2008 Biology

Standard Grade – General

Finalised Marking Instructions

Standard Grade Biology 2008 – Additional marking notes

Please use these notes alongside the finalised **'VERSION 2 MARKING INSTRUCTIONS'**

Markers' Meeting

Do take clear notes of all decisions made 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 S*pecial 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 **S*pecial Attention (M).***

STANDARD GRADE BIOLOGY – 2008 GENERAL LEVEL MARKING INSTRUCTIONS VERSION 2

Qu	Acceptable answer	Mark	Unacceptable answer
1 (a) (i)	water hawthorn	**1**	
(ii)	Elodea	**1**	
(iii)	round leaves (has) roots in soil — three correct = (has) leaves on or above surface — one / two correct =	**2** **1**	
(b)	habitat community population — all correct =	**1**	
(c) (i)	Transfer or movement or flow of energy / direction energy moves	**1**	what is eaten by what
(ii)	perch pike stickleback water beetle — any two =	**1**	
2 (a)	19	**1**	
(b)	birth rate was greater than the death rate / death rate was less than the birth rate	**1**	birth rate was increasing a high birth rate and a low death rate
(c)	lack of food or sugar or glucose or maltose / lack of oxygen / build up of waste or alcohol or carbon dioxide / decrease in pH or too acidic — any two, one mark each =	**2**	lack of space / overcrowding / wrong temperature / disease / competition

Qu	Acceptable answer	Mark	Unacceptable answer
3 (a)	60 14 8 all correct =	**1**	
(b)	Bags type of material / size or surface area or volume / how tightly they were closed / thickness Leaves species or type / age / size or mass or surface area / number / freshness	**1** **1**	mesh size / mass / depth volume / amount
(c)	allow time for decomposition (to start) / decomposition happens slowly	**1**	allow activity of organisms
(d)	recycle minerals or nutrients or example needed for plant growth / return nutrients or minerals to the soil (must mention plant requirements or soil improvement)	**1**	
4 (a)	A	**1**	
(b)	<u>water</u> <u>oxygen</u> both correct =	**1**	
5 (a)	carbon dioxide + water ⇌ glucose + oxygen (accept formulae) both raw materials correct = both products correct =	**1** **1**	
(b)	starch	**1**	
(c)	stomata / stoma / stomal pores / stomates	**1**	
(d)	chlorophyll	**1**	chloroplast
6 (a)	remained steady / unchanged until 1950 then increased (must identify 1950 as the 'turning point' to get both marks)	**1** **1**	
(b)	from 1950 to 2000	**1**	
(c)	3 : 1	**1**	

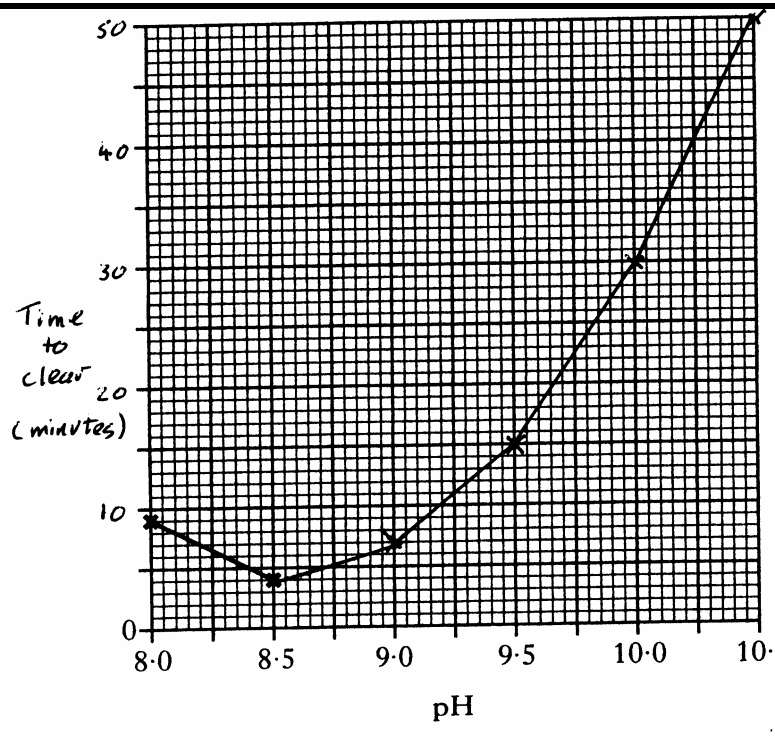
Qu	Acceptable answer	Mark	Unacceptable answer
7 (a)	<table><tr><td></td><td></td><td>**absent**</td><td>**absent**</td><td>**absent**</td></tr><tr><td>**20**</td><td>**present**</td><td>**absent**</td><td>**absent**</td><td>**absent**</td></tr><tr><td>**40**</td><td></td><td>**absent**</td><td>**absent**</td><td>**absent**</td></tr></table> all boxes correct = **2** 7-11 boxes correct = **1**		positive/negative
(b) (i)	the enzyme digested or broke down the starch to sugar or maltose / the enzyme + starch produced sugar or maltose [**Note** – also accept answer as in (ii) but only accept it once]	**1**	glucose
(ii)	sugar is small enough to pass through the bag / membrane, starch is not / sugar molecules are smaller than starch molecules and can pass through the bag / membrane (must indicate relative size of the molecules and their ability to pass through the membrane)	**1**	

