



*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**

- 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

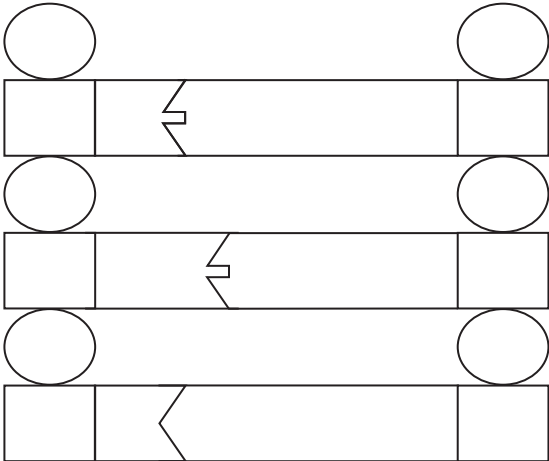
 Parents F and f [2]  
F1 ff [1] [3]
- (c) Any ethical issue, e.g. religious/unnatural/consequences (designer babies) [1]
- 2 (a) (i) medication (include equipment), therapy/long term complication/medical staff/hospital stays.  
Any **two** [2]
- (ii) short term, one operation, can be cured/less medication, 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]
- 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]

AVAILABLE  
MARKS

8

9

8

- 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]
- 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 (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]

AVAILABLE  
MARKS

7

6

7

**Total**

**45**