Movement into and out of cells – 2020 O Level 5090

1. Jun/2020/Paper_11/No.3

    A student takes a potato and cuts three pieces from it. Each piece is $5\,cm \times 0.5\,cm \times 0.5\,cm$. He places the three potato pieces into three different concentrations of sugar solution.

    After two hours, he removes the potato pieces from the sugar solutions and measures their lengths.

    The results are shown in the table.

solution	length of potato piece after two hours / cm
X	5.2
Y	4.7
Z	5.3

    What can be concluded from these results?

    A   Solution Y has a lower water potential than the potato cells.

    B   Solution Z has the lowest water potential.

    C   The potato piece in solution X increases in length because it takes up sugar.

    D   The potato piece in solution Y decreases in length because it loses sugar.

2. Jun/2020/Paper_12/No.11

    Water and ions can reach the xylem of a plant root through cell walls, without passing through a cell membrane.

    How do these substances move through the cell walls?

	water	ions
A	diffusion	diffusion
B	diffusion	osmosis
C	osmosis	diffusion
D	osmosis	osmosis

3. Nov/2020/Paper_12/No.2

    Which statements about diffusion are correct?

    1   Molecules move at random.

    2   Molecules move down a concentration gradient.

    3   Molecules may move through a partially permeable membrane.

    A   1, 2 and 3   B   1 and 2 only   C   1 and 3 only   D   2 and 3 only

4. Nov/2020/Paper_21/No.5

(a) Name the substance absorbed by plants using the process of osmosis.

.... [1]

(b) The diagram represents osmosis taking place between two sucrose solutions of different concentrations.

F

E

G

Identify **E**, **F** and **G**.

molecule **E** ....

structure **F** ....

molecule **G** ....

[3]

(c) Explain, with reference to the diagram, how osmosis takes place.

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.... [5]

[Total: 9]