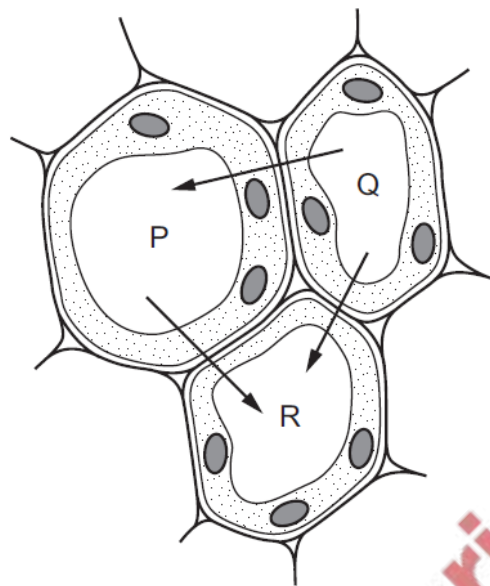


**1. Nov/2020/Paper\_11/No.2**

The diagram shows three plant cells labelled P, Q and R. The arrows show the direction of water movement by osmosis.

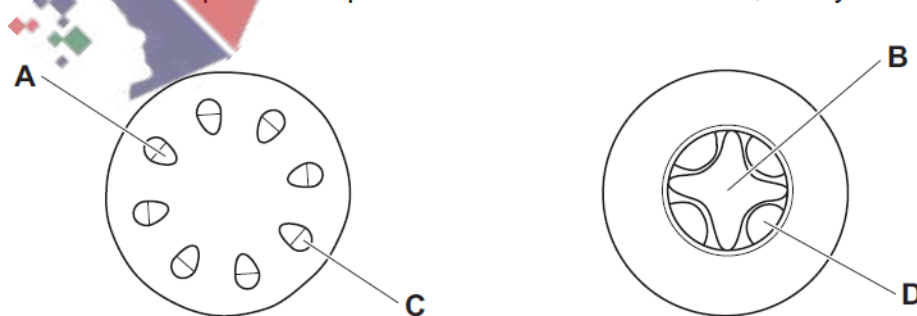


What is the correct order of water potential in the cells, from the highest to the lowest?

	highest	middle	lowest
<b>A</b>	P	Q	R
<b>B</b>	P	R	Q
<b>C</b>	Q	P	R
<b>D</b>	R	P	Q

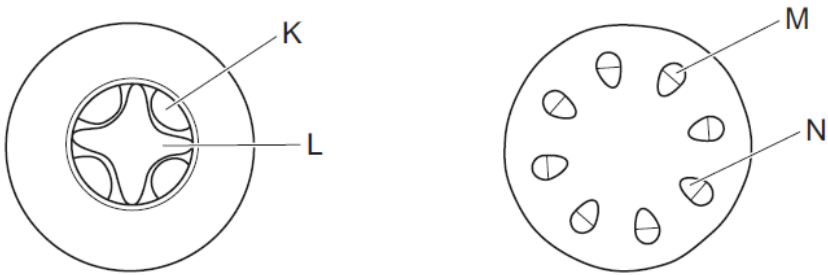
**2. Nov/2020/Paper\_11/No.11**

Which diagram shows the position of phloem tissue in a herbaceous, dicotyledonous root?



3. Nov/2020/Paper\_12/No.11

The diagrams show transverse sections of a dicotyledonous root and stem.

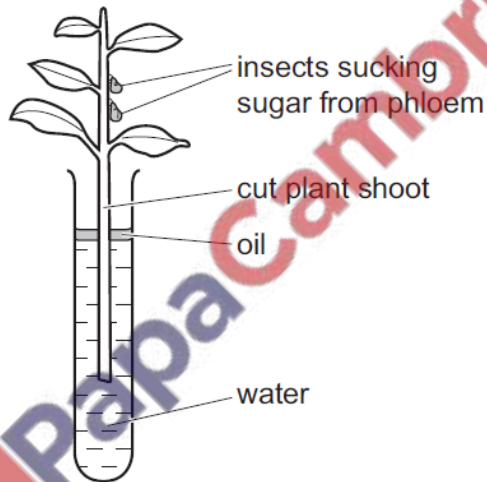


Which tissues transport sugar?

