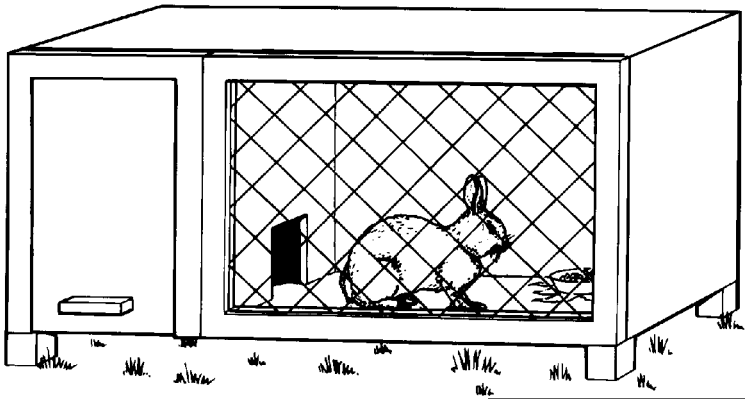
Cells/reproduction

7A & 7B

35 min
35 marks
Q1-L3, Q2-L4, Q3-L5, Q4-L5, Q5-L6, Q6-L6

1. Andrew put his rabbit's cage on the grass.



A week later, the grass under the cage had turned yellow.

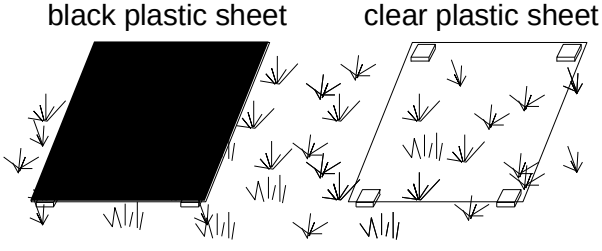
(a) Give **one** reason why the grass had turned yellow.

.....

.....

1 mark

(b) Andrew wanted to test why the grass had turned yellow. He put two sheets of plastic just above another patch of grass. One sheet was black and the other sheet was clear.



A week later, the grass under the black sheet was yellow. The grass under the clear sheet was green.

(i) Explain why he used the clear plastic sheet as well as the black sheet.

.....

.....

1 mark

(ii) Andrew left the black sheet there for several more weeks.
What happened to the grass under it?

.....

.....

1 mark

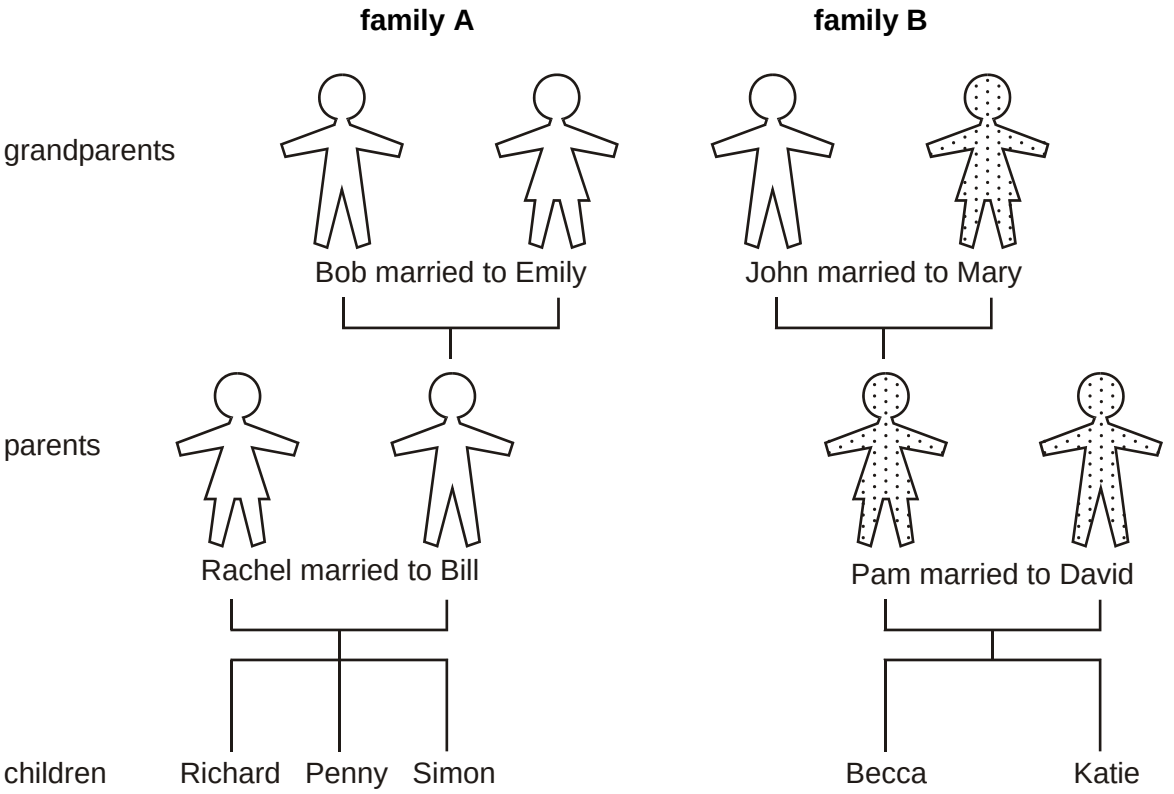
(c) Tick the boxes by **two** things which **both** rabbits **and** grass plants can do.

they eat	☐
they grow	☐
they move from place to place	☐
they reproduce	☐
they breathe in and out	☐

2 marks

Maximum 5 marks

2. The diagram shows two families. Some of the people in the diagram have freckles.



(a) (i) Which children are most likely to have freckles?
Tick the correct boxes.

Richard	Simon	Katie	Penny	Becca
☐	☐	☐	☐	☐

1 mark

(ii) How did you decide?

.