

Anaerobic Respiration in Plants and Yeast 2 MS

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	carbon dioxide / CO ₂	ignore beer, wine, bread, energy, heat	1
	alcohol / ethanol	3rd wrong chemical cancels a mark	1
b)i)	any two from: ✕ volume / amount of sugar (solution) or volume / amount of solution ✕ volume / amount of yeast (suspension) or volume / amount of suspension ✕ temperature ✕ amount of time	allow volumes / amounts of reactants for 1 mark do not allow ratio of reactants	2
b)ii)	A and C produced gas / carbon dioxide (CO ₂)	if A or C allow the 2nd mark wrongly named gas loses the mark B given = 0 marks for part (b)(ii)	1 1
Total marks			6

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	any two from: ✕ volume / amount of milk ✕ type of milk ✕ amount / volume of starter culture / yoghurt / bacteria ✕ type of starter culture ✕ temperature / 25°C ✕ time interval / every 50 minutes	allow heat ignore 'time' unqualified	2
a)ii)	(more) reliable / (more) representative / typical or detect / allow for / reduce effect of /anomalies / errors	do not accept accurate / precise / true ignore fair / valid	1

a)iii)	(greater) accuracy of measurement or (greater) sensitivity or (more) precise / exact or can detect smaller changes	accept converse for pH papers allow paper obscured by yoghurt ignore vague answers eg clear / definite do not accept words such as reliable / valid	1
b)	flask 2 at 200 minutes / 5.8		1
c)	lactic acid production	allow decrease in pH ignore extras	1 1
Total marks			7

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	yeast grows best / better / well or optimum temperature for yeast / more yeast present CO ₂ made(by yeast) or respire / respiration (by yeast)	allow yeast works best / better / well allow fermentation (ignore anaerobic/aerobic)	1 1
b)i)	bacterium grows best / better / well / more bacteria present or optimum temperature for bacterium (lactic) acid made (by bacterium)	ignore micro organism / microbes allow works / respire best / better / well (ignore anaerobic/aerobic) do not allow wrong acid	1 1
b)ii)	bread still rises (in acid conditions) or no need to control / monitor pH		1
Total marks			5

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)		<p>all four correct = 4 marks</p> <p>three correct = 3 marks</p> <p>two correct = 2 marks</p> <p>one correct = 1 mark</p> <p>extra line from a statement cancels the mark</p>	4
Total marks			4

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	<p>any two from:</p> <ul style="list-style-type: none"> sterilise flask before use or method described sterilise water / solution (before yeast added) work near a flame modification to air lock eg disinfectant / cotton wool filter 	<p>accept boil</p> <p>accept heat to kill organisms</p> <p>ignore heating unqualified</p> <p>sterilise unqualified = 1 mark</p>	2
a)ii)	any one from:	ignore fair test	1

	<ul style="list-style-type: none"> •so can see the effect of different types of sugar •different concentrations give different rates / affect results •so only one variable / valid •concentration is a control variable 	do not accept accurate / reliable / precise	
b)i)	carbon dioxide	accept CO ₂ / CO2	1
b)ii)	less likely to lose count / get tired or experiment lasts a long time or less chance of human error	ignore precise / accurate / reliable / valid	1
c)i)	A - more gas / CO ₂ produced	if B - no marks	1
c)ii)	gas production stopped or zero rate or no more gas / bubbles produced	do not accept levelled off / constant	1
Total marks			7