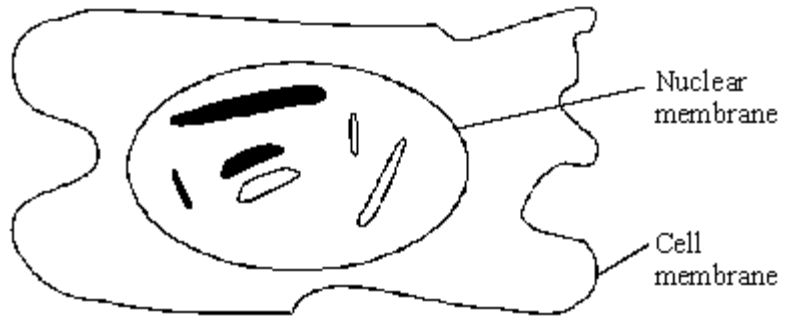
Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B1 Cell Biology

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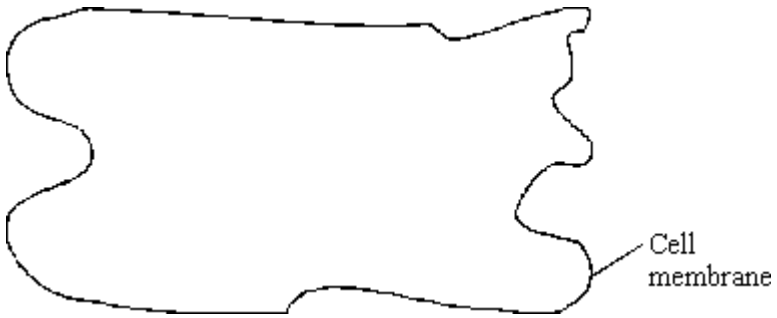
Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

(a) The diagram shows a normal body cell which has six chromosomes.

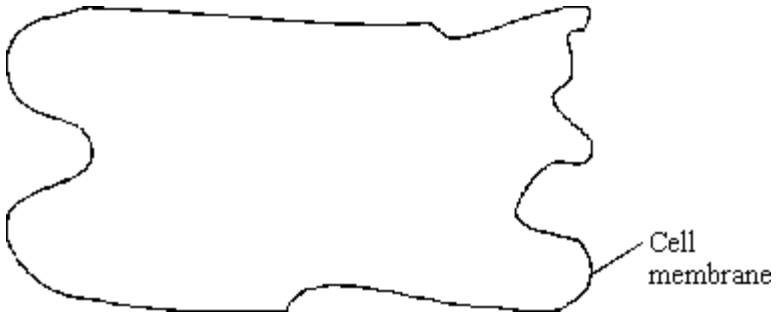


(i) Complete the diagram below to show **one** cell produced from this cell by *mitosis.*



(3)

(ii) Complete the diagram below to show **one** cell produced from the original cell by *meiosis.*



(2)

(b) Thalassaemia is a blood disease. It is determined by a single recessive allele. A person with one recessive allele does **not** get the disease but does act as a carrier. People with this pair of recessive alleles can become ill.

(i) Draw a genetic diagram to show the inheritance of' this disease if both parents are heterozygous.

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[Use the symbols T = dominant allele and t = recessive allele]

(3)

(ii) What are the chances of a baby inheriting the disease?

_____

(1)

(iii) What are the chances of a baby being a carrier if both parents are heterozygous?

_____

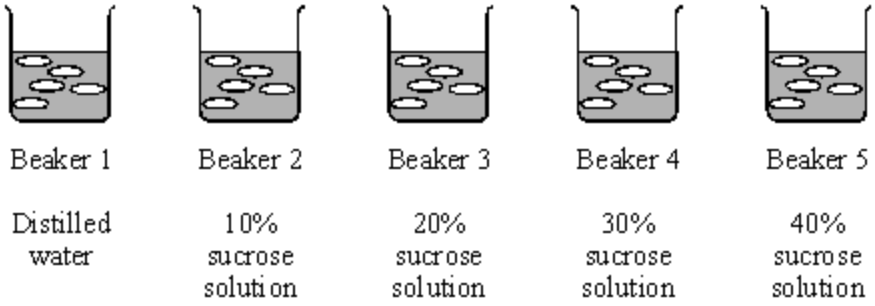
(1)

(Total 10 marks)

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Q2.

Some students set up an experiment using osmosis to find the concentration of sucrose solution in potato cell sap. They used discs of potato cut to the same size and weighing approximately 10 gms. The discs were put into each of five beakers.



