www.papacambridge.com MARK SCHEME for the October/November 2013 series

9700 BIOLOGY

9700/31

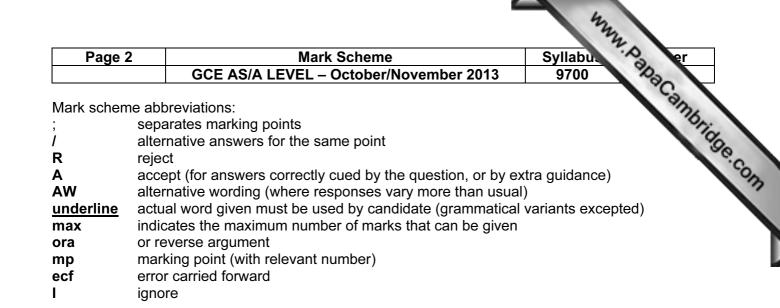
Paper 3 (Advanced Practical Skills 1), maximum raw mark 40

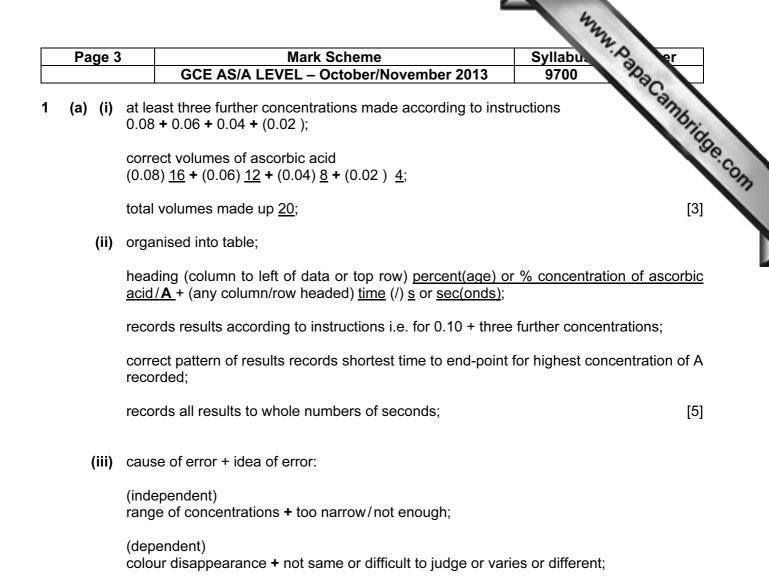
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.





timing + inaccurate as timing started when last piece put in;

(standardised) size of agar piece/cutting + not same or varies or different;

agitating pieces of agar/ascorbic acid + not same or varies or different;

pieces of agar with stained side down or stick together + ascorbic acid not reaching indicator;

[max 2]

Page 4	ŀ	Mark Scheme	Syllabu. Syllabu	
		GCE AS/A LEVEL – October/November 2013	9700	
(iv)	(dep use l stage (star cut a	ependent variable) e or wider or different or larger or at least five different examples; A if no units R if incorrect units pendent variable) help or two people to record colour or video; ger start or do individually to prevent timing error; ndardised variables) agar block on graph paper or alternative method; electric or automatic shaker;	Syllabu 9700 concentrations or gr	
(b) (i)	line graph: label on <i>x</i> -axis percent(age) ascorbic acid conc(entration /) % + label on <i>y</i> -axis vol(ume of) indicator (/) cm ³ ; scale <i>x</i> -axis <u>0.2 to 2 cm labelled each 2 cm</u> + <i>y</i> -axis <u>0.5 to 2 cm labelled each 2 cm</u> ;			
	corre	ect plotting of five points as small cross or dot in circle;		
	ruleo	d line of best fit through at least four plotted points + line	less than 1 mm thick; [
(ii)	shov	ws clearly on graph with line or point on line;		
	4:	nate correct with reading at 0.86 cm ³ to 2 decimal places	s with <u>%;</u> [

[Total: 19]

Page 5	Mark Scheme Syllabu	er er		
	GCE AS/A LEVEL – October/November 2013 9700	No.		
(a) (i)	drawing and quality;	anny.		
	 do not give mark for any shading any ruled lines smaller than 50 mm across widest dimension of largest enclosed ar less than 3 lines 	nun Papa anbridge. rea		
	 or any line is too thick has any feathery or dashed lines or gap in line has any overlaps; 			
	no cells + correct quarter drawn;			
	layers of differing widths;			
	inner line drawn with indentations;			
	uses label line with label to muscle tissue;	[5]		
(ii)	lumen; + presence of blood cells or AW or to ease flow or allow free movement of blood or less resistance;			
	thick (muscle) wall; + wall to withstand pressure or hold blood;			
	inner surface folded or crinkled or irregular + to allow tube to expand o	or widen or dilate; [max 2]		
(b) (i)	marks on blood cells counted in correct eighth;			
	shows number of whole cells counted multiplied by 8;	[2]		
(ii)	correct measurement of line r + units mm;			
	correct answer for area to correct number of significant figures;			
	correct answer for area to correct number of significant figures; (measurement divided by $200)^2 \times 3.14$)	[2]		

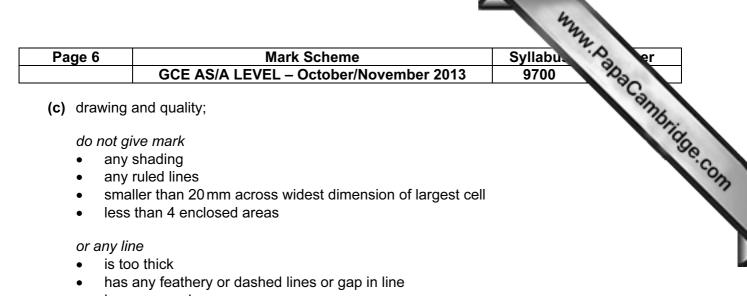
rounded to whole number for answer;

(iv) as altitude/height increases (ascends) average number of red blood cells/rbc increases or rbc produced at faster rate;

[2]

as ascend/at altitude air is thin or less oxygen;

extra red blood cells help to supply enough oxygen to tissues or idea more oxygen carried; [3]



has any overlaps;

draws only four whole cells + two of each type;

cells shown with correct relevant sizes;

(details of) nucleus different between two cells of one type of wbc (lobed nucleus in the two cells);

uses label line with label to one nucleus;

[5]

[Total: 21]