

APOLLO

Water potential SL

Biology

First assessment 2025

3 questions | mark schemes

Mark-scheme answers

Biology SL | Paper 1A | May 2025 TZ1 | Q12 | 1 marks

12. C

6.	a	a. cohesion is caused by the polarity of water OR water molecules have a negative and positive end; b. water molecules are attracted to each other OR water molecules are linked by hydrogen bonds; c. (cohesion) enables water to move along stems/xylem OR enables a continuous column of water in transpiration/transpiration pull; d. surface tension provides a habitat for some organisms OR some insects can walk on water surface because of surface tension/other verified example OR cohesion is related to buoyancy allowing organisms (like ringed seal) to float; e. helps animals regulate body temperature (through evaporative cooling); f. (cohesion causes high specific heat) so maintains a stable temperature in aquatic environments OR water is liquid at a wide range of temperatures supporting many aquatic habitats;		4 max
6.	b	a. transpiration is the evaporation of water from the stomata/openings of the plant leaf; b. increase in humidity will decrease water loss/transpiration; c. increase in temperature will increase water loss/transpiration; d. increase in wind/ air movement will increase water loss/transpiration; e. increase in light intensity will increase water loss/transpiration;	<i>Accept vice versa for these statements</i>	4 max

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2225 – 6012M

Question		Answers	Notes	Total
6.	c	a. osmosis is <u>water</u> moving through a partially/semi permeable membrane/cell membrane/aquaporins; b. osmosis is a form of simple diffusion OR water travels down the (water) concentration gradient OR osmosis is passive; c. the solute concentration determines the direction of net movement of water; d. plant cells in hypotonic solutions will take in water; e. they will swell/are turgid/develop turgor pressure (in hypotonic solutions); f. cell wall prevents the plant cells from bursting due to water pressure (in hypotonic solutions); g. plant cells in hypertonic solutions will lose water; h. they will shrink/get smaller/flaccid (in hypertonic solutions); i. the cell membrane will pull away from the cell wall/plasmolysis (in hypertonic solutions); j. isotonic solutions are the same concentration as inside the plant cells/cytoplasm/cell sap; k. plant cells will have no net change (in isotonic solutions)/water moves equally in and out of the cell/dynamic equilibrium;		7 max

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2225 – 6012M

Question	Answers	Notes	Total
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Mark-scheme answers

Biology SL | Paper 1A | Nov 2025 TZ1 | Q12 | 1 marks

12. C