

**NOVEMBER 2002**

**GCE Advanced Subsidiary Level**

**MARK SCHEME**

**MAXIMUM MARK : 25**

**SYLLABUS/COMPONENT :9700 /3**

**BIOLOGY  
(PRACTICAL (AS))**



Page 1	Mark Scheme	Syllabus	Paper
	AS Level Examinations – November 2002	9700	3

Qn	Expected Answers	Mark	Additional Guidance
1 a	10 10 15 5 20 0	1 1 1	
1 b i	0M > 50 mm 0.75M & 1M < 50 mm change in length calculated correctly mean calculated correctly + and – signs used correctly	1 1 1 1 1	- signs must be used
1 b ii	axis correctly orientated with units and scale correct all plots correct straight line of best fit correct	1 1 1	
1 b iii	water potential of distilled water > than cells therefore water enters cells water potential of 1M < cells therefore water leaves cells correct ref to water potential	Max 5	Accept hypo and hypertonic if correct but max 4 if no correct ref to water potential
1 b iv	correct as read from graph with units mol dm <sup>-3</sup> reason must indicate net movement / equilibrium	1 1	
1 c	more accurate good reason eg can measure to several decimal places / length may be cut at angle	1 1	Any good reason but reject can work out mass / vol of water
1 d	Explain how epidermal strips obtained Immerse in soln for > 15 mins Place under microscope Determine percentage plasmolysis for each solution Use 50+ cells each time. Plot graph Determine 50% plasmolysis Plasmolysis explained / incipient plasmolysis	Max 5       25	