

**NOVEMBER 2002**

**GCE Advanced Subsidiary Level**

|   |
|---|
| <b>MARK SCHEME</b>  |
| <b>MAXIMUM MARK : 25</b>  |
| <b>SYLLABUS/COMPONENT :9700 /3</b><br><b>BIOLOGY</b><br><b>(PRACTICAL (AS))</b> |



|        |                                       |        |
|--------|---------------------------------------|--------|
| Page 1 | Mark Scheme                           | Syllab |
|        | AS Level Examinations – November 2002 | 9700   |

| Qn      | Expected Answers  | Mark                                | Additional Guidance  |
|---------|---|-------------------------------------|--|
| 1 a     | 10 10<br>15 5<br>20 0   | 1<br>1<br>1                         |  |
| 1 b i   | 0M > 50 mm<br>0.75M & 1M < 50 mm<br>change in length calculated correctly<br>mean calculated correctly<br>+ and – signs used correctly  | 1<br>1<br>1<br>1<br>1               | - signs must be used   |
| 1 b ii  | axis correctly orientated with units and scale correct<br>all plots correct<br>straight line of best fit correct  | 1<br>1<br>1                         |  |
| 1 b iii | water potential of distilled water > than cells<br>therefore water enters cells<br>water potential of 1M < cells<br>therefore water leaves cells<br>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><br>reason must indicate net movement / equilibrium   | 1<br>1                              |  |
| 1 c     | more accurate<br>good reason eg can measure to several decimal places / length may be cut at angle  | 1<br>1                              | Any good reason but reject can work out mass / vol of water                          |
| 1 d     | Explain how epidermal strips obtained<br>Immerse in soln for > 15 mins<br>Place under microscope<br>Determine percentage plasmolysis for each solution<br>Use 50+ cells each time<br>Plot graph<br>Determine 50% plasmolysis<br>Plasmolysis explained / incipient plasmolysis | Max 5<br><br><br><br><br><br><br>25 |  |
|         |   |                                     |  |