



*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]**

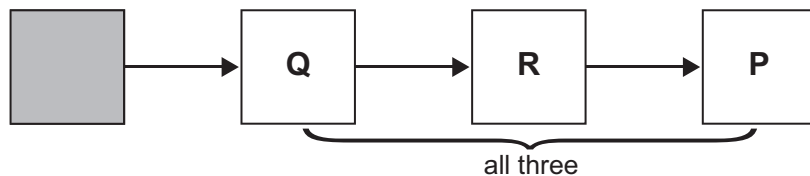
**WEDNESDAY 10 NOVEMBER, AFTERNOON**

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**MARK  
SCHEME**

|           |  |   | AVAILABLE MARKS |        |           |  |  |  |     |   |
|-----------|--|---|-----------------|--------|-----------|--|--|--|-----|---|
| 1         | (a)  | A – chloroplast/chlorophyll<br>B – vacuole  | [2]             | 4      |           |  |  |  |     |   |
|           | (b)  | Cell wall/vacuole/chloroplasts/regular shape or described   | [1]             |        |           |  |  |  |     |   |
|           | (c)  | Contains chromosomes/genes/controls the cell or reaction/stores DNA/contains <b>genetic</b> info  | [1]             |        |           |  |  |  |     |   |
| 2         | (a)  | <table border="1"> <thead> <tr> <th>Nutrient</th> <th>Source</th> </tr> </thead> <tbody> <tr> <td>Vitamin C</td> <td></td> </tr> <tr> <td></td> <td>Butter/egg yolk/margarine/<br/>fish oil/cod or halibut/milk</td> </tr> </tbody> </table> | Nutrient        | Source | Vitamin C |  |  | Butter/egg yolk/margarine/<br>fish oil/cod or halibut/milk | [2] | 4 |
| Nutrient  | Source   |   |                 |        |           |  |  |  |     |   |
| Vitamin C |  |   |                 |        |           |  |  |  |     |   |
|           | Butter/egg yolk/margarine/<br>fish oil/cod or halibut/milk |   |                 |        |           |  |  |  |     |   |
|           | (b) (i)  | Benedicts;  | [1]             |        |           |  |  |  |     |   |
|           | (ii)   | orange-red colour if sugar is present   | [1]             |        |           |  |  |  |     |   |
| 3         | (a) (i)  | Root <i>hair cell</i>   | [1]             | 3      |           |  |  |  |     |   |
|           | (ii)   | Xylem   | [1]             |        |           |  |  |  |     |   |
|           | (b)  | Oxygen/O <sub>2</sub>   | [1]             |        |           |  |  |  |     |   |
| 4         | (a)  | Tar   | [1]             | 4      |           |  |  |  |     |   |
|           | (b)  | Any <b>two</b> from:<br>carbon monoxide; binds to red blood cells/haemoglobin;<br>displaces O <sub>2</sub> /higher affinity or described;<br>irreversible reaction  | [2]             |        |           |  |  |  |     |   |
|           | (c)  | heart disease/irregular or increasing heartbeat/emphysema/<br>bronchitis/gangrene/other mouth/throat cancer/heart attack/stroke   | [1]             |        |           |  |  |  |     |   |

5 (a)



[1]

(b) To remove chlorophyll/green pigment/decolorize

[1]

(c) Converted to sucrose/cellulose/starch/fat/oil/protein/respired

[1]

3

6 (a)

|                         |
|-------------------------|
| Amino acids             |
| Fatty acids<br>glycerol |

[3]

(b) (i) Small intestine/ileum

[1]

(ii) large surface area; maximum absorption or described for diffuse/  
help uptake

[2]

6

7 (a) Takes this time for the food to be **digested/absorbed**/time get into the blood

[1]

(b) Insulin

[1]

(c) Causes more glucose to be respired/or converted to glycogen/to be taken up into the cells/converted into fat

