

Question Number	Answer	Acceptable answers	Mark
<b>1(a)(i)</b>	<p>Any <b>two</b> of the following points:</p> <p>(yeast cell)</p> <ul style="list-style-type: none"> <li>• has a nucleus (1)</li> <li>• does not have a flagellum (1)</li> <li>• does not have a plasmid (1)</li> </ul> <p>(bacterial cell)</p> <ul style="list-style-type: none"> <li>• has chromosomal DNA / circular DNA (1)</li> <li>• has a capsule (1)</li> <li>• has a slime coat (1)</li> <li>• does not have mitochondria (1)</li> </ul>	<p>Accept: has a vacuole</p> <p>accept: named bacterial feature e.g pilli, small ribosome, if not labelled in yeast cell</p>	<b>(2)</b>

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<b>1(a)(ii)</b>	does not have chloroplasts/chlorophyll	cannot photosynthesise	<b>(1)</b>

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<b>1(b)(i)</b>	$7 \times 10^9$ (-) $5 \times 10^{10}$ <b>(1)</b> $=$ (-) $4.3 \times 10^{10}$ or (-) $43 \times 10^9$	<p>two marks for correct bald answer</p> <p>accept 43 000 000 000</p> <p>allow one mark for correct subtraction from wrongly selected numbers</p> <p>only accept the numbers in the table with a correct minus calculation</p>	<b>(2)</b>

Question Number	Answer	Acceptable answers	Mark
<b>1(b)(ii)</b>	<p>A description including any <b>two</b> of the following points:</p> <ul style="list-style-type: none"> <li>involved in defence against disease / part of immune system (1)</li> <li>phagocytosis (1)</li> <li>antibody / antitoxin production (1)</li> </ul>	<p>accept: (fight pathogen / harmful microorganism / named microorganism)</p> <p>accept: engulf / ingest / surround / digest cells</p> <p>reject: <u>make</u> antigens</p> <p>ignore: refs to role of red blood cells or platelets</p>	<b>(2)</b>

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<b>1(b)(iii)</b>	tired / lack of energy / lethargy / short of breath	<p>anaemia / fainting / less oxygen / increased anaerobic respiration</p> <p>reject: references to asthma</p>	<b>(1)</b>

Question number	Answer	Mark
2(a)(i)	Any one variable from <ul style="list-style-type: none"> <li>• temperature</li> <li>• amount of drying</li> <li>• type of potato</li> <li>• age of potato</li> </ul>	(1)

Question number	Answer	Mark
2(a)(ii)	To get an accurate reading of mass	(1)

Question number	Answer	Mark
2(a)(iii)	An explanation that combines identification via a judgement (1 mark) to reach a conclusion via justification/reasoning (1 mark):  any <b>one</b> identification point from: <ul style="list-style-type: none"> <li>• there is no change in mass at <math>0.3 \text{ mol dm}^{-3}</math> (check once drawn) (1)</li> <li>• this is the isotonic salt concentration in the potato (1)</li> </ul> <b>Plus</b> reasoning/justification <ul style="list-style-type: none"> <li>• because there is no net movement of water/no salt concentration gradient (1)</li> </ul>	(2)

Question number	Answer	Mark
2(a)(iv)	<ul style="list-style-type: none"> <li>• repeat the test using intermediate concentrations (between <math>0.2</math> and <math>0.4 \text{ mol dm}^{-3}</math>)</li> </ul>	(1)

Question number	Answer	Mark
2(b)	B	(1)

Question number	Answer	Additional guidance	Mark
2(c)	<ul style="list-style-type: none"> <li>• <math>68 \div 8000</math> (1)</li> <li>• <math>0.0085</math> (1)</li> <li>• <math>8.5 \text{ (}\mu\text{m)}</math> (1)</li> </ul>	award full marks for correct numerical answer without working	(3)