Transport in Plants – 2021/20 GCE Biology A Component 01

1. Nov/2021/Paper_H420/1/No.15

Water is transported across the root of a plant by more than one pathway.

Which of the following statements about water molecules moving via the symplast pathway is **not** correct?

A Water molecules can move from cell to cell without crossing a membrane.

B Water molecules can pass through the Casparian strip.

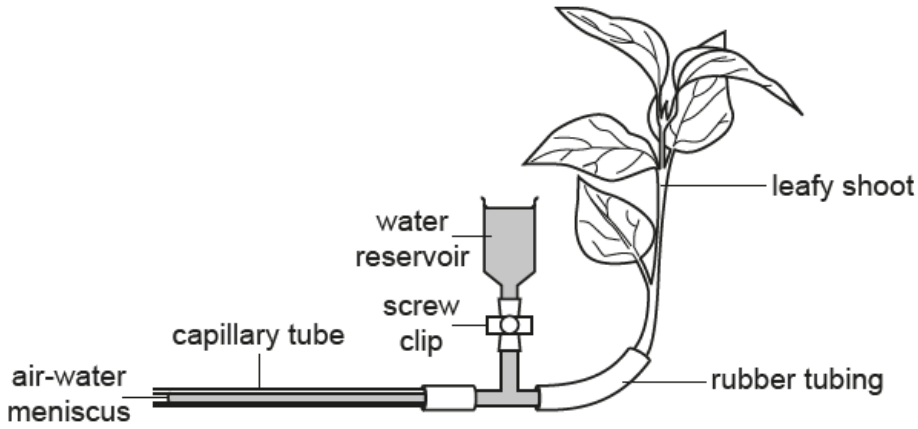
C Water molecules must pass through the endodermis.

D Water molecules travel between cells down a water potential gradient.

Your answer ☐ **[1]**

2. Nov/2021/Paper_H420/1/No.20(a)

The figure shows a potometer used to measure the rate of transpiration in a leafy shoot.



(a) Besides safety precautions, explain **one** practical precaution that should be taken when using a potometer.

Precaution .....

Explanation .....

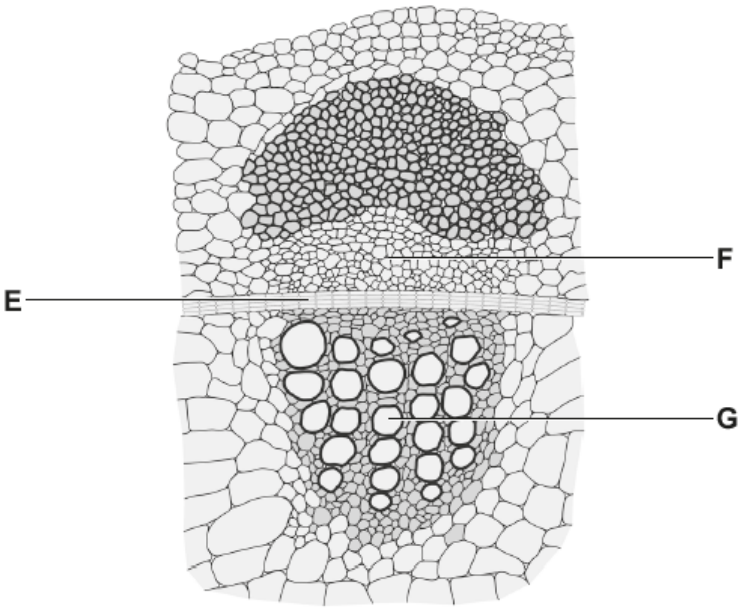
.....

.....

[2]

3. Nov/2020/Paper_H420/1/No.3

The figure below shows a drawing of a light microscope image. The image is a cross-section taken from the stem of a dicotyledonous plant.



Which of the rows, **A** to **D**, correctly identifies the name of the tissue labelled **E** and the functions of tissue **F** and tissue **G**?

	Name of tissue E	Function of tissue F	Function of tissue G
A	cambium	transport of assimilates	transport of water
B	cambium	transport of water	transport of assimilates
C	palisade cells	transport of assimilates	transport of water
D	palisade cells	transport of water	transport of assimilates

Your answer ☐ **[1]**

4. Nov/2020/Paper_H420/1/No.4

Which of the following statements, **A** to **D**, does **not** correctly describe the structure or formation of plant vascular tissues?

A Companion cells are linked to xylem vessels by plasmodesmata.

B Mature sieve tube elements do not contain nuclei.

C Phloem and xylem are formed by differentiation of vascular meristems.

D Xylem vessels have non-lignified pits to allow movement in and out.

Your answer ☐ **[1]**

5. Nov/2020/Paper_H420/1/No.5

Large multicellular animals need a transport system for oxygen and carbon dioxide.

Large multicellular plants do not need a transport system for oxygen and carbon dioxide.

Which of the following statements, **A** to **D**, correctly explains these observations?

A Large plants have a low surface area to volume ratio.

B Plant cells have a low metabolic rate.

C Plants generate ATP during photosynthesis, so they do not need to respire.

D Plants generate oxygen during photosynthesis.

Your answer ☐ **[1]**

6. Nov/2020/Paper_H420/1/No.7

Which of the following statements about water transport in plants is/are correct?

1 Transpiration happens as a consequence of the need for gas exchange.
2 There are cohesive forces between water molecules because they form hydrogen bonds with one another.
3 Water is drawn up the stem due to adhesive forces between water molecules.

A 1, 2 and 3

B only 1 and 2

C only 2 and 3

D only 1

Your answer ☐ **[1]**