



# **2012 Biology**

## **Standard Grade General**

### **Finalised Marking Instructions**

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## Standard Grade Biology 2012 – Additional marking notes

Please use these notes alongside the finalised **MARKING INSTRUCTIONS**

### Markers Meeting

- Do** take clear notes of all decisions taken and use them in your marking.
- Do** bring up reasonable different interpretations of a question which may lead to different acceptable answers.
- Do** provide other responses illustrating good biology.
- Do** only bring up alternative responses you have actually seen.
- Do** try to form an idea of the minimal acceptable answer based on the marking instructions and any discussion.
  
- Do not** bring up obviously different ways of saying the same thing.
- Do not** bring up repeated examples of clearly incorrect answers.
- Do not** raise issues not directly concerning the marking instructions – put them in your report.

### During marking

There are **no half marks**.

In the marking instructions, if a word is underlined then it is essential; (bracketed) then it is not essential.

Answers separated by / are alternatives.

**Negation.** A correct answer can sometimes fail to gain the mark if it is negated. This happens when:

An extra **incorrect answer** is given together with the correct one.

Additional incorrect information is given which contradicts the correct answer, demonstrating a misunderstanding of the question. (Additional unrequired information will not negate a correct answer if it does not contradict that answer).

**Do** accept chemical formulae instead of chemical names.

**Do** accept subscript, superscript and normal script when used to identify generations in genetic crosses.

**Do** accept incorrect spelling if it looks or sounds reasonably correct – unless it could be confused with another biological term or is an amalgam of two or more words.

**Do** try to make a decision if you see a response not discussed at the markers meeting. Make a note of your decision and use it if the same response is seen again.

**Do** put 0 in **every** mark box where zero marks have been awarded.

**Do** check the totalling of the script marks carefully.

**Do not** make any written comments on the scripts. Use ticks, crosses, underlining, etc to indicate marking decisions.

### Referring scripts

Refer scripts to the Principal Assessor (**PA Referral**) only in extreme cases of indecision over an answer. A relevant referral form must be completed and included with the script. The script should be labelled **PA Referral**.

Refer scripts for **Special Attention (M)** if there is suspected malpractice or offensive remarks on the script. A report should be written on a separate piece of paper and included with the scripts. The script packet should be labelled **Special Attention (M)**.

**STANDARD GRADE BIOLOGY – 2012 GENERAL LEVEL MARKING INSTRUCTIONS**

Qu	Acceptable answer	Mark	Unacceptable answer
1 (a)	Food web	1	
(b) (i)	Light / sunlight	1	Sun / solar
	Photosynthesis	1	
(c) (i)	Weasels / Owls / Squirrels (any order)	All correct =	1
	Mice	1	
(d)	(An organism which) obtains its food / energy from organic matter / other organisms / other species / animals and plants / animals or plants (An organism which) eats / consumes organic matter / other organisms / other species / animals and plants / animals or plants	1	An organism that eats producers / consumers An organism that does not make its own food

Qu	Acceptable answer	Mark	Unacceptable answer
2 (a)	<p><u>Mount Hood</u> <u>yellow centre</u> <u>cup shaped flowers</u>  <u>Ice Follies</u></p> <p>All correct =  2/ 3 correct = 1</p>	<b>2</b>	
(b)	<p>trumpet shaped flowers  yellow flower  orange centre</p> <p>(any order)  All correct =</p>	<b>1</b>	
(c)	Ice Follies has yellow centre, Barrett Browning has orange centre	<b>1</b>	One has a yellow centre, one has an orange centre. Centre colour.



Qu	Acceptable answer	Mark	Unacceptable answer
4 (a) (i)	stamen		
(ii)	ovary	Both correct = <b>1</b>	
(b)	insect	<b>1</b>	
(c) (i)	ovule	<b>1</b>	
(ii)	fertilisation	<b>1</b>	

Qu	Acceptable answer	Mark	Unacceptable answer
5 (a)	Every three days	1	
(b)	Azalea	1	
(c)	No No	All correct = 1	
(d)			
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Breed together to produce fertile offspring <input checked="" type="checkbox"/>	1	

Qu	Acceptable answer	Mark	Unacceptable answer
6 (a) (i)	15	1	
(ii)	(1) Type of leaf / type of plant /size / diameter / length / width / surface area / thickness / age  (2) Distance of lamp / brightness of lamp /position of lamp / light intensity / temperature / depth of water / volume of water / mass of water / amount of water (lamplight)	1	Mass / size of test tube
(iii)	Alter brightness of lamp / distance of lamp (lamplight) Measure time (for leaf to float for each setting)	1 1	
(b)	Chlorophyll	1	
(c)	✓  ✓ average / mean  ✓ one	1 1 1	

