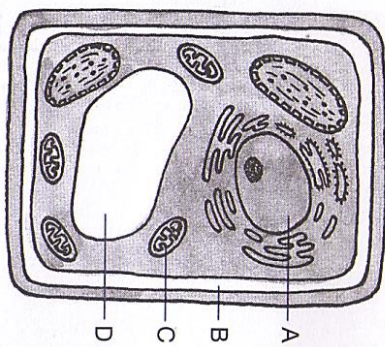


Study the diagram of a cell below and answer the question.



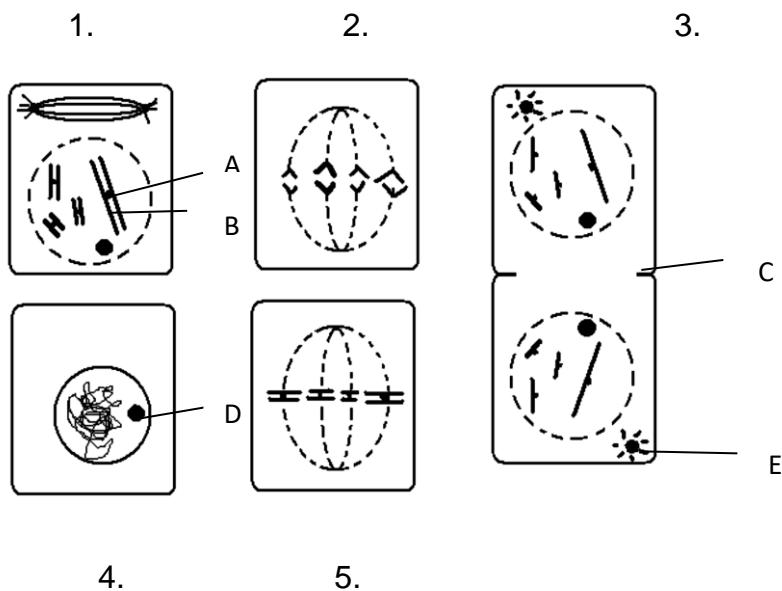
1.4.1 Provide labels for A,B, C and D. (4)

1.4.2 State TWO functions of D. (2)

1.4.3 State ONE function of C. (1)

[7]

Study the diagram and answer the questions that follow.



2.1.1 Label structures A, B, D and E. (4)

2.1.2 By making use of NUMBERS ONLY, arrange the phases into the correct sequence. (5)

2.1.3 Write down the number of chromosomes in a daughter cell at the end of the process shown above. (1)

2.1.4 State ONE difference between plant and animal cells with regard to the process taking place at C. (1)

2.1.5 State ONE reason why mitosis is a biologically important process. (1)

[12]

2.2 Study the diagram and answer the questions that follow.

A 'cell' containing a sugar solution placed in a beaker with water

A 'cell' containing water placed in a beaker with a sugar solution

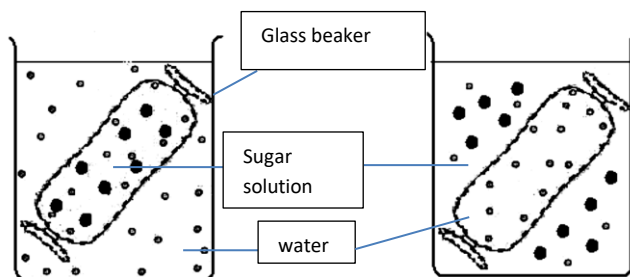


Figure 1

Figure 2

2.2.1 Which physiological process is represented by the diagram? (1)

2.2.2 What is meant by a differentially permeable membrane? (2)

2.2.3 Describe what happens in FIGURE 2 and explain your answer by indicating in which direction the water moves and why. (5)

[8]

2.3 The table below shows the nutritional value of a certain brand of breakfast cereal. Study the information before answering the questions below.

NUTRITIONAL COMPOSITION OF CEREAL

Ingredients	Nutritional Information (Values per 100 g)	
	Whole rolled oats, roasted wheat flakes, cane syrup, brown sugar, vegetable oil, sun-dried raisins	Energy
Protein		12,5 g
Carbohydrates		50 g
Fats		12,5g
Fibre		25 g
Cholesterol		0 g

2.3.1 Explain ONE advantage of this cereal having no cholesterol. (1)

2.3.2 The total energy value of a 100 g cereal is 2 000 kJ. The boy requires 5 500 kJ of energy per day. How many grams (g) of cereal does he need to eat in order to obtain this energy (assuming that he does not eat any other foods)? Show your working. (2)

2.3.3 Draw a pie chart to illustrate the relative proportions of protein, carbohydrate, fats and fibre of this 100 g of cereal. (6)

[9]