OSMOSIS VALIDATION TEST

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ /24

1. What is osmosis?

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(2 marks)

2. How does it differ from diffusion?

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(2 marks)

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

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

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5. During the ‘Gummy Bear’ 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.

a) What hypothesis may they have been testing?

(2 marks)

This data is shown in the table below.

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

b) There are some things missing from this table. Fill them in (2 marks)

c) What was the independent variable for this investigation?

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d) What was the dependent variable for this investigation?

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e) List two controlled variables mentioned.

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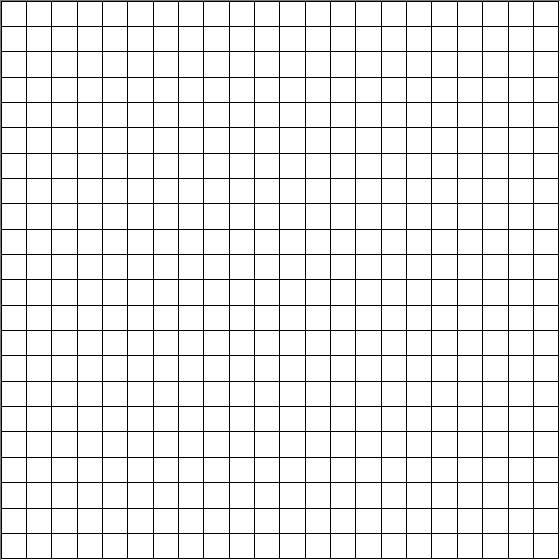
(2 marks)

e) 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) Write a conclusion for this experiment.

(3 marks)

2A2B HUMAN BIOLOGY OSMOSIS VALIDATION TEST

SOLUTIONS /23

1. What is osmosis?.

Diffusion of solvent minus 1 for each point missing

Through diff perm membrane

High solvent conc to low solvent conc (2 marks)

2. How does it differ from diffusion.

Diffusion may not include a membrane

Movenent of solute (2 marks)

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

Change in mass of egg (1 mark)

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

Solution egg was in (1 mark)

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

Any reasonable answer

(1 mark)

6. Surrounding the egg was a membrane. What is this membrane?

Cell or Plasma membrane

(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.

a) What hypothesis may they have been testing? Any reasonable (2 marks)

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 |

b) What was the independent variable for this investigation? Solution (1 mark)

c) What was the dependent variable for this investigation? Change in mass (1 mark)

d) List two controlled variables mentioned.

Mass of raisons any 2

Time

Same variety volume of solution

(2 marks)

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

any reasonable (1 mark)

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

(5 marks)

Minus 1 for each point missing

e) Write a conclusion for this experiment.

Hypothesis supported? 1 mark each

Trend

Reasons

(3 marks)