Q1.

(a) Water has a high heat capacity and a large latent heat of vaporisation.

Describe the importance of each of these properties to living organisms.

High heat capacity _____

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Large latent heat of vaporisation _____

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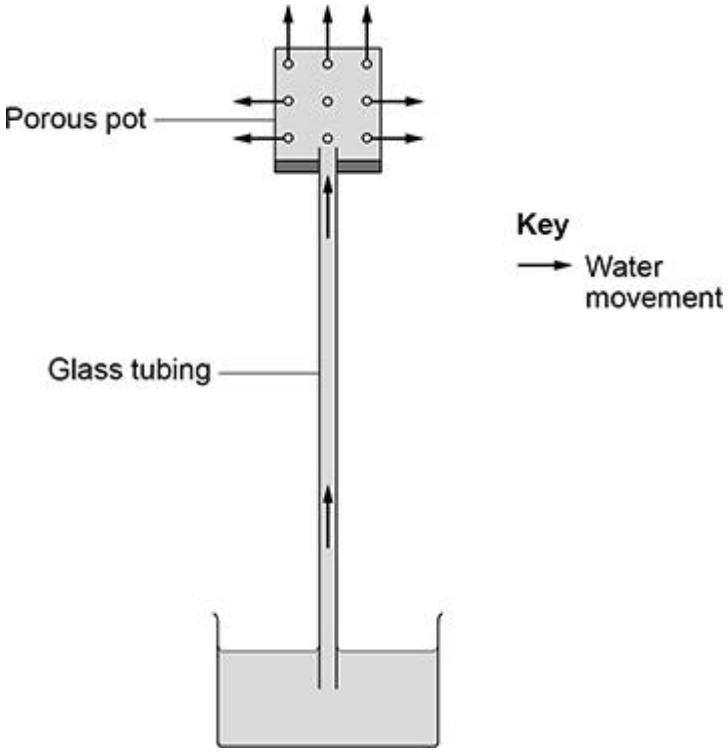
(2)

(b) The figure below shows that water loss from a porous pot can cause the upward movement of water.



Biologists have concluded that the experiment in the figure above supports the cohesion–tension theory of water transport in the xylem.

Explain how this conclusion is supported by the experiment in the figure above.

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(3)

(c) An air bubble was introduced into the glass tubing in the figure above. The air bubble moved a distance (d) of 1.5 cm in 120 minutes. The radius of the lumen (hole) of the glass tubing was 0.6 cm

Use this information and the formula $\pi r^2 d$ to calculate the rate of water movement in the glass tubing in $cm^3\ hour^{-1}$.

Use $\pi = 3.14$ in your calculation.

Answer _____ $cm^3\ hour^{-1}$

(1)

(Total 6 marks)