**Q 2004 8**

(a) Observation of a transverse section of a dicotyledonous stem reveals vascular and other tissues. Name **two** of the tissues that are not vascular tissues.

(b) Answer the following questions in relation to the preparation of a microscope slide of a transverse section of a dicotyledonous stem.

State **one** reason why you used an herbaceous stem rather than a woody one.

Explain how you cut the section.

Why is it desirable to cut the section as thinly as possible? …………………..……

Draw a diagram of the section as seen under the microscope. Label the vascular tissues that can be seen.

**MS 2004 8**

**(a)** dermal / ground / meristematic ***any two* 2(3)**

*[allow correctly named tissue e.g. cambium]*

## (b) Why:

Easier to cut (thin) sections **or** relevant comment on tissue arrangement (e.g. easier to see vascular bundles) **3**

## Method described:

Cut thin / named instrument e.g. blade, microtome, scalpel / between nodes / named support e.g. pith, carrot, wax / at right angle (across) / any safety procedure stated /

***any two* 2(3)**

To ensure light can pass through **or** to see (cells) clearly **3**

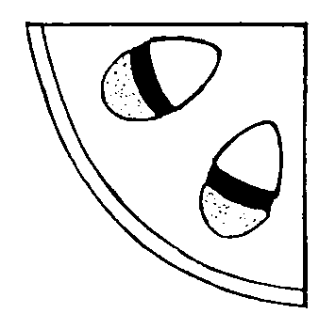
## Diagram 3, 0

[Diagram - *section with vascular bundles in ring (4)* ***or*** *at least one bundle divided]*

|  |  |  |
| --- | --- | --- |
| Labels: xylem and phloem in correct position  **Functions:** | **labels** | **3** |
| Phloem:– transport of food (or minerals or auxins) |  | **3** |
| Xylem:– transport of water **or** minerals |  | **3** |

**Q 2006 14 c**

The diagram shows part of a transverse section through a dicotyledonous stem.



* 1. Copy the diagram into your answer book and identify each of the following by placing the appropriate letter on your diagram:

phloem P, ground tissue G, xylem X, dermal tissue D.

* 1. In which of the tissues that you have identified are sugars mainly transported?
  2. State a function of D.
  3. In the course of your practical work you cut and observed a transverse section of a stem. Answer the following in relation to that procedure.
     1. What did you use to cut the section?
     2. How did you support the stem while you were cutting the section?
     3. How did you transfer the section to a microscope slide?
  4. State one way in which a transverse section through a monocotyledonous stem differs from the one that you cut.

**MS 2006 14 c**

|  |  |
| --- | --- |
| (i) 4 labels – **P** (*phloem),* ***G*** *(ground tissue),* ***X*** *( xylem),*  **D (***dermal tissue)* | **4(3)** |
| (ii) P (phloem) | **3** |
| (iii) protection **or** example of protection e.g. water loss, infection  **or** comment on turgor | **3** |
| (iv) 1. blade **or** scalpel | **3** |
| 2. pith / holder / hand **or** implied | **3** |
| 3. mounted needle **or** section lifter **or** forceps **or** paintbrush | **3** |
| (v) *Difference:* vascular bundles scattered | **3** |

**Q 2009 7**

|  |  |  |
| --- | --- | --- |
| **7.** (a) | (i)  (ii) | Why is a dicotyledonous (dicot) plant so called? Name a dicotyledonous plant. |
| (b) | (i) | Describe in detail how you prepared a microscope slide of a transverse section of the stem of a dicotyledonous plant. |

* 1. Give an account of the procedures that you followed in order to view your slide under the microscope.
  2. In the space below draw enough of your section to show and label the location of **each** of the following:
     1. Phloem. 2. Xylem. 3. Ground tissue.

**MS 2009 7**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **7.** | (a) | (i) | Two embryonic leaves **or** two seed leaves | **3** |
|  |  | (ii) | Any dicot named | **3** |
|  |  |  | |  |
|  | (b) | (i) | (Cut) thin (section) / (cut) away from self / with blade **or** scalpel **or** microtome / how transferred to slide / cover slip / how applied / (use of) water | **3(3)** |
|  |  | (ii) | (Slide) onto stage / lamp on **or** mirror / adjust (light) / start with low power lens / how focused | **3(3)** |
|  |  | (iii) | *Diagram*: | **3, 0** |
|  | *Labels*: | **3(1)** |