

# Diffusion, Osmosis, Active Transport 2 MS

## QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	water / H <sub>2</sub> O	accept oxygen allow H <sub>2</sub> O do not allow H <sub>2</sub> O or H <sub>2</sub> O	1
a)ii)	the mineral ions are absorbed by active transport  the absorption of mineral ions needs energy		1  1
a)iii)	have (many root) hairs  (which) give a large surface area (for absorption)		1  1
Total marks			5

## QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	0		1
a)ii)	osmosis		1
b)	0.5 no change in mass / weight or no (net) osmosis / same amount of water in and out	allow 'chip / it stays the same'	1 1
c)	repeat / use more chips in each solution	allow use of other people's results do not allow 'get more results'  unqualified do not allow leave longer / use more concentrations / better instrumentation	1
Total marks			5

**QUESTION 3**

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	A		1
b)i)	diffusion		1
b)ii)	respiration		1
b)iii)	mitochondria		1
b)iv)	photosynthesis		1
Total marks			5

**QUESTION 4**

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	because water enters (the cell / it / named cell)	do not accept salt / sugar / solution entering	1
	by osmosis / diffusion	if osmosis / diffusion not given accept concentration inside cell	1
	through a partially permeable membrane	greater than outside cell assume concentration refers to solute concentration unless answer indicates otherwise allow water goes up the  concentration gradient allow water goes down its  concentration gradient do not accept if diffusion of salt / sugar allow semi / selectively permeable membrane or description	1
b)i)	(plant cells) have (cell) wall	accept animal cells have no (cell) wall ignore reference to cell membrane do not accept reference to other organelles or any implication that animal cells have a cell wall eg plant cells have a thicker cell wall	1
Total marks			4

**QUESTION 5**

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	xylem and phloem	either order allow words ringed in box allow mis-spelling if unambiguous	1
b)i)	movement / spreading out of particles / molecules / ions / atoms  from high to low concentration	ignore names of substances / 'gases'  accept down concentration gradient ignore 'along' / 'across' gradient ignore 'with' gradient	1  1
b)ii)	oxygen / water (vapour)	allow O <sub>2</sub> /O <sub>2</sub> ignore O <sub>2</sub> /O allow H <sub>2</sub> O/H <sub>2</sub> O ignore H <sub>2</sub> O	1
Total marks			4

**QUESTION 6**

QUESTION	ANSWER	EXTRA INFORMATION	MARKS								
a)	<table border="1"> <thead> <tr> <th>0 marks</th> <th>Level 1 (1–2 marks)</th> <th>Level 2 (3–4 marks)</th> <th>Level 3 (5–6 marks)</th> </tr> </thead> <tbody> <tr> <td>No relevant content.</td> <td>An example is given of a named substance <b>or</b> a process <b>or</b> there is an idea of why diffusion is important eg definition.</td> <td>At least one example of a substance is given <b>and</b> correctly linked to a process in either animals or plants.</td> <td>There is a description of a process occurring in either animals or plants that is correctly linked to a substance <b>and</b> a process occurring in the other type of organism that is correctly linked to a substance.</td> </tr> </tbody> </table>	0 marks	Level 1 (1–2 marks)	Level 2 (3–4 marks)	Level 3 (5–6 marks)	No relevant content.	An example is given of a named substance <b>or</b> a process <b>or</b> there is an idea of why diffusion is important eg definition.	At least one example of a substance is given <b>and</b> correctly linked to a process in either animals or plants.	There is a description of a process occurring in either animals or plants that is correctly linked to a substance <b>and</b> a process occurring in the other type of organism that is correctly linked to a substance.		
0 marks	Level 1 (1–2 marks)	Level 2 (3–4 marks)	Level 3 (5–6 marks)								
No relevant content.	An example is given of a named substance <b>or</b> a process <b>or</b> there is an idea of why diffusion is important eg definition.	At least one example of a substance is given <b>and</b> correctly linked to a process in either animals or plants.	There is a description of a process occurring in either animals or plants that is correctly linked to a substance <b>and</b> a process occurring in the other type of organism that is correctly linked to a substance.								
b	<p>examples of points made in the response</p> <p>Importance of diffusion:</p> <ul style="list-style-type: none"> <li>•to take in substances for use in cell processes</li> <li>•products from cell processes removed</li> </ul> <p>Examples of processes and substances:</p> <ul style="list-style-type: none"> <li>•for gas exchange / respiration:</li> </ul>	<p>Description of processes might include:</p> <ul style="list-style-type: none"> <li>•movement of particles / molecules / ions</li> <li>•through a partially permeable membrane</li> <li>•(movement of substance) down a concentration gradient</li> </ul> <p>osmosis: turgor / support / stomatal movements</p>									

	<p>O<sub>2</sub> in / CO<sub>2</sub> out</p> <ul style="list-style-type: none"> <li>•for gas exchange /</li> <li>photosynthesis: CO<sub>2</sub> in / O<sub>2</sub> out</li> <li>•food molecules absorbed: glucose, amino acids, etc</li> <li>•water absorption in the large intestine</li> <li>•water lost from leaves / transpiration</li> <li>•water absorption by roots</li> <li>•mineral ions absorbed by roots</li> </ul>		
Total marks			6