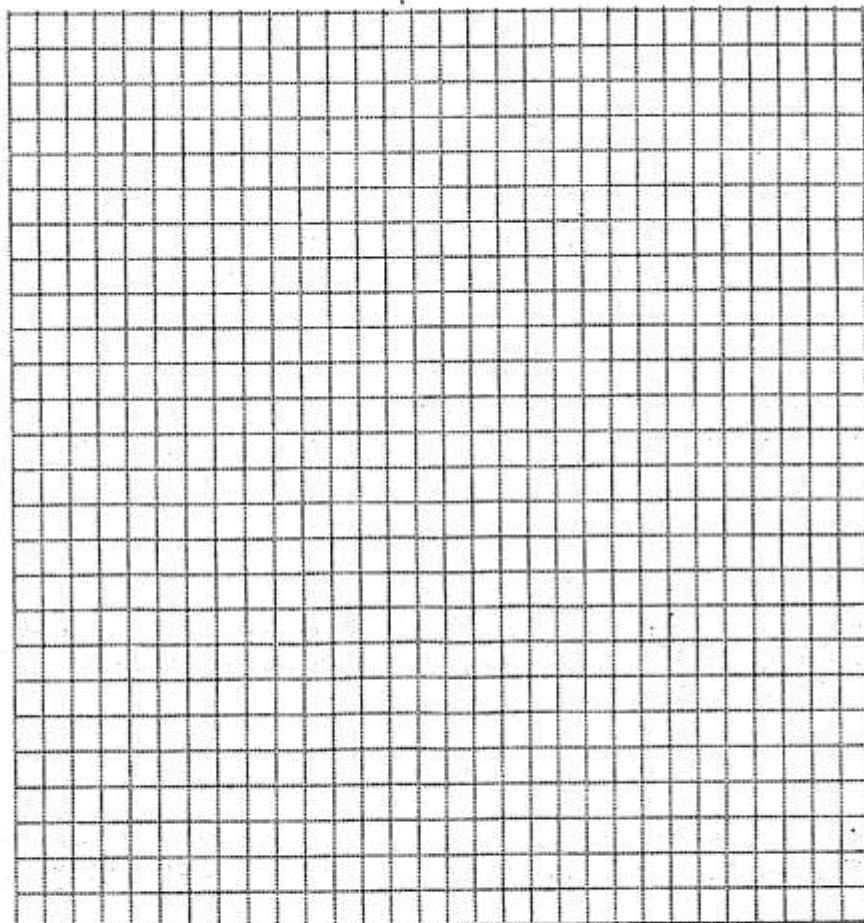


4. An experiment was designed to determine the correct salinity of water (percentage of salt in water) required to successfully clone certain cells using tissue culture. Three cell samples were placed in three different salt solutions and their change in mass was recorded in the data table shown below.

SALT IN WATER (%)	CHANGE IN MASS OF CELLS (%)
0.5	+0.82
1.0	+0.40
1.5	-0.15

- a) Use the grid provided to graph the data above. Label the y-axis as salt in water (%). (2 marks)



- b) If the cells must be cultured in a solution that does not cause them to shrink or swell, estimate the percentage of salt in water that would be best for culturing the cells. (1 mark)

- c) Why do the cells in the 1.5% salt solution lose mass? (1 mark)

- d) Name the process and explain how each of the following nutrients, when added to any of the solutions, would enter the cells in the culture. (2 marks)

Glucose:

Name of Process: _____

Explanation: _____

Oxygen:

Name of Process: _____

Explanation: _____

OVER

3. a) Explain why a cell membrane is described as *selectively permeable*. (1 mark)

b) Describe how the structure of the cell membrane permits molecules to enter the cell by the following processes. (3 marks: 1 mark each)

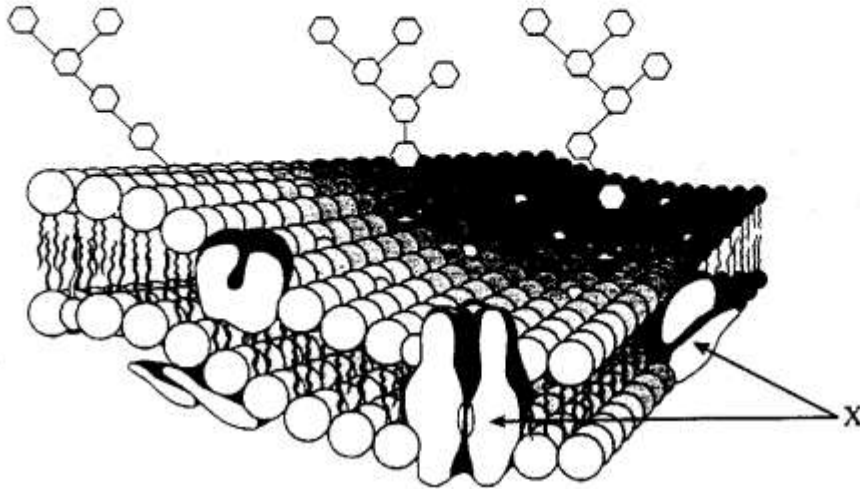
i) Osmosis:

ii) Facilitated Transport:

iii) Pinocytosis:

over →

Use the following diagram to answer question 2.



2. a) Identify the molecules labelled X.

(1 mark)

b) Name **two** processes by which these molecules function in order to move materials.

(2 marks)

i) _____

ii) _____
