2A2B HUMAN BIOLOGY OSMOSIS VALIDATION TEST

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ /23

1. Write a definition for the word diffusion.

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(2 marks)

2. Write a definition for the word osmosis.

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(2 marks)

3. During the ‘osmosis egg’ experiment which was done in class, what was the dependent variable?

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4. During the ‘osmosis egg’ experiment which was done in class, what was the independent variable?

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5. During the ‘osmosis egg’ experiment which was done in class, explain one way accuracy could have been increased.

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(1 mark)

6. The mass of one hundred (100) raisins was measured. The raisins where placed in 1 litre of distilled water and left for 48 hours. After 48 hours, the mass of the raisins was recorded. Another one hundred (100) raisins of the same variety had their mass measured. This second group of raisins were placed in a beaker containing 1 litre of concentrated sugar solution. After 48 hours the raisins were removed from the beakers and their mass recorded.

This data is shown in the table below.

|  |  |  |
| --- | --- | --- |
| **Solution raisins were placed in** | **Starting mass (g)** | **Mass (g) after 48 hours** |
| Distilled water | 50 | 120 |
| Sugar solution | 50 | 55 |

a) What was the independent variable for this investigation?

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b) What was the dependent variable for this investigation?

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c) List two controlled variables mentioned.

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(2 marks)

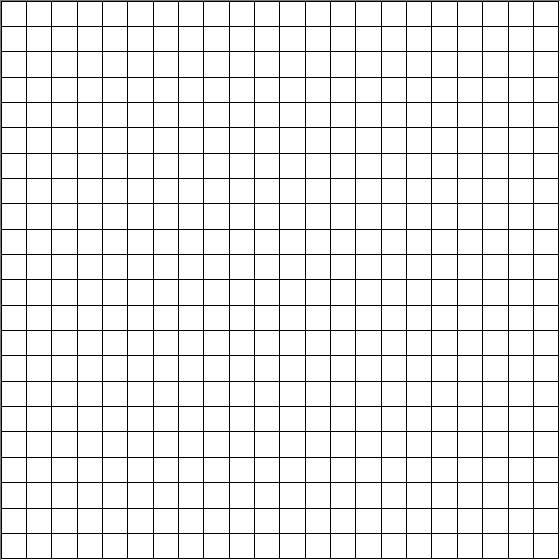
d) List one other variable that should have been controlled that was not mentioned above

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(1 mark)

e) Draw a graph that allows you to COMPARE the results of the experiment.

(5 marks)



e) Discuss two ways in which the experiment could be improved in order to reduce error and improve accuracy.

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(2 marks)

f. Complete the sentences below by filling in the blank words. Use the information you have learnt about the movement of water molecules.

If the raisin was a model of a living cell, the skin of the raisin would represent the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell.

A solution with a large amount of solvent compared to solute can be described as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solution.

The water molecules moved from an area where there was a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ concentration of

water molecules, to an area where there was a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ concentration of water molecules.

The water molecules moved due to the concentration \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(5 marks)