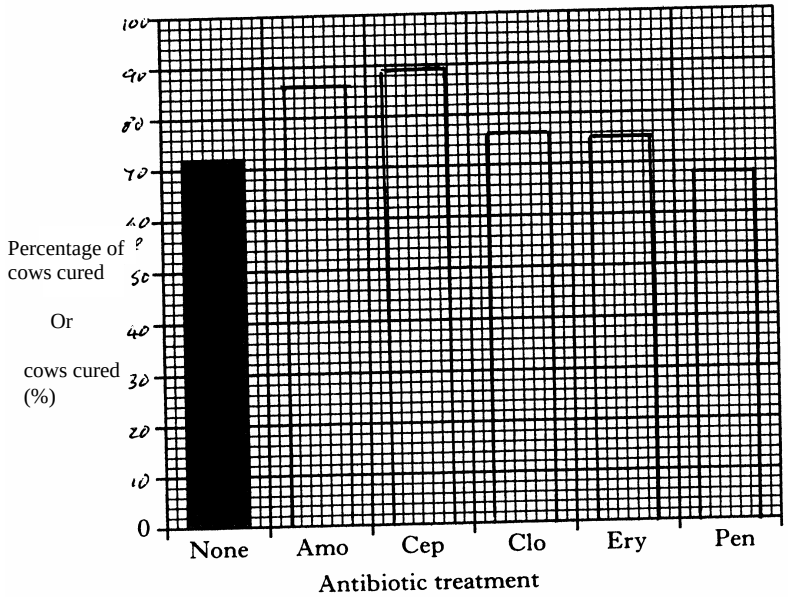
Qu	Acceptable answer	Mark	Unacceptable answer
8 (a) (i)	*P* right atrium / auricle *Q* left atrium / auricle *R* right ventricle three correct = one / two correct =	**2** **1**	
(ii)	*Function* to prevent the backflow of blood / to prevent blood returning to the heart or left ventricle / to prevent the blood going the wrong way / to make sure blood flows in the right direction	**1**	wrongly named chamber
	Vessel aorta	**1**	
(iii)	It is an artery carrying blood to the lungs ✓	**1**	
(b) (i)	to carry oxygen / to get oxygen round the body	**1**	to collect or supply oxygen
(ii)	to carry dissolved food (or example) or nutrients or minerals to carry waste or carbon dioxide or urea / to carry hormones (or example) / to carry blood cells / to distribute heat	**1**	to carry chemicals
(c)	coronary artery	**1**	

Qu	Acceptable answer	Mark	Unacceptable answer
9 (a)	Fewer people were injured playing squash than rugby ✓	**1**	
(b)	tennis	**1**	
(c)	80	**1**	
10 (a)	*Gain* drink food respiration / metabolism / chemical reactions any one *Loss* urine faeces breath sweat any one both correct =	**1**	
(b)	*W* renal artery *X* ureter *Y* bladder three correct = one / two correct =	**2** **1**	
(c)	filtration reabsorption glucose three correct = one / two correct =	**2** **1**	
(d)	urea	**1**	urine

