



## The National Orthodox School / Shmaisani

**Subject: Biology**

**Homework**

**Name:**

**Date:**

**Grade 9 IB**

### Question :

The table below gives the results of an experiment in which samples taken from a potato tuber were bathed in solutions with different concentrations of sucrose.

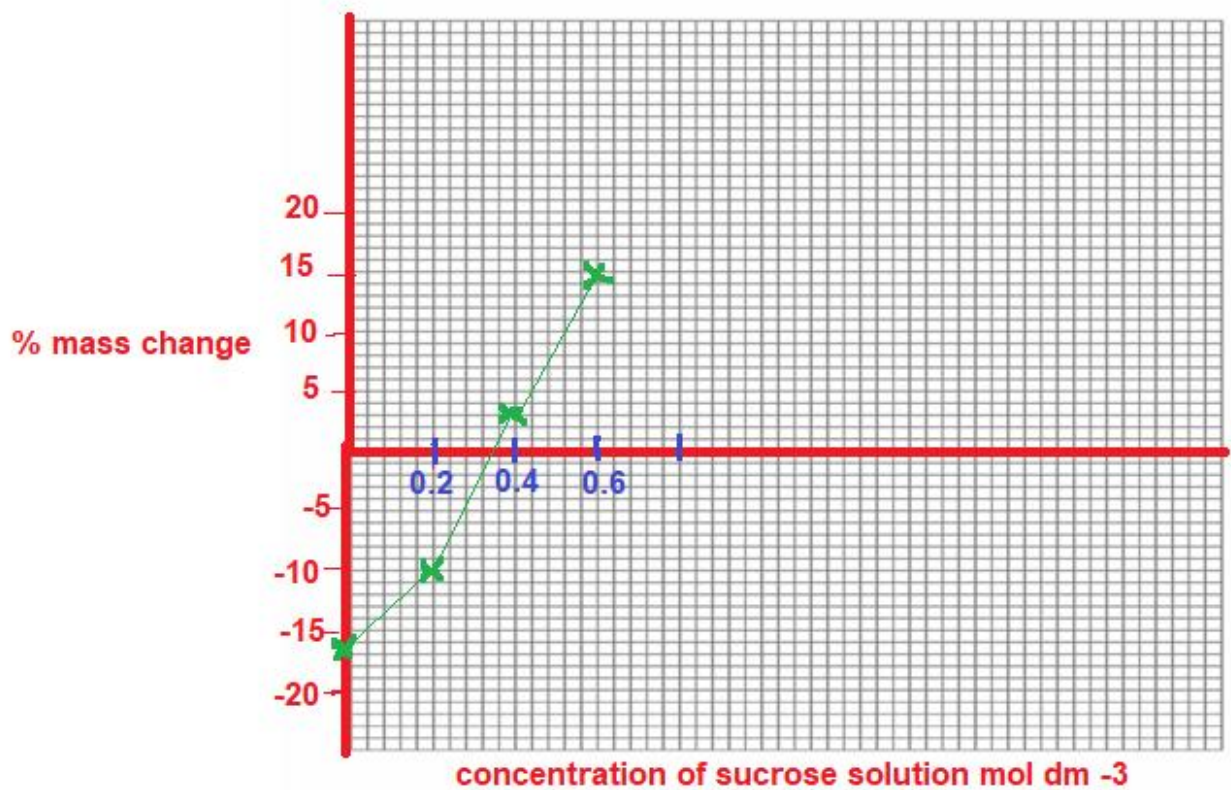
Concentration of sucrose ( $\text{mol dm}^{-3}$ )	0.0	0.2	0.4	0.6
Initial mass (g)	22.2	23.7	21.8	22.5
Final mass (g)	18.7	21.3	22.4	25.9
Mass change (g)	-3.5	-2.4	0.6	+3.4
% mass change	-16%	-10 %	3 %	15 %

- a) Complete the table by calculating the missing mass changes and percentage mass changes. [3]
- b) Draw graph to display the percentage mass changes. [4]
- c) (i) Estimate the osmolarity of the potato tissue. [1]
- (ii) Explain the reasons for your estimate. [2]



Answers :

b)



c) i) 0.32 – 0.34 mol dm<sup>-3</sup>

( the intersection between the line graph and the x axis )

ii) the percentage mass change is zero , this indicates that the mass of the potato did not change , the solutions are isotonic ( same osmolarity ).

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