

01.0610\_s16\_MS\_41 Q: 4

	Answer	Mark	Partial Marks
(a)	carbon dioxide/CO <sub>2</sub> ; (aerobic) respiration ; (simple) diffusion ;	[3]	A excretion I gas exchange
(b)	water enters by <u>osmosis</u> ; down a <u>water potential</u> gradient/high(er) to low(er) <u>water potential</u> ; through partially permeable membrane ; needs to remove water to prevent bursting ;	[max 3]	R water concentration A semi- /selectively/ differentially
(c)	as concentration of sea water increases the removal of water decreases ; as concentration of sea water increases the water potential gradient decreases ; therefore less water enters at higher concentrations of sea water ; less excess water ;	[max 3]	A 0% to 12%
(d)	cell walls, inelastic/ do not stretch/ rigid/ inflexible/ keep shape of cell ; cells, are turgid/ have high turgor pressure ; resist any increase in, volume/pressure ; these cells do not absorb excess water ; the cells will not burst ;	[max 3]	I strong/ tough/ don't break  A (very) little water enters
		[Total: 12]	

02. 0610\_s16\_MS\_42: 4

	Answer	Mark	Partial Marks
(a)	movement/diffusion, of water (molecules) ; from high <u>water potential</u> to low <u>water potential</u> / down <u>water potential</u> gradient ; across a partially permeable membrane ;	[3]	
(b) (i)	<u>1.0</u> (mol dm <sup>-3</sup> sodium chloride solution) ;	[1]	
(ii)	(to remove) excess /surface/ AW, water/ AW, on potato sticks ; to measure the mass of the potato (stick) only ;	[max 1]	I inaccurate unqualified R dry mass
(c)	cells/ potato sticks, have lost water (by osmosis) ; from high <u>water potential</u> to low <u>water potential</u> / down <u>water potential</u> gradient ; (cells/ tissue/ potato) were, plasmolysed/ flaccid ; loss of <u>turgor</u> (pressure) ; not enough pressure of water pushing on cell walls ;	[max 3]	I water concentration  I incipient (plasmolysis) A reduced turgidity / description
(d)	protein denatured (when cooked) ; cell membrane, damaged/destroyed (when cooked) ; no <u>osmosis</u> will occur ;	[max 2]	R killed proteins I killed /denatured, cells I damaged <u>cell wall</u>
		[Total: 10]	

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