Qu	Acceptable answer		Mark	Unacceptable answer
7 (a)	cell division large broken down	All correct = 1 / 2 correct = 1	2	
(b) (i)	small intestine		1	
(ii)	large intestine		1	
(c) (i)	increases		1	
(ii)	higher / lower in females		1	
(iii)	Any value in range 6.4 to 6.6		1	

Qu	Acceptable answer		Mark	Unacceptable answer
8 (a) (i)	A – sperm	B – egg / ovum	Both correct =	1
(ii)	smaller / has a tail / does not contain stored food / can swim		1	streamlined
(iii)	testes / testis / testicle		1	
(b) (i)	oviduct		1	
(ii)	uterus		1	womb

Qu	Acceptable answer	Mark	Unacceptable answer
9 (a)	Environmental and genetic	Both correct = <b>1</b>	
(b)	Inflammation of blood vessels Inflammation of joint Erosion of bone and cartilage	All correct (any order) = 1 / 2 correct = 1 <b>2</b>	
(c)	Production of neutrophil enzymes and (production of) breakdown enzymes. Both correct =	<b>1</b>	

Qu	Acceptable answer	Mark	Unacceptable answer
10 (a)	Growing use of fertility drugs More older women are having babies (Need a comparative in both cases)	1 1	use of fertility drugs older women are having babies older women are having more babies
(b)	Babies develop together in a single sac Babies share one placenta	Both correct =	1 Develop together / develop with no separating membrane
(c)	DNA test	1	They have identical DNA
(d)	Zygote divides (into two) and each (half) develops separately	(Both parts needed) =	1
(e)	67	1	
(f)	Mothers / female	1	

Qu	Acceptable answer	Mark	Unacceptable answer
11 (a)	cells makes them clearer	1 1	
(b) (i)	carbon dioxide	1	
(ii)	Cell B <input checked="" type="checkbox"/> Cell C <input type="checkbox"/> Tissue fluid <input checked="" type="checkbox"/>	Both correct = 1	
(iii)	Cell A <input checked="" type="checkbox"/> Cell C <input checked="" type="checkbox"/> Tissue fluid <input type="checkbox"/>	Both correct = 1	
(c)	Membrane	1	
(d)	Osmosis	1	

Qu	Acceptable answer	Mark	Unacceptable answer
12 (a)	300 to 349	1	
(b)	30	1	

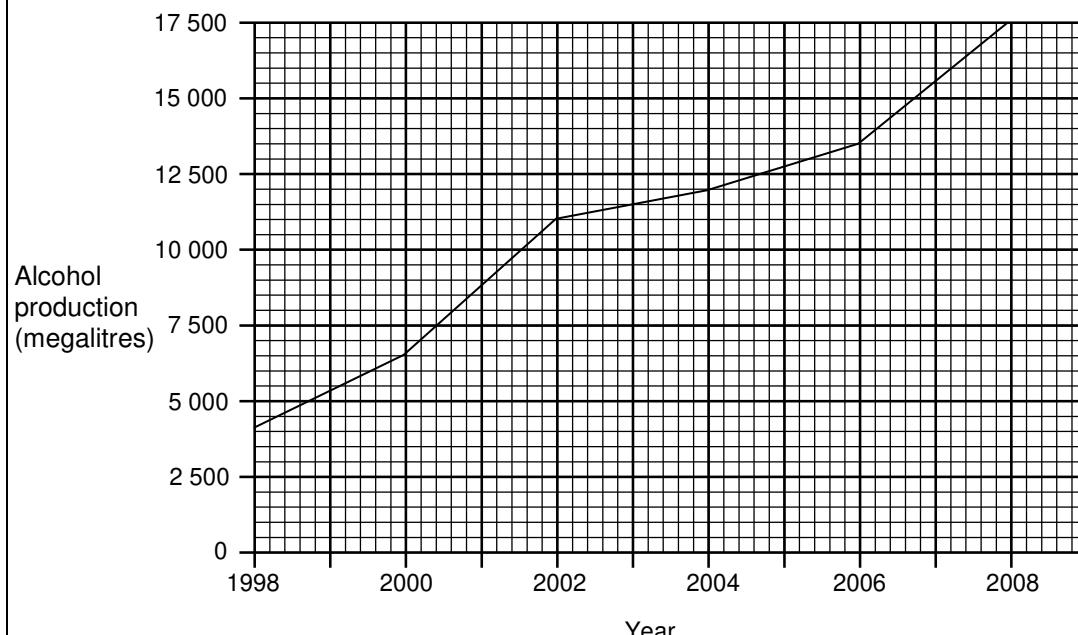
Qu	Acceptable answer	Mark	Unacceptable answer
13 (a) (i)	3	1	
(ii)	9 / 09.00	1	9 pm
(b) (i)	xylem	1	
(ii)	stoma / stomata	1	

