

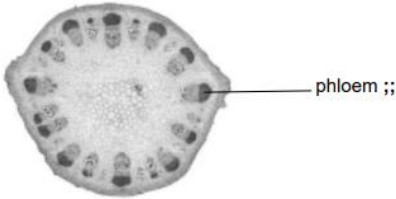
# **8. Transport in plants**

## **8.2 Water uptake**

### **Paper 3 and 4**

#### **Marking Scheme**

## Q1.

|     |                                                                                          |          |                                                                                       |
|-----|------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------|
| (a) |         | <b>2</b> | MP1 correct naming of phloem labelled anywhere<br>MP2 label line to correct structure |
| (b) | root hair ;<br>osmosis ;<br>root cortex ;<br>mesophyll ;<br>stomata ;<br>transpiration ; | <b>6</b> |                                                                                       |

## Q2.

|          |                                                                                                                               |          |                                |
|----------|-------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------|
| (a)(i)   | (root) cortex (cell) ;                                                                                                        | <b>1</b> |                                |
| (a)(ii)  | root hair (cell) ;<br>large surface area / elongated shape / AW ;                                                             | <b>2</b> |                                |
| (a)(iii) | osmosis ;                                                                                                                     | <b>1</b> |                                |
| (b)      | <i>any two from:</i><br>photosynthesis / metabolic processes ;<br>support / AW ;<br>solvent ;<br>transport ;<br>germination ; | <b>2</b> |                                |
| (c)      | <i>any two from:</i><br>wind(speed) ;<br>temperature ;<br>AVP ;                                                               | <b>2</b> | e.g. humidity/ light intensity |

## Q3.

|         |                                                                                                               |          |                                 |
|---------|---------------------------------------------------------------------------------------------------------------|----------|---------------------------------|
| (a)(i)  | arrow drawn going <b>into</b> the root ;<br>arrow drawn coming <b>out</b> from (either surface) of the leaf ; | <b>2</b> | <b>R</b> if no arrowheads shown |
| (a)(ii) | xylem ;                                                                                                       | <b>1</b> |                                 |

## Q4.

|          |                    |          |  |
|----------|--------------------|----------|--|
| (a)(i)   | root hair (cell) ; | <b>1</b> |  |
| (a)(ii)  | xylem ;            | <b>1</b> |  |
| (a)(iii) | leaf / leaves ;    | <b>1</b> |  |

**Q5.**

|     |                                                                                                                                                                                             |          |                          |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------|
| (d) | 1 ref. to root hair (cell) ;<br>2 across cortex ;<br>3 ref. to xylem ;<br>4 moves up the stem ;<br>5 (into) mesophyll (cells) ;<br>6 AVP ; e.g. osmosis / diffusion , ref. to transpiration | <b>4</b> | must be in correct order |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------|

**Q6.**

|          |                                                                                                                         |          |                                          |
|----------|-------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------|
| (c)(i)   | into the root ;<br>(via) <u>root hair cell</u> ;<br>by osmosis / diffusion ;<br>across a partially permeable membrane ; | <b>3</b> |                                          |
| (c)(ii)  | support / transport of mineral ions ;                                                                                   | <b>1</b> | <b>A</b> cooling / solvent / germination |
| (c)(iii) | xylem ;                                                                                                                 | <b>1</b> |                                          |
| (c)(iv)  | stoma(ta) ;                                                                                                             | <b>1</b> | <b>A</b> guard cells                     |