

New  
Specification



*Rewarding Learning*

**General Certificate of Secondary Education  
2012–2013**

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**Science: Single Award**

Unit 1 (Biology)

Foundation Tier

[GSS11]

**MONDAY 12 NOVEMBER 2012**

**1.30 pm–2.30 pm**

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**MARK  
SCHEME**

		AVAILABLE MARKS
1	(a) endangered	[1]
	(b) food [1] oxygen [1]	[2]
2	(a)	
		[2]
	(b) melting ice [1] losing habitats/cannot hunt/no food [1] endangered [1] Any 2	[2]
	(c) $64 + 13 = 77 / 100 - 77$ [1] 23 [2]	[2]
	(d) photosynthesis	[1]
3	(a) (i) line from X to cervix	[1]
	(ii) oviduct	[1]
	(iii) produce/store/release eggs [ova]	[1]
	(b) (i) all bars correct – 2 2/3 – 1	[2]
	(ii) (female) sterilisation [1] : permanent [1] [not too young on own]	[2]
4	(a) (i) same amount of water [1] same amount of food [1] hold until fully burned [1] same distance from TT [1] Any 2	[2]
	(ii) chips [1] most energy/fat [1] [not just fat provides energy]	[2]
	(b) middle box ticked	[1]
	(c) (i) Benedict's (reagent)	[1]
	(ii) protein [1] turns <i>biuret</i> purple [so positive]/ <i>biuret</i> changes colour [1]	[2]
		3
		7
		7
		8

- 5 (a) (i) glucose higher than insulin [not faster]/rise at different times [1]  
(ii) insulin rises after glucose rises [1]  
(b) hormones [1]  
(c) (i) need to urinate frequently [1] increased thirst and fluid intake [1]  
increased appetite [1] lethargy/dizziness/blurred vision/fainting/  
shaking [1] agitation/mood swings [1] weight loss [1] sugar in  
urine/high sugar levels [1] Any 2 [2]  
(ii) levels become too low/hypoglycaemia [1]  
(d) more obesity/more processed food/less exercise [must be qualified] [1]

AVAILABLE  
MARKS

7

6 (a) (i)

	R	r
R	RR	Rr
r	Rr	rr

1 – parents [1]  
1 – each row F1 [2]  
[use ncm for  
offspring if parents  
incorrect]

- (ii) 25%/1 in 4/1:3 [allow ncm] [1]  
(b) (i) does not change/narrow range/discrete groups/small number of  
groups  
[not can be put into groups] [1]  
(ii) Any example (e.g. eye colour, blood groups, ear lobes, sex) [1]  
(c) descending curve [1]  
levelling out [1] [2]

8

## 7 Indicative content

- (Huge) increase over short time/1800–2000
- Increase more in future
- Increased demand for resources/supplies, e.g. food/will run out quicker
- Increased *pollution*
- example of *pollution* ×2 e.g. carbon dioxide/sewage/nitrate/more fossil fuels burnt/more global warming [any two of final bullet point]

Band	Response	Mark
<b>A</b>	Candidates must use appropriate specialised terms throughout to explain the concern in a logical sequence using 5 or 6 of the IC. SPG, form and style is of a high standard.	[5]–[6]
<b>B</b>	Candidates use some appropriate specialised terms to partially describe the concern using 3 or 4 of the IC. SPG, form and style is of a satisfactory standard.	[3]–[4]
<b>C</b>	Candidates describe the concern using 1 or 2 of the IC. However these are not in a logical sequence. SPG, form, style and use of specialised terms are limited.	[1]–[2]
<b>D</b>	Not worthy of credit.	[0]

- 8 (a) (i) A-microorganisms trapped [1] swan neck/bend [1] could not reach soup [1]/B – not trapped [1] no bend [1] could reach soup [1] [not just can or cannot cause contamination] [3]
- (ii) knew to stop microorganisms getting in/cover wounds [1]
- (b) (i) only affect diseases caused by bacteria [1] flu viral [1] [2]
- (ii) TB/gonorrhoea/salmonella/chlamydia/MRSA/tonsillitis/meningitis/ acne/tetanus Any 1 [1]

AVAILABLE  
MARKS

6

7

9 (a)

Differences	Voluntary	Reflex
speed of response	<i>slow/varies</i>	<i>fast</i>
response to stimulus	<i>varies</i>	<i>always the same</i>

$\frac{1}{2}$  mark each response marked down [2]

(b) (sound) receptors/ear sends signal [1] to coordinator/brain [1]  
effector/muscles [1]  
or sensory neurone [1] sends signal to relay neurone [1] sends signal  
to motor neurone [1] [3]

(c) slows reactions/depressant [1]  
quicker/more alert/stimulant [1] [2]

**Total**

**AVAILABLE  
MARKS**

7

**60**