

Additional Applied Science A

General Certificate of Secondary Education **A334/01**

Unit 2 Agriculture and Food

Mark Scheme for June 2010

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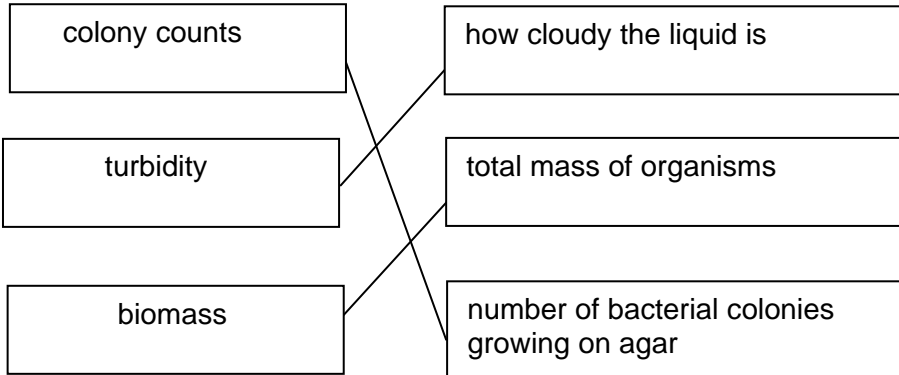
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Question		Expected Answers	Mks	Additional Guidance
1	a	machines are used to gather the harvest <input type="checkbox"/>	[1]	if both a correct and incorrect box is ticked no marks
		only the fruits are harvested <input checked="" type="checkbox"/>		
		the whole plant is harvested. <input type="checkbox"/>		
b	i	counting the strawberries <input type="checkbox"/>	[1]	if both a correct and incorrect box is ticked no marks
		looking at the crop <input type="checkbox"/>		
		measuring the size of each strawberry <input type="checkbox"/>		
		weighing the strawberries <input checked="" type="checkbox"/>		
	ii	looking at the crop/ second method	[1]	
c		easy to pick/ harvest; less chance of being damaged by pests; won't get dirty (from the soil)/less contamination; fewer weeds/ easier to remove weeds/less competition; watered automatically/watered regularly/water controlled; can put special/ good/ soil or compost in plastic bags; need less water/ no water loss from plastic bags; fertilisers can be given automatically (in water);	[2]	any two treat answers such as better/ bigger crop/ keeps them fresh/ organic/ protected/ to get more sunlight/more water/ more nutrients as neutral/ warmer
d		C, D,A, E	[2]	C before D (1), D before A (1), A before E (1) 3 correct = 2 marks, 2 correct = 1 mark
e	i	fungus/bacteria	[1]	allow mould treat virus as neutral

e	ii	low/ cool temperature/ refrigerated ; good ventilation; dry; not squashed together; clean; irradiated;	[2]	any two allow covered/ in container/pest free ignore references to freezing/ time/ right temperature/sealed/ plastic bag/vacuum packed
			[10]	

Question	Expected Answers	Mks	Additional Guidance
2 a	colony counts to number of bacterial colonies; turbidity to how cloudy; biomass to total mass; 	[2]	2 or 3 lines correct = 2 marks 1 line correct = 1 marks reject two lines from/to the same box
b i	sterile/ no microorganisms/no bacteria/ no fungi/ no viruses/not contaminated	[1]	ignore clean/hygienic/ no disease reject references to germs
	ii reference to disease causing/ infections/ reference to preventing escape	[1]	allow references to being dangerous/harmful
c i	gets less/ quickly broken down/ used (as food) uses appropriate figures; (1) no further breakdown/ amount stays the same (1)	[2]	
	ii no / very little sugar left /alcohol kills yeast/no yeast left/ fermentation complete;	[1]	
		[7]	

Question		Expected Answers	Mks	Additional Guidance
3	a	meat/ leather/ dung/ fertiliser/milk/ fuel	[1]	allow skin (for clothing)
	b	i		
		artificial insemination	<input checked="" type="checkbox"/>	[1]
		batch culture	<input type="checkbox"/>	
		organic farming	<input type="checkbox"/>	
		tissue culture	<input type="checkbox"/>	
	c	temperature; shelter/ exposure/ available space; food; water; pests; disease/ health; stress; genetic factors/ size of parents; different metabolic rate; gender; age;	[2]	any three three correct = 2 marks 2 correct =1 mark ignore references to environment/ habitat/ exercise/ weather
	d	i		
		vicuna wool;(1) only produces 95g per year/ same amount as cashmere but takes two years (1)	[2]	reject copying information “gives 190 g in two years” allow “longer time to make less wool”
		ii		
		few vicunas; small amount produced; only harvested every two years/ takes a long time to grow; high demand;	[2]	any two
			[8]	

Question	Expected Answers	Mks	Additional Guidance
4 a		[3]	three or four lines correct =3 marks two lines correct = 2 marks 1 line correct =1 marks reject 2 or more lines to/from same box
b	pollination;(1) fertilisation; (1) seed;(1)	[3]	
c	i more wheat (grains); bigger wheat grains; bigger plant; use of fertilisers; use of pesticides;	[1]	two answers required for 1 mark
	ii artificial insemination <input type="checkbox"/> batch culture <input type="checkbox"/> organic farming <input type="checkbox"/> selective breeding <input checked="" type="checkbox"/>	[1]	if both a correct and incorrect box is ticked no marks
d	i D; (1) A; (1)	[2]	
	ii (Yeast) respire/ produces carbon dioxide	[1]	
		[11]	
	Paper Total	[36]	

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