

## **Cambridge Assessment International Education**

Cambridge Ordinary Level

BIOLOGY 5090/32

Paper 3 Practical Test

October/November 2017

MARK SCHEME
Maximum Mark: 40

## **Published**

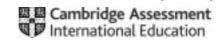
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Mark schemes will use these abbreviations:

; separates marking points

I alternatives

() contents of brackets are not required but should be implied

R reject

A accept (for answers correctly cued by the question, or guidance for examiners)

**Ig** ignore (for incorrect but irrelevant responses)

**AW** alternative wording (where responses vary more than usual)

**AVP** alternative valid point (where a greater than usual variety of responses is expected)

**ORA** or reverse argument

<u>underline</u> actual word underlined must be used by candidate

+ statements on both sides of the + are needed for that mark

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Question	Answer	Marks	Guidance
1(a)	result recorded for each test-tube ;	4	
	distilled water blue / stays the same / no change;		
	0.6% ( <b>C</b> ) solution at 10 minutes orange / brick red colour;		
	any intermediate colour between blue and orange / brick red for A and B;		
	solution <b>X</b> colour between <b>OR</b> the same as that of 0.2% and 0.4% solution ;		
1(b)(i)	between 0.2 and 0.4;	1	
1(b)(ii)	colour change / appearance intermediate between these two concentrations;	1	
1(b)(iii)	use dilutions of glucose between 0.2% and 0.4%;	2	
	test each dilution with Benedict's solution;		
	compare colour of solution <b>X</b> with these colours ;		
1(c)	EITHER	3	
	2.5 cm <sup>3</sup> of glucose solution;		
	same volume / 2.5 cm <sup>3</sup> of water;		
	add/mix/shake/stir;		
	OR		
	known / measured / stated volume of glucose solution;		
	same volume / of water;		
	measure 5 cm <sup>3</sup> of diluted solution ;		

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1(e)(ii)

filter;

residue / solid dried + mass measured;

2

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Question	Answer	Marks	Guidance		
1(d)	control / to show the colour (of Benedict's solution) when no (reducing) sugar / glucose present;	1			
1(e)(i)	solid / precipitate settling at bottom of test-tubes;	2			
	0.6% solution ( <b>C</b> ) has most solid at bottom of test-tube ;				
	0.2% to 0.6% ( $\bf A - \bf C$ ) solutions have increasing amount of solid with increasing concentration ;				

Question	Answer	Marks	Guidance
2(a)(i)	at least 60 mm diameter and ± circular;	4	
	outline drawn with sharp pencil + continuous line + no shading anywhere;		
	vascular tissue delimited ;		
	central vascular tissue correctly labelled;		
2(a)(ii)	measurement of cut surface (mm) + measurement of drawing (± 1 mm);	4	
	line drawn on drawing ;		
	correct working for magnification;		
	correct calculation;		

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Question	Answer	Marks	Guidance		
2(b)(i)	axes fully labelled;	4			
	linear scale for vitamin C content + at least half of grid used in both directions;				
	four data values plotted correctly;				
	all bars ruled and of equal width ;				
2(b)(ii)	boiling / cooking decreases vitamin C <b>OR</b> more vitamin C in uncooked / fresh than boiled <b>ORA</b> ;	2			
	freezing decreases vitamin C <b>OR</b> more vitamin C in fresh than frozen <b>ORA</b> ;				
2(b)(iii)	carrots of same age or type or species / same carrot;	4			
	same mass / volume of carrots used ;				
	both cooking methods (oven, boiling) used;				
	same temperature / for same time / until ready to eat;				
	vitamin C test used / content determined after cooking;				
	expressed as mg per 100 g of carrot;				
	repeat and calculate mean / average ;				

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Question	Answer			Marks	Guidance	
3(a)		normal	abnormal		4	
	number	6;	_			
	shape	biconcave / disc-shaped / circular;	elongated / flat / long / pointed;			
	size	small / short	large / long;			
3(b)	abnormal cells cannot squeeze through / travel through / enter / get stuck in capillaries;		2			
	abnormal cells can cause blockages / stop or reduces or slow blood flow / damage capillaries / cause internal bleeding / increase blood pressure;					
	less oxyge	less oxygen transported;				

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