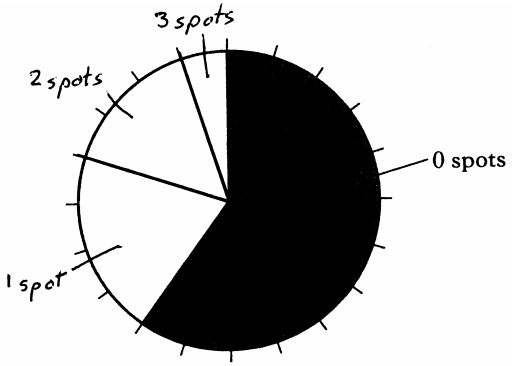
Qu	Acceptable answer	Mark	Unacceptable answer
11 (a)	stain diffusion catalyst (cell) membrane four correct = three correct = one / two correct =	 **3** **2** **1**	dye / named stain osmosis enzyme
(b) (i)	**C** **B** **A**	**1**	
(ii)	mitosis	**1**	
12 (a)	rabies	**1**	
(b)	hepatitis A	**1**	
(c)	tetanus	**1**	
(d)	effective for 5 years does not require a booster given by injection all three points needed =	**1**	
13 (a) (i)	28	**1**	
(ii)	sheep	**1**	
(b)	I $\frac{3}{3}$ C $\frac{1}{1}$ P $\frac{3}{3}$ M $\frac{0}{0}$	**1**	

Qu	Acceptable answer	Mark	Unacceptable answer
14 (a)	hawks feed during daylight, owls feed at night / hawks are diurnal, owls are nocturnal	**1**	when they feed or are active / one is diurnal, one is nocturnal
(b)	they feed on leftovers or carrion / they are scavengers	**1**	They do not kill their own prey
(c)	from vegetable matter in the stomachs of their prey (answer must include reference to plant or vegetable materials, and the stomach of the prey)	**1**	
(d)	**1** falcons have an elongated middle toe. hawks have a ratchet mechanism to lock toes **2** falcons have a notch on either side of the upper beak hawks have a prominent hooked tip on the upper beak	**1** **1**	
15 (a) (i) **(ii)**	<table><tr><td>**P**</td><td></td></tr><tr><td>**F_1**</td><td>(all) brown / brown x brown</td></tr><tr><td>**F_2**</td><td></td></tr></table> **(i)** all three generation symbols correct = 2 2/3 generation symbols correct = 1 **(ii)** **F_1** phenotype correct =	**2** **1**	
(b)	<table><tr><th>T</th><th>F</th><th>Correction</th></tr><tr><td>✓</td><td></td><td></td></tr><tr><td></td><td>✓</td><td>chromosome</td></tr><tr><td></td><td>✓</td><td>gametes / sex cells</td></tr></table>	**1** **1** **1**	 sperm / eggs etc

Qu	Acceptable answer	Mark	Unacceptable answer
16 (a) (i)	 1 correct Y axis label = **1** 2 correct Y axis scale with at least 50 + one other value = **1** 3 correct plotting and joining of points = **1**		
(ii)	The time to clear decreases up to pH8·5, **1** after that the time to clear increases **1** *Answer must identify* pH8·5 *as the 'turning point' to gain two marks*		
(b)	3 + acidic **1** 7 + neutral **1**		
(c)	protein	**1**	amino acids

Qu	Acceptable answer	Mark	Unacceptable answer
17 (a)	a chemical which kills / prevents the growth of micro-organisms / bacteria / microbes	**1**	
(b) (i)	to allow a comparison to be made of all the treatments / because different numbers of cows were used for each treatment	**1**	
(ii)	the sample was too small	**1**	
(iii)	cephapirin	**1**	
(iv)	penicillin had no effect on the infection / more cows recover without penicillin / it's better not to use penicillin / penicillin is worse than no antibiotic at all	**1**	penicillin is the least effective
(v)	 1 correct Y axis label = **1** 2 correct Y axis scale with at least 90/100 + one other value = **1** 3 correct plotting of all bars = **1** (bars must have clear and accurate tops)		

Qu	Acceptable answer	Mark	Unacceptable answer
18 (a) (i)	glucose	**1**	
(ii)	fructose	**1**	
(iii)	*Strain* **S** *Reason* It digested a high proportion / at least 80% of all the sugars, not just some It digested the most sugar	**1**	
(b) (i)	fungus	**1**	single celled
(ii)	*Bread* makes the dough or bread rise	**1**	makes CO_2
	Beer converts the sugar to alcohol / produces alcohol	**1**	
(c) (i)	bacteria	**1**	
(ii)	to prevent contamination by unwanted micro-organisms or microbes or bacteria / to kill unwanted micro-organisms or microbes or bacteria	**1**	
(d)	makes it sour or acidic or thicker / curdles or clots milk	**1**	

Qu	Acceptable answer	Mark	Unacceptable answer
19 (a) (i)	discontinuous	**1**	
(ii)	 correct divisions (any order) = **1** correct labelling of appropriate segments = **1**		
(b)	They breed to produce fertile offspring	**1**	

[END OF MARKING INSTRUCTIONS]