Qu	Acceptable answer	Mark	Unacceptable answer
14 (a) (i)	Enzyme A  It has an acidic pH optimum / It works best in acidic conditions / It has an optimum pH of 2.5 It only works in acidic conditions / It works at a lower pH (than B)      Both parts correct =	1	It works in acidic conditions / at a low pH
(ii)	(1) 4 and 5  (2) 3	1 1	
(b)	amylase / lipase / catalase / trypsin / maltase	1	protease
(c) (i)	(A substance which) speeds up a reaction and is unchanged by the reaction / not used up in the reaction / can be re-used  Both parts needed =		
(ii)	Protein	1	

Qu	Acceptable answer	Mark	Unacceptable answer														
15 (a) (i)	Protection / producing red blood cells	1	support /shape /structure (do not negate)														
(ii)	one	1															
(iii)	elbow / knee / finger / toe	1															
(b)	<table border="1"> <caption>Data from bar chart: Injuries (%) by Tissue</caption> <thead> <tr> <th>Tissue</th> <th>Injuries (%)</th> </tr> </thead> <tbody> <tr> <td>skin</td> <td>8</td> </tr> <tr> <td>muscle</td> <td>33</td> </tr> <tr> <td>tendon</td> <td>5</td> </tr> <tr> <td>ligament</td> <td>50</td> </tr> <tr> <td>cartilage</td> <td>2</td> </tr> <tr> <td>bone</td> <td>2</td> </tr> </tbody> </table>	Tissue	Injuries (%)	skin	8	muscle	33	tendon	5	ligament	50	cartilage	2	bone	2	1	
Tissue	Injuries (%)																
skin	8																
muscle	33																
tendon	5																
ligament	50																
cartilage	2																
bone	2																
(i)	correct y axis labels	1															
(ii)	correct x axis scale (values of 50 plus minimum of one other)	1															
(iii)	correct drawing of bars	1	topless bars														
(iv)	Connect bone to bone / Connect the bones of a joint together	1	holds joint together														

Qu	Acceptable answer			Mark	Unacceptable answer
16 (a)		carries blood to / towards the heart	All correct = 1 / 2 correct = 1	2	oxygenated / deoxygenated blood (negates)
		carries blood (away) from the heart			
	capillary				
(b)	To transport oxygen / To carry oxygen		1		
(c) (i)	1 : 8			1	
	(ii) 192			1	

Qu	Acceptable answer				Mark	Unacceptable answer
17 (a) (i)	2	1		Both correct =	1	
(ii)	gametes				1	
(b)			X			
			XX			
	Y	XY		All correct =	1	
(c) (i)	amniocentesis				1	
(ii)	Down syndrome / Patau syndrome / Edwards syndrome / sickle cell disease / cystic fibrosis / Turners syndrome /Kleinfelters syndrome				1	

Qu	Acceptable answer	Mark	Unacceptable answer
18 (a)	 <p>Alcohol production (megalitres)</p> <p>Year</p>		
(i) (ii) (iii)	<p>Correct label = 1</p> <p>Correct scale (1998, 2008 + minimum of one other) – making maximum use of grid = 1</p> <p>Correct plotting and joining of points = 1</p> <p>(accept plot with years moved one large grid square to the right and no value at origin)</p>		incorrect value at origin
(b)	<p>2000 - 2002</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>	1	
(c)	200	1	

Qu	Acceptable answer						Mark	Unacceptable answer
19 (a) (i)	single fungus						Both correct = 1	
(ii)	biogas / methane						1	ethanol / biofuel
(iii)	renewable / conserves fossil fuels / will not run out / fossil fuels will not run out / less pollution						1	no pollution
(b)	Protein	Insulin	Digestive enzymes	Human Growth Hormone	Interferon	Factor 8	1	
	Use	Treat diabetes	Biological detergents	Treat growth problems	Potential cancer treatment	Blood clotting agent	1	
	(2 <sup>nd</sup> mark only given if use matches named protein)							

[END OF MARKING INSTRUCTIONS]