



Rewarding Learning

General Certificate of Secondary Education
2010–2011

Science: Double Award (Modular)

Living Organisms and the Processes of Life

End of Module Test

A

Foundation Tier

[GDA01]

THURSDAY 24 FEBRUARY 2011, MORNING

**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 two from: Food is digested from large molecules to small(er) molecules; from insoluble to soluble ; 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>	A	B	48	24	2.0	1.0	
A	B							
48	24							
2.0	1.0							
	= [1] marks for rows							
	= [1]	[2]						
	(c) Increased loss from A or less from B increased surface area for water absorption/A more roots or converse B has less roots	[2]						
		5						
5	(a) More carbon dioxide/ less oxygen	[1]						
	(b) Estimates not accurate/other (minor) gases make up remainder or named, e.g. argon/water vapour gas not accounted for	[1]						
	(c) Anaerobic	[1]						
		3						

		AVAILABLE MARKS
<p>6 Any four 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) Boil 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>7 (a) Carbon dioxide/CO₂/water/H₂O</p> <p>(b) Any two from: Carbon dioxide diffuses; out of the blood; into lungs/across alveoli; (CO₂ is exhaled = [1]) or Water lost as urine; passes to the kidney; via ureter; to bladder; expelled via urethra; or Water diffuses; into lungs/alveoli; and is exhaled [1].</p>	[1]	3
<p>8 (a) Blood passes through the heart twice in one circuit of the body/ Blood flows from heart to lungs then back to the heart to be passed around the body</p> <p>(b) A Pulmonary vein B Hepatic portal vein not hpv</p> <p>(c) Some oxygen is used in respiration; by the liver.</p>	[1] [2] [2]	5
<p>9 (a) Immunisation/vaccination/active immunity</p> <p>(b) Any two from: For the second injection the response is quicker; a higher level of antibody production; the level of antibodies remains higher</p> <p>(c) Phagocytosis</p>	[1] [2] [1]	4

		AVAILABLE MARKS
10 (a)	Blood is under too high pressure in artery	[1]
(b)	Any four from: more H ₂ O outside /more dilute solution outside there is a higher water concentration outside the cell/lower water inside the cell; so water moves into the blood cells ; across a partially permeable membrane; the cells would burst; as they do not have a cell wall	[4]
11	Any two from each	
	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	
	Evaporation of water; Cooling effect on the skin; Heat lost by radiation	[4]
12 (a)	Auxin is present in the left/hand side/shaded side; the impermeable sheet prevents its downward movement	[2]
(b) (i)	Phototropism	[1]
(ii)	Plant gets more light So more photosynthesis/more growth or better photosynthesis	[2]
Total		50