



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
(ii)	Photosynthesis	1	
(c) (i)	Weasels / Owls / Squirrels (any order) All correct =	1	
(ii)	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)	<div> <div>cup shaped flowers</div> <div> <div>yellow centre</div> <div>Mount Hood</div> <div>Ice Follies</div> </div> <div> <div>All correct = 2</div> <div>2/ 3 correct = 1</div> </div> </div>		
(b)	<div> <div>trumpet shaped flowers</div> <div> <div>yellow flower</div> <div>orange centre</div> </div> <div> <div>(any order)</div> <div>All correct = 1</div> </div> </div>		
(c)	Ice Follies has yellow centre, Barrett Browning has orange centre	1	One has a yellow centre, one has an orange centre. Centre colour.

Qu	Acceptable answer	Mark	Unacceptable answer
3 (a)	<div> <div>Domestic</div> <div>Industry</div> <div>Agricultural</div> </div> <div> <div>Sulphur dioxide</div> <div>Fertiliser run-off</div> <div>Household waste</div> </div> <div>All correct =</div>	1	Additional lines negate.
(b) (i)	Provides food / energy (for micro-organisms)	1	
	or		
	Sewage contains micro-organisms		
(ii)	<div>Increase <input type="checkbox"/></div> <div>Decrease <input checked="" type="checkbox"/></div> <div>Stay the same <input type="checkbox"/></div>	1	
(iii)	cholera / typhoid / polio / dysentery	1	

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

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

Qu	Acceptable answer			Mark	Unacceptable answer
6 (a) (i)	15			1	Mass / size of test tube
(ii)	(1) Type of leaf / type of plant /size / diameter / length / width / surface area / thickness / age			1	
	(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	
(iii)	Alter brightness of lamp / distance of lamp (lamplight) Measure time (for leaf to float for each setting)			1 1	
(b)	Chlorophyll			1	
(c)	✓			1	
		✓	average / mean	1	
		✓	one	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	streamlined
(ii)	smaller / has a tail / does not contain stored food / can swim	1	
(iii)	testes / testis / testicle	1	
(b) (i)	oviduct	1	womb
(ii)	uterus	1	

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

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	

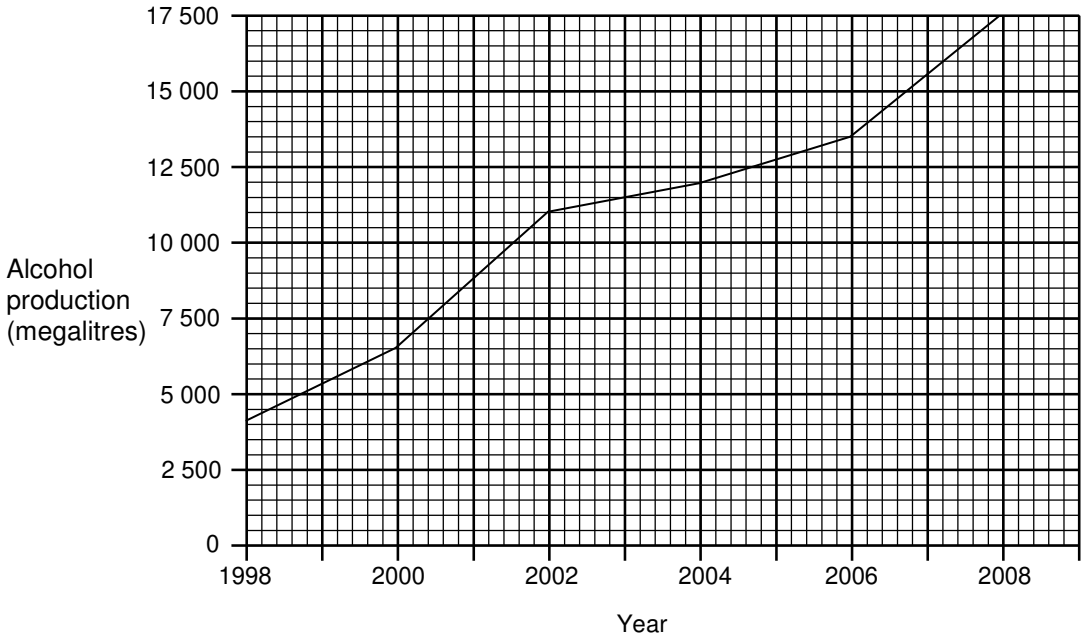
Qu	Acceptable answer	Mark	Unacceptable answer
13 (a) (i)	3	1	
(ii)	9 / 09:00	1	9 pm
(b) (i)	xylem	1	
(ii)	stoma / stomata	1	

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 =	1	
(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)	<p>Bar chart showing the percentage of injuries for different tissues. The y-axis is labeled 'Injuries (%)' and ranges from 0 to 50. The x-axis is labeled 'Tissue' and includes skin, muscle, tendon, ligament, cartilage, and bone. The bars show: skin (8%), muscle (33%), tendon (5%), ligament (50%), cartilage (2%), and bone (2%).</p>	1	topless bars
(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	
(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 <					

Qu	Acceptable answer	Mark	Unacceptable answer
18 (a)	 <p>Alcohol production (megalitres)</p> <p>Year</p> <p>(i) Correct label = 1 (ii) Correct scale (1998, 2008 + minimum of one other) – making maximum use of grid = 1 (iii) Correct plotting and joining of points = 1 (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> <div style="display: flex; align-items: center;"> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> </div>	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)	<i>Protein</i> Insulin Digestive enzymes Human Growth Hormone Interferon Factor 8 <i>Use</i> Treat diabetes Biological detergents Treat growth problems Potential cancer treatment Blood clotting agent (2 nd mark only given if use matches named protein)	1 1	

[END OF MARKING INSTRUCTIONS]