Rewarding Learning

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

Science: Single Award (Modular)

Staying Alive
Module 1

Higher Tier

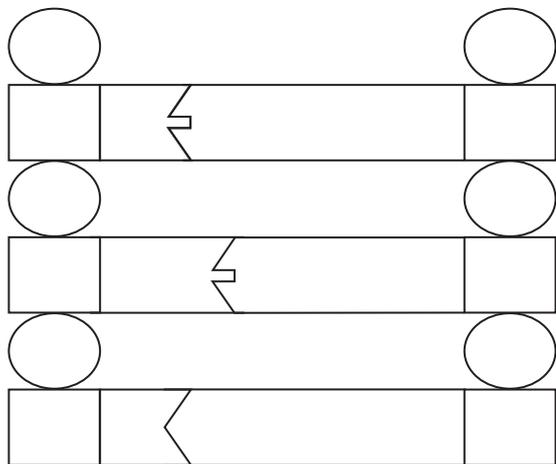**[GSC12]**

WEDNESDAY 23 FEBRUARY 2011, MORNING

MARK
SCHEME

| | | | | AVAILABLE MARKS |

1 (a) (i) level rises/pancreas produces insulin/glucose to glycogen/stored in liver
Any **three** [3]

(ii) diabetes Type 1 [1]

(b)

	F	
f		ff

Parents F and f [2]
F1 ff [1] [3]

(c) Any ethical issue, e.g. religious/unnatural/consequences (designer babies) [1]   **8**

2 (a) (i) medication (include equipment), therapy/long term complication/ medical staff/hospital stays.
Any **two** [2]

(ii) short term, one operation, can be cured/less medication, less serious, easier to treat, less equipment/less staff, less hospital time [3]

(b) cost of benefits, loss of job/emotional cost to families, family takes care/less serious, cost to employers/sick pay [2]

(c) strengthens heart muscle/less chance blockage of clot or heart attack/ more blood pumped/beat less often [2]   **9**

3 (a) (i) all bars correct [2]
2 or 3 bars correct [1]
type of cheese indicated (key) [1] [3]

(ii) 0.17 mg [1]

(b) (i) Iron – anaemia lower energy [1]
Calcium – rickets/weak bones/osteoporosis [1]

(ii) want to sell product, evidence may not be reliable, biased/not fair.
Any **two** [2]   **8**

				AVAILABLE MARKS

4 (a) Both frightened of being overweight, both can't see bodies way really are, both life threatening, both malnourished, both have dental problems.
Any **two** [2]
Anorexics starve themselves, bulimics binge eat, anorexics always very underweight, bulimics can be normal weight, anorexics avoid social situations that involve eating, bulimics eat then purge.
Any **two** [2] [4]

(b) models, jockeys, ballet dancers, ice skaters, athletes
any implication of **needing** to fit the profile [2]

(c) heart disease/stroke/diabetes/compulsive eating disorder/obesity [1]   7

5 (a) family members have **inherited** disease/to find out if baby has **inherited** disease **or** named inherited disease [1]

(b) needle/syringe into womb/amnion or description [1], amniotic fluid taken out/baby's cells [1]
DNA/genes/chromosomes is screened [1] [3]

(c) baby has illness **or** named inherited problem if test is positive, need reassurance/advice, make decisions (to decide whether to abort or not/about future pregnancies) [2]   6

6 (a) (i) if match (✓) [1]

(ii) 4 [1]

(iii) A–T, C–G [1]

(iv) Chargaff [1]

(b) sequence of 3 (DNA) bases/codes for 1 type of amino acid/form proteins
Any **three** [3]   7

	Total	45