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Level: HL IB in Biology
Subject: Biology
Topic: IB HL Biology
Type: Mark Scheme

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All International Baccalaureate IB Topic Questions HL Biology

BIOLOGY

HL - IB

Key skills

Answer 1

The correct answer is B.

- The first image shows red blood cells with a normal appearance, so they have not taken on or lost water by osmosis. They are in a solution that matches the water potential of their cytoplasm, which is described as isotonic
- The second image shows cells that have shrunk due to losing water to their surroundings. This happens to animal cells placed in a solution with a lower water potential than the cell contents, which is described as hypertonic
- The third image shows cells that have expanded due to taking on water by osmosis. This happens to animal cells placed in a solution with higher water potential, which is described as hypotonic.

Answer 2

The correct answer is C.

- In pure water the water molecules will move from the surroundings, which are hypotonic, into the cells via osmosis, causing the cells to take on water and swell
- The cell wall of plant cells is strong and withstands the pressure of increased water in the cell cytoplasm. Animal cells do not have cell walls, so animal cells that take on water may burst while plant cells swell and become turgid.

A, B and D are all correct statements, but none of them explain the observations described.