



*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

Foundation Tier

**[GDA01]**

**THURSDAY 19 MAY 2011, MORNING**

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**MARK  
SCHEME**

		AVAILABLE MARKS						
1	(a) points correctly plotted; straight lines joining points of bars = [1]	[2]						
	(b) 210 – CM from their line	[1]						
	(c) growing more/more active	[1]						
2	(a) B	[1]						
	(b) Sphincter muscle/sphincter <b>not</b> muscle on its own	[1]						
	(c) Osmoregulation	[1]						
3	(a) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; height: 20px; text-align: center;"><del> </del></td> <td style="text-align: center;">Causes <b>lung</b> cancer</td> </tr> <tr> <td style="width: 30%; height: 20px; text-align: center;"><del> </del></td> <td style="text-align: center;">Heart disease/irregular or increasing heart beat/addition <b>not</b> allow blood pressure</td> </tr> <tr> <td style="width: 30%; height: 20px; text-align: center;">Carbon monoxide/CO</td> <td style="text-align: center;"><del> </del></td> </tr> </table>	<del> </del>	Causes <b>lung</b> cancer	<del> </del>	Heart disease/irregular or increasing heart beat/addition <b>not</b> allow blood pressure	Carbon monoxide/CO	<del> </del>	[3]
	<del> </del>	Causes <b>lung</b> cancer						
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Carbon monoxide/CO	<del> </del>							
(b) Breathing in other peoples' smoke/ <b>not</b> allow carbon dioxide/2nd hand smoke	[1]							
4	(a) Intercostal (muscle)/intercostal	[1]						
	(b) (i) Blood capillaries/capillaries <b>not</b> blood vessels	[1]						
	(ii) Large surface area/moist/thin/permeable/one cell thick <b>not</b> allow – there are lots of them <b>not</b> expand and contract	[1]						
5	(a) place in a dark cupboard for 24 hours/overnight <b>not</b> keep away from light	[1]						
	(b) Carbon dioxide/CO <sub>2</sub>	[1]						
	(c) (i) Iodine solution	[1]						
(ii)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Leaf A</td> <td style="text-align: center;">Yellow/brown/orange</td> </tr> <tr> <td style="width: 25%; text-align: center;">Leaf B</td> <td style="text-align: center;">Blue/black</td> </tr> </table>	Leaf A	Yellow/brown/orange	Leaf B	Blue/black	[2]		
Leaf A	Yellow/brown/orange							
Leaf B	Blue/black							
		4						
		3						
		4						
		3						
		5						

			AVAILABLE MARKS
6	(a) Coronary (arteries)	[1]	5
	(b) Glucose; } either order Oxygen }	[2]	
	(c) Any <b>two</b> from: Less (animal) fat in diet; less salt in diet; balanced diet; Less alcohol; Reduce stress; <i>More</i> exercise; Stop smoking.	[2]	
7	(a) Root hair cell	[1]	4
	(b) Any <b>two</b> from: Increased surface area; for absorption; of minerals/water/or named mineral/ <b>not</b> nutrients	[2]	
	(c) Cells are in the soil so cannot absorb light/below ground cells do not photosynthesis	[1]	
8	(a) Cornea <b>not</b> conjunctiva	[1]	4
	(b) Light is bent/refracted; by the cornea/lens; Information passes along <i>optic</i> nerve (to brain)	[3]	
9	(a) Biceps contracts/shortens;/tenses/tightens Triceps relaxes/extends/gets longer	[2]	3
	(b) Muscles work against each other/when one contracts, the other relaxes Tense one/other relaxed	[1]	
10	(a) Antigens/proteins	[1]	4
	(b) Clump is ingested/engulf/consumed/digested by phagocytes/by white blood cells	[2]	
	(c) Antibodies remain in the blood/memory cells made WBC retain memory/more antibodies produced quickly	[1]	

- 11 (a) E1 – Amylase  
E2 – Lipase [2]
- (b) Amino acids [1]
- (c) Large surface area/villi/microvilli/thin/long **not** cilia [1]
- 12 Visking tubing bigger/bag bigger/swells/swollen/turgid/expands [1]

Any **two** from four:

water molecules pass through but not sugar molecules/sugar molecules too big to pass through/or H<sub>2</sub>O small enough to pass through water moves into the tubing;

by osmosis;

(down the concentration (must be clear where gradient in) gradient/higher water concentration outside the Visking tubing/concentration H<sub>2</sub>O more outside than inside

max. [2] if they have made incorrect statement ([1] for correct description, [1] for rest)

[2]

13

A		
B	Purple	
C	Yellow	Leaf <i>respires</i>
D		Spiders <i>respire</i> /respiration

[4]

**Total**

AVAILABLE  
MARKS

4

3

4

**50**