



*Rewarding Learning*

**General Certificate of Secondary Education  
2010–2011**

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**Science: Double Award (Modular)**

Living Organisms and the Processes of Life

End of Module Test

**A**

Foundation Tier

**[GDA01]**

**THURSDAY 24 FEBRUARY 2011, MORNING**

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**MARK  
SCHEME**

		AVAILABLE MARKS						
1	(a) Calcium/Ca	[1]						
	(b) To allow water/dissolved minerals to pass through easily/transport water/allow substance pass through/no obstruction	[1]						
	(c) Leaf	[1]						
		3						
2	(a) Food/meal/named food with sugar	[1]						
	(b) Insulin	[1]						
	(c) Diabetes	[1]						
	(d) It would be digested/broken down/destroyed	[1]						
		4						
3	(a) Any <b>two</b> from: Food is digested from large molecules to <b>small(er)</b> molecules; from insoluble to <b>soluble</b> ; so it can be absorbed/go into blood	[2]						
	(b) C and E (stomach and small intestine) [1] each	[2]						
	(c) Absorption of water	[1]						
		5						
4	(a) Transpiration/evaporation	[1]						
	(b) <table border="1" style="display: inline-table; vertical-align: middle;"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>48</td> <td>24</td> </tr> <tr> <td>2.0</td> <td>1.0</td> </tr> </tbody> </table> = [1] marks for rows	A	B	48	24	2.0	1.0	[2]
A	B							
48	24							
2.0	1.0							
	(c) Increased loss from A <b>or</b> less from B increased surface area for water absorption/A more roots <b>or</b> converse B has less roots	[2]						
		5						
5	(a) <b>More</b> carbon dioxide/ <b>less</b> oxygen	[1]						
	(b) Estimates not accurate/other (minor) gases make up remainder <b>or</b> named, e.g. argon/water vapour gas not accounted for	[1]						
	(c) Anaerobic	[1]						
		3						

		AVAILABLE MARKS
<p><b>6</b> Any <b>four</b> from:  Destarch the plant/leave in dark cupboard for 48 hrs;  Then place plant in bright light for period of time;  Kill leaf by boiling/boil (in water);  (Hot or) <b>Boil</b> in ethanol (to remove the chlorophyll; or colour) } in order for steps  Then place leaf in water (remove alcohol);  Add iodine solution;  Green region (with chlorophyll) will turn blue–black;  blue–black indicates presence of starch;  White region (has no chlorophyll) will turn brown/yellow;  brown/yellow indicates no starch present.</p>	[4]	4
<p><b>7 (a)</b> Carbon dioxide/CO<sub>2</sub>/water/H<sub>2</sub>O</p> <p><b>(b)</b> Any <b>two</b> from:  Carbon dioxide <b>diffuses</b>;  out of the blood;  into lungs/across alveoli;  (CO<sub>2</sub> is exhaled = [1])  <b>or</b>  Water lost as urine;  passes to the kidney;  via ureter;  to bladder;  expelled via urethra;  <b>or</b>  Water diffuses;  into lungs/alveoli;  and is exhaled [1].</p>	[1]	3
<p><b>8 (a)</b> Blood passes through the heart twice <b>in one circuit of the body</b>/  Blood flows from heart to lungs then back to the heart to be passed  around the body</p> <p><b>(b)</b> A Pulmonary vein  B Hepatic portal vein <b>not hpv</b></p> <p><b>(c)</b> Some oxygen is <b>used in respiration</b>;  by the <b>liver</b>.</p>	[1] [2] [2]	5
<p><b>9 (a)</b> Immunisation/vaccination/active immunity</p> <p><b>(b)</b> Any <b>two</b> from:  For the second injection the response is quicker;  a higher level of antibody production;  the level of antibodies remains higher</p> <p><b>(c)</b> Phagocytosis</p>	[1] [2] [1]	4

		AVAILABLE MARKS
<p><b>10 (a)</b> Blood is under <b>too high pressure</b> in artery</p>	[1]	
<p><b>(b)</b> Any <b>four</b> from:  more H<sub>2</sub>O <b>outside</b>/more dilute solution outside  there is a higher water concentration outside the cell/lower water <b>inside</b> the cell;  so water moves into the blood <b>cells</b>;  across a partially permeable membrane;  the cells would burst;  as they do not have a cell wall</p>	[4]	5
<p><b>11</b> Any <b>two</b> from each</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Air movements/air is not trapped/allows air to move  Remove warm air/heat is not trapped/air is not an insulator  Heat lost by radiation/or convection</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p><b>Evaporation</b> of water;  Cooling effect on the skin;  Heat lost by radiation</p> </div>	[4]	4
<p><b>12 (a)</b> Auxin is present in the left/hand side/shaded side; the impermeable sheet prevents its downward movement</p>	[2]	
<p><b>(b) (i)</b> Phototropism</p>	[1]	
<p><b>(ii)</b> Plant gets <b>more</b> light  So more photosynthesis/more growth or better photosynthesis</p>	[2]	5
<b>Total</b>		<b>50</b>