- A K and M      B K and L      C L and M      D L and N

4. Nov/2020/Paper\_12/No.12

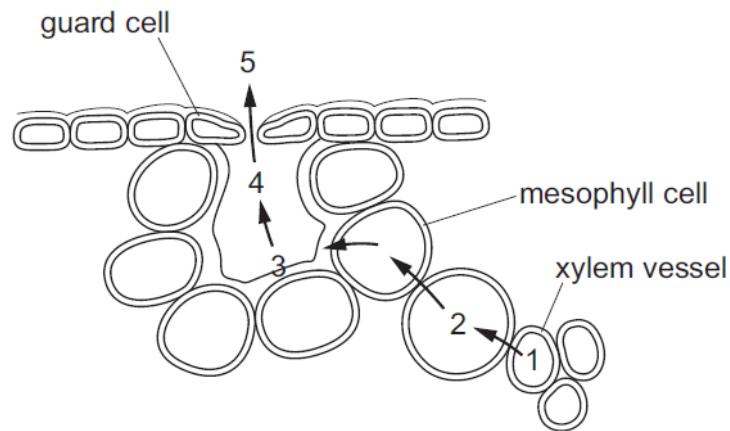
The diagram shows a cut plant shoot in a container of water.



What will stop the movement of water up this stem?

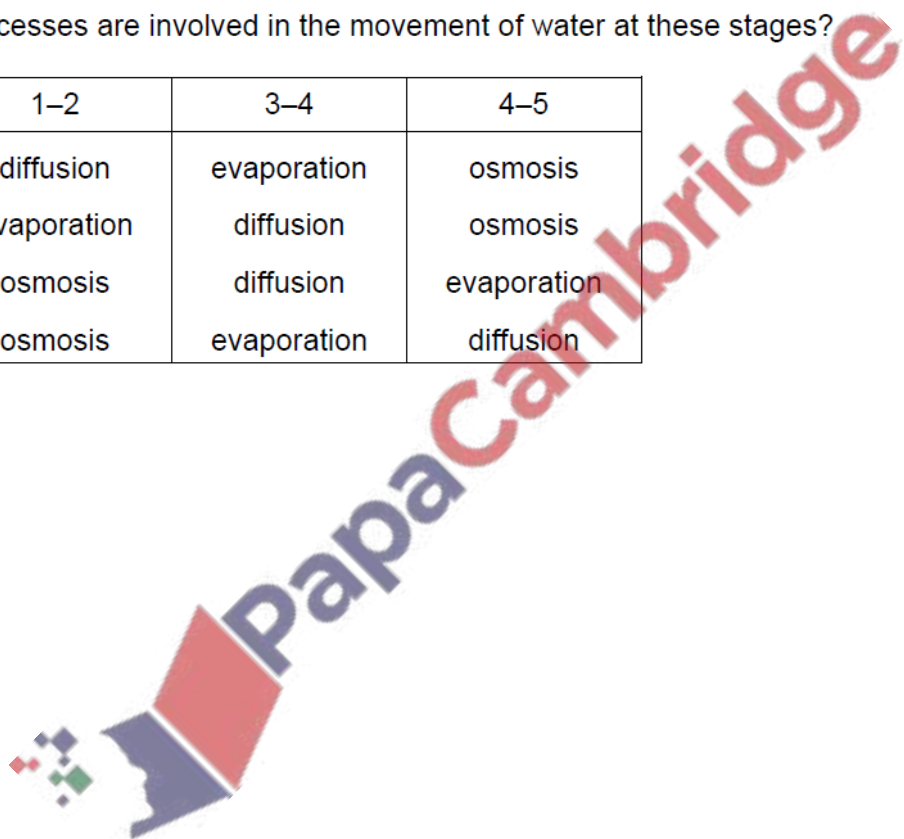
- A a fall in the humidity of the air  
B a rise in the air temperature  
C a blockage in the xylem  
D an insect sucking sugar from the phloem

The diagram shows the movement of water through part of a leaf.



