

AQA, OCR, Edexcel

GCSE Science

GCSE Biology

Osmosis Questions

Name:

M M E

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Total Marks: /23

Q1: Define Osmosis

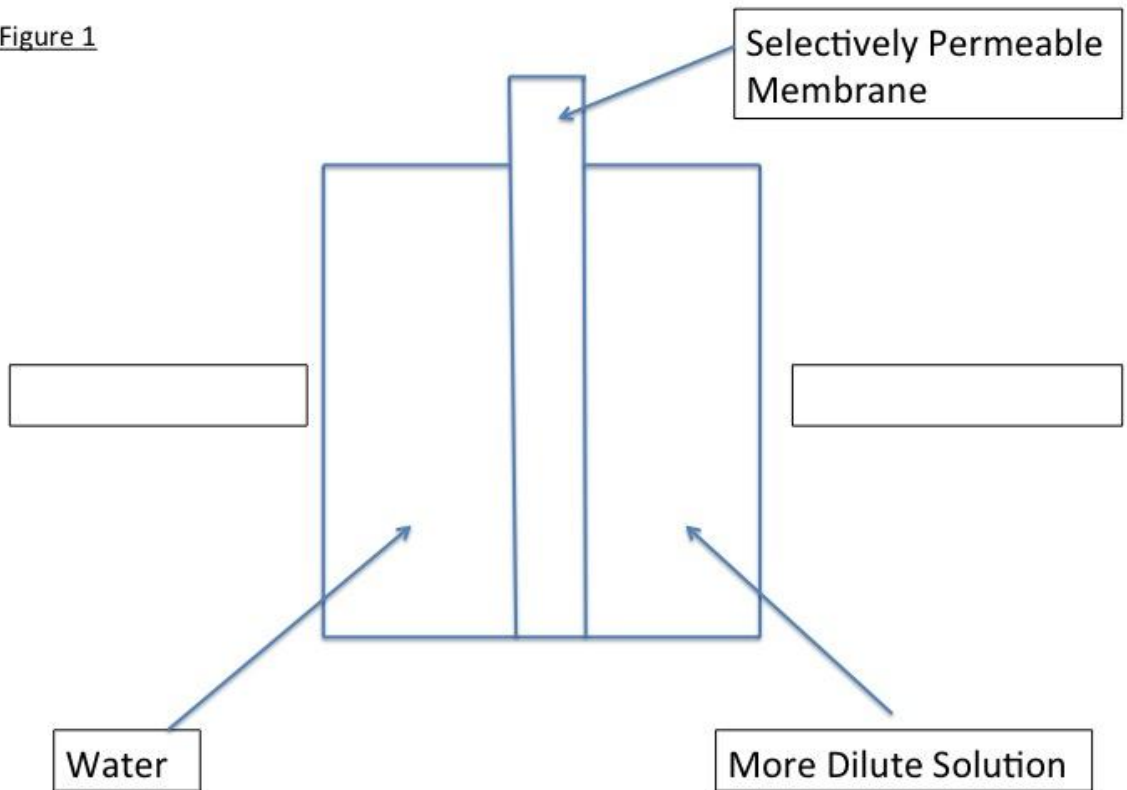
(3 marks)

Q2: What sorts of membrane does osmosis occur through?

(1 mark)

Q3: i) The diagram below shows an experiment using osmosis. Label the concentrations of water, high and low and draw and arrow to show how the water moves.

Figure 1



(2 marks)

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ii) Explain what will happen to the movement of molecules once equilibrium is reached.

(2 marks)

iii) What is created when there is a high concentration and a low concentration?

(1 mark)

Q4: How do plants use osmosis?

(1 mark)

Q5: Calculate the percentage gain in mass seen in figure 2.

Figure 2



Mass before watering = 35.6g

Mass after watering = 42.3g

% Change = _____

(2 marks)

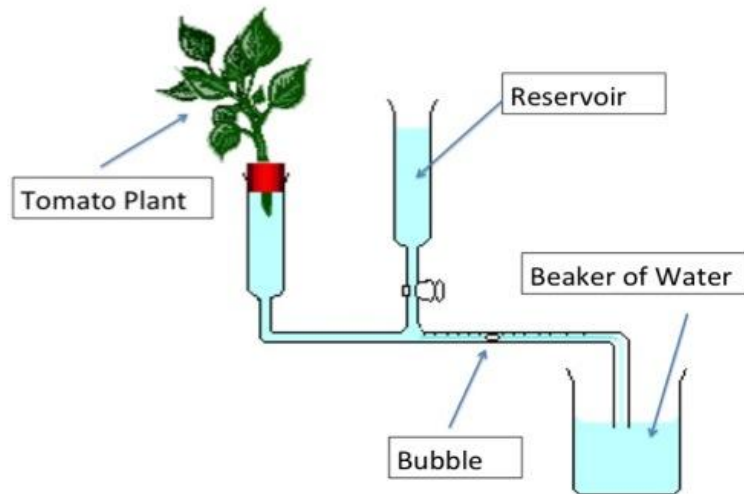
Q6: Students have designed an experiment to show osmosis in plants. Two potato chips are placed in beakers of water. Beaker A contains just water and beaker B contains water and a high concentration of sugar.

Using your knowledge of osmosis what would the students expect to happen?

(3 marks)

Q7: A student is measuring the rate of water loss of a tomato plant using a potometer

Figure 2



By measuring the movement of the bubble the volume of water lost can be calculated. The experiment showed the bubble move by 21mm in 30 minutes. Calculate the rate of water loss in mm^3/s .

Rate of water loss _____

Q8: What happens to an animal cell if too much water enters a cell via osmosis?

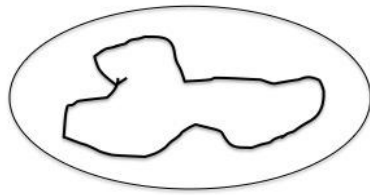
(1 mark)

Q9: What allows plant cells to keep their shape when water is lost from the cell?

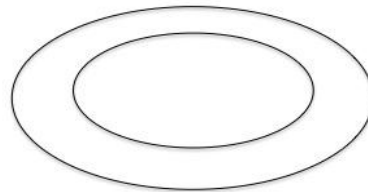
_____ (1 mark)

Q10: Cell A and cell B have been exposed to different conditions. One has taken up water the other has taken up a strong sugar solution.

A



B



i) Which condition has cell A been exposed to?

_____ (1 mark)

ii) What has happened to cell A?

_____ (1 mark)