Cambridge International AS & A Level

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BIOLOGY **9700/35**

Paper 3 Advanced Practical Skills 1 **October/November 2017**

MARK SCHEME

Maximum Mark: 40

Published

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 International will not enter into discussions about these mark schemes.

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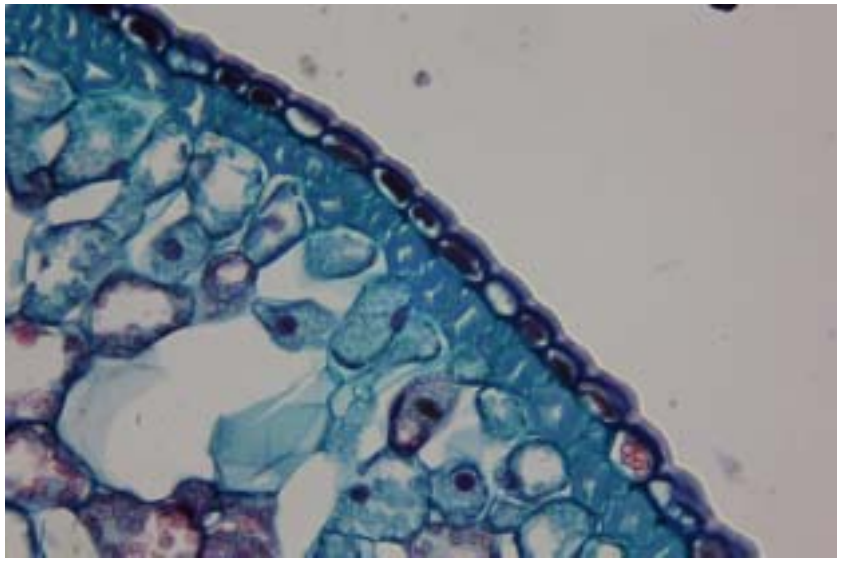
Mark scheme abbreviations

;	separates marking points
/	alternative answers for the same point
R	reject
A	accept (for answers correctly cued by the question, or by extra guidance)
AW	alternative wording (where responses vary more than usual)
underline	actual word given must be used by candidate (grammatical variants accepted)
max	indicates the maximum number of marks that can be given
ora	or reverse argument
mp	marking point (with relevant number)
ecf	error carried forward
I	ignore
AVP	alternative valid point

Question	Answer	Marks
1(a)(i)	1 heading for independent variable (column to left of recorded data or top row headed) sample / mock urine / solution **;** 2 time to first colour change / seconds **;** 3 colours and times for **U1**, **U2**, and **U3 ;** 4 records whole numbers only **;**	**4**
1(a)(ii)	interprets correct answer from results **;**	**1**
1(a)(iii)	mock urine sample with shortest time to first colour change **;**	**1**
1(a)(iv)	interprets correct answer from results **;**	**1**
1(a)(v)	decides volume of 2% glucose solution is 2.5 cm^3 **;** decides total volume of glucose concentration is 10.0 cm^3 **;**	**2**
1(a)(vi)	interprets correct answer from results **;**	**1**
1(a)(vii)	time for 0.5% glucose **;** time for mock urine sample stated in **(a)(iv) ;**	**2**
1(a)(viii)	tick in correct place based on candidates results **;**	**1**

Question	Answer	Marks
1(a)(ix)	use more concentrations **;** named concentrations in narrower range / described method of dilution of 2% glucose solution **;** plot a graph and read off graph **;**	**3**
1(b)	1 minimum size **+** no shading **+** no cells **;** 2 at least 4 layers (minimum of five lines drawn) **;** 3 inner layer of tissue made of 2 lines drawn showing lobed shape **;** 4 half a star shape of central lumen **;**	**4**

Question	Answer	Marks
2(a)	1 size at least 40 mm across the largest cell at the widest point **+** quality of lines are continuous, thin and sharp **;** 2 draws only four cells **+** drawn as a chain**;** 3 two lines drawn around each cell **+** three lines where cells touch **;** 4 at least one cell contains an inclusion **;** 5 label line and label to **C** / cell wall / cellulose **;**  *TS Juniper leaf*	**5**

Question	Answer	Marks
2(b)(i)	1 *x*-axis time of day **+** *y-axis* mean rate of transpiration **;** 2 scale on *x*-axis: 02.00 to 2 cm **+** scale on *y*-axis 0.5 au to 2 cm **+** labels origin **;** 3 correct plotting of five points with a small cross or dot in circle **;** 4 five plots with **either** ruled sharp thin lines point to point **or** smooth curve with sharp thin line **;**	**4**
2(b)(ii)	displays value at 11:30 **+** value at 08:30 **;** records answer to appropriate number of decimal places **+** units **;**	**2**
2(b)(iii)	*three from* 1 increased temperature **;** 2 (so) faster evaporation or water from leaf / faster diffusion of water vapour **;** 3 increased light intensity **;** 4 (so) stomata open wider / more stomata open **;** 5 AVP **;**	**3**

Question	Answer	Marks
2(c)(i)	collects four measurements **+** correct units **;** divides by 59 **;**	**2**
2(c)(ii)	displays addition of measurements and division by the number of measurements **;** correct answer **;**	**2**
2(d)	two correct differences **; ;**	**2**