

Unit 1

Key Area 2 Revision Questions

Mark Scheme

1. B
2. C
3. D
4. D
5. A
6. D
7. D
8. A
9. B
10. C
11. B
12. B
13. A
14. C
15. B
- 16.

(a)	Does not require energy/ATP.	1	Acceptable: additional correct information.
(b)	2	1	
(c)	Plasmolysed	1	Not acceptable: flaccid
(d)	Plant cells/cell 4 have a cell wall or animal cells/cell 3 do not have a cell wall. (1) Cell wall prevents cells from bursting/no cell wall so cell bursts. (1)	2	Not acceptable: cell wall protects it, but would not negate an otherwise correct answer.

17.

(a)	Selectively permeable/ semi-permeable/ (contains) proteins/ (phospho)lipids/protein channels/ protein carriers	1	Not acceptable: porous/pores /protein gates.	
(b)	(i)	Leaf cell: <ul style="list-style-type: none"> • cell swells/becomes turgid (or suitable description of turgid) Red blood cell: <ul style="list-style-type: none"> • cell swells/bursts /may burst 	1	Not acceptable: description of process of osmosis alone.
	(ii)	1. Diffusion/active transport 2. Definition: Diffusion – Movement of molecules/particles from a high to a low concentration. OR down the concentration gradient. Active Transport – Movement of molecules/ions from a low to a high concentration. OR against/up the concentration gradient.	1	To gain this mark the definition must relate to process chosen in part 1. ...across /through a selectively permeable membrane does not negate. Abbreviations of concentration eg conc. only acceptable if the full word is written at least once. Not acceptable: <ul style="list-style-type: none"> • movement of ‘substances’ • ‘with’ the concentration gradient • ‘along’ the concentration gradient (but this would not negate a correct response). Extra wrong information negates.

18.

(a)	(i)	+25	1	+ symbol must be included. Accept answer not written in table (don't need % sign).
	(ii)	To remove excess/surface water/liquid/solution OR So water/liquid/solution doesn't affect the results or alter the mass/weight	1	To remove excess <u>vinegar</u> is not acceptable, but answer must refer to water/liquid/solution.
	(iii)	<p><u>Beaker A</u> Water entered (the egg) from a high water concentration (outside) to a low water concentration (inside)/down a concentration gradient</p> <p>OR</p> <p><u>Beaker B</u> Water left/leaves (the egg) from a high water concentration (inside) to a low water concentration (outside)/down a concentration gradient</p>	<p>2</p> <p>OR</p> <p>2</p>	<p>Referring to 'egg' as 'cell' anywhere does not negate.</p> <p>Must have direction (1) and down concentration gradient/high water concentration to low water concentration (1).</p> <p>Along a concentration gradient alone is insufficient but would not negate a correct response.</p> <p>HWC to LWC is not acceptable.</p> <p>Must have direction (1) and down concentration gradient/high water concentration to low water concentration (1).</p> <p>Along a concentration gradient alone is insufficient but would not negate a correct response.</p> <p>HWC to LWC is not acceptable.</p>

(b)	<p>Passive transport doesn't require energy/ATP, but active transport does</p> <p>OR</p> <p>Passive transport moves down a concentration gradient/from high to low, but active transport goes up/against a concentration gradient/from low to high</p>	1	<p>Accept reference to diffusion or osmosis in place of passive transport.</p> <p>Comparison required.</p> <p>Along a concentration gradient is not acceptable.</p>
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19.

(a)	<p>Osmosis</p>	1	
(b)	<p>Water moves into the (model) cell/bag/salt solution 1</p> <p>From a high water concentration to a low water concentration/down a concentration gradient 1</p> <p>OR alternative answer for 2 marks: Water moves from a high water concentration outside to a low water concentration inside the (model) cell/bag/salt solution</p>	2	<p>Direction = 1 mark</p> <p>Explanation = 1 mark</p> <p>Not Acceptable - '.....along a concentration gradient' OR HWC / LWC</p>
(c)	<p>0.9</p>	1	
(d)	<p>Description of concentration change - must be a smaller concentration gradient than shown/ lower temperature/ wider capillary tube/ seal not tight/ less water in the beaker/bag not fully submerged</p>	1	