Which processes are involved in the movement of water at these stages?

	1-2	3-4	4-5
<b>A</b>	diffusion	evaporation	osmosis
<b>B</b>	evaporation	diffusion	osmosis
<b>C</b>	osmosis	diffusion	evaporation
<b>D</b>	osmosis	evaporation	diffusion



6. Jun/2020/Paper\_21/No.3

The photograph shows an insect called a leafhopper. When it feeds, its mouthparts penetrate the xylem of the plant on which it lives.



Leafhoppers carry disease-causing bacteria from plant to plant.

(a) (i) State the term used for a disease-causing organism.

..... [1]

(ii) State the term used for an animal, such as an insect, that carries disease-causing organisms.

..... [1]

(b) The bacteria carried by the leafhopper reproduce inside the plant stem and block the xylem.

(i) Suggest and explain why this can cause the leaves of the plant to wilt.

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.....  
..... [4]

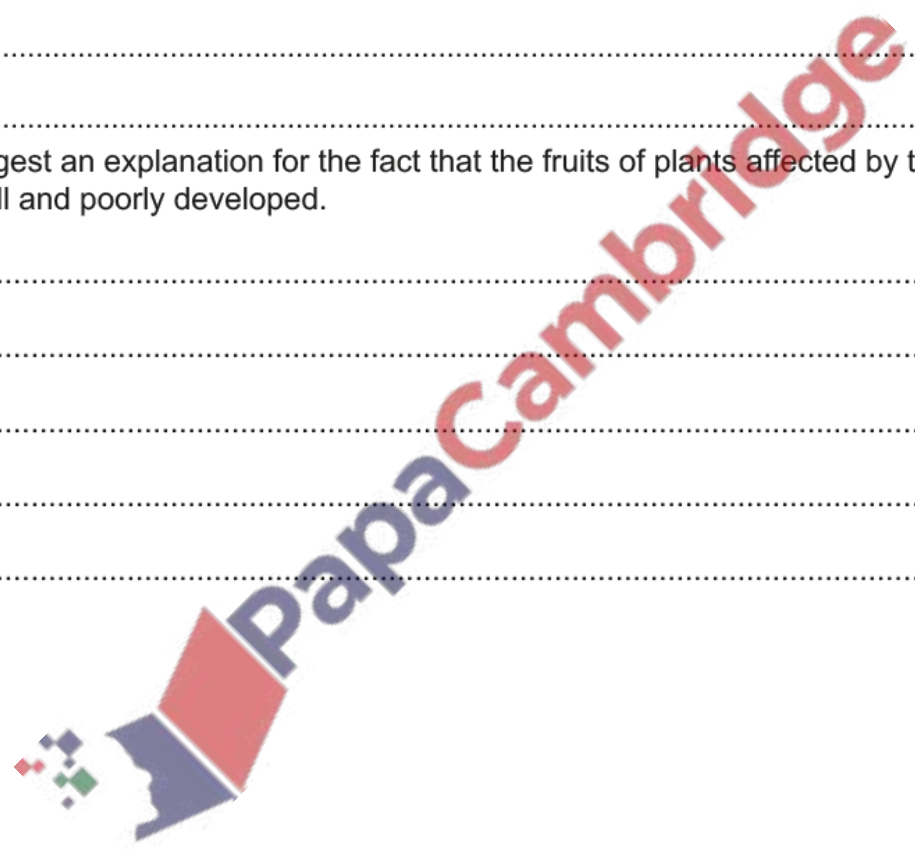
(ii) The leaves of plants affected by these bacteria may also develop white patches. Suggest reasons for this.

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..... [2]

(iii) Suggest an explanation for the fact that the fruits of plants affected by these bacteria are small and poorly developed.

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..... [4]

[Total: 12]



(a) Describe how a plant takes in carbon dioxide from the air and mineral ions from the soil.

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..... [7]

(b) Outline how a **named** mineral ion taken in by a plant from the soil is made available for use in the leaves of the plant to produce chlorophyll.

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..... [3]

[Total: 10]