(a) (i) After two hours they reweighed the discs after carefully blotting them first. Why did the students blot the potato before weighing it?

_____

_____

(1)

(ii) Their results are shown in the table below.

	Beaker 1	**Beaker 2**	**Beaker 3**	**Beaker 4**	**Beaker 5**
Final mass in g	13.0	12.2	9.0	7.9	7.3
Initial mass in g	10.0	10.6	10.0	10.1	10.4

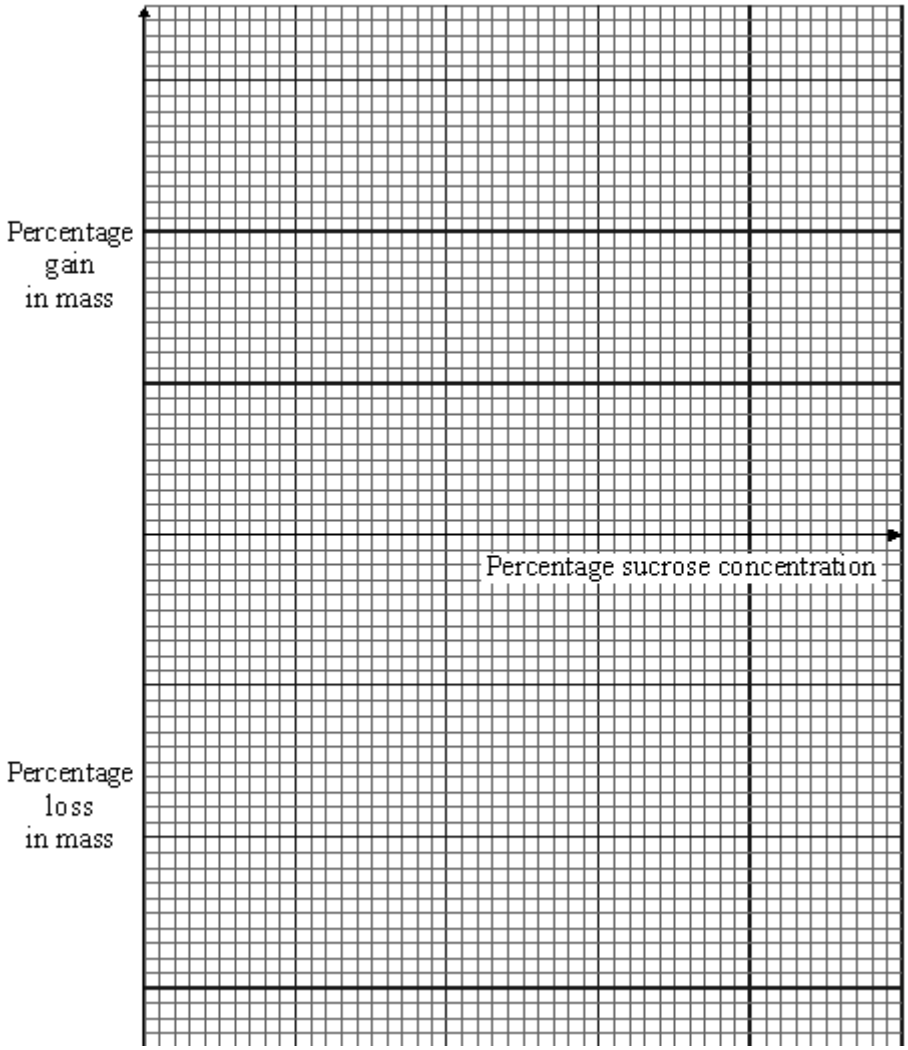
The students calculated the % gain or loss in mass of potato. Complete this table of results for Beakers 2, 4 and 5.

Beaker 1	**Beaker 2**	**Beaker 3**	**Beaker 4**	**Beaker 5**
13 – 10.0 = 3.0 $\frac{3.0}{10.0} \times 100\% = 30\%$		9.0 – 10.0 = –1.0 $\frac{-1.0}{10.0} \times 100\%$ = –10%		
Gain in mass = 30%		Loss in mass = 10%		

(3)

(b) (i) Draw a graph of % Gain or Loss in mass against sucrose concentration.

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(3)

(ii) Use the graph to find the concentration of potato cell sap.

Concentration of cell sap = _____ % sucrose solution

(1)

(iii) Explain in terms of osmosis how you chose this value.

_____

_____

_____

(2)

(Total 10 marks)

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