Similar | High |

[1 mark]



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