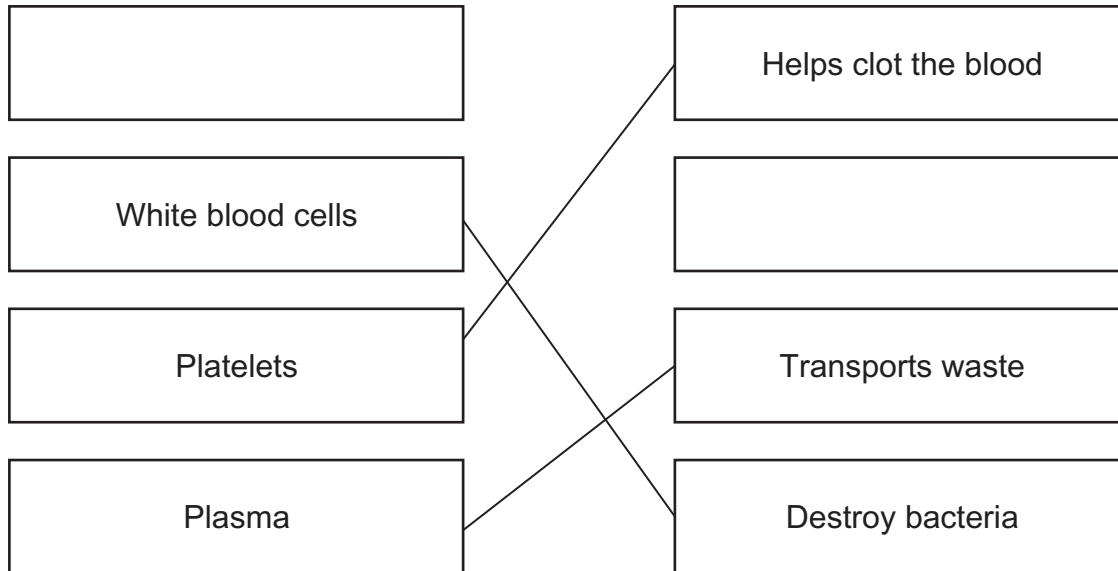
[1]

3

AVAILABLE  
MARKS

- 8 (a) Renal artery [1]  
 (b) Glucose/oxygen/urea/amino acids/water/salts/ammonia [1]  
 (c) Bladder [1]

9 (a)



All 3 correct = [2]  
 1 correct = [1] [2]

- (b) Any **three** from:  
 cholesterol;  
 causes blockage/clot/clogging up;  
 reduced blood flow;  
 less glucose/oxygen pass;  
 less respiration/energy;  
 for the heart muscle to contract/heart muscle die [3]

10 (a) B [1]

(b) Diffusion [1]

- (c) Any **four** from:  
 Diaphragm contracts;  
 diaphragm pulls down/flattens;  
**Intercostal muscles** (contract);  
 ribs move up/out;  
 volume of thorax increases; pressure in thorax decreases [4]

| AVAILABLE MARKS |
|-----------------|
| 3               |
| 5               |
| 6               |

|              |  |          | AVAILABLE MARKS |
|--------------|--|----------|-----------------|
| 11 (a)       | Concentrated sugar solution  | <b>C</b> |                 |
|              | Dilute sugar solution  | <b>B</b> | [2]             |
| (b)          | Any <b>three</b> from:<br>more water molecules <b>outside</b> /less water molecules <b>inside</b> /more dilute solution outside;<br>water molecules <b>move into</b> the Visking tubing;<br>by osmosis;<br>across a selectively permeable membrane   |          | [3] 5           |
| 12 (a)       | Fungus   |          | [1]             |
| (b)          | Any <b>three</b> from:<br>Antigens on the bacteria surface;<br>stimulates white blood cells/lymphocytes;<br>to produce antibodies;<br>antibodies join with the antigens/complementarity of antibody and antigen/lock to antigens;<br>clump forms;<br>which is ingested/digested by phagocytes/phagocytosis<br>engulf/surround/ingest;<br>digest/broken down;<br>phagocyte or WBC |          | [3] 4           |
| <b>Total</b> |  |          | <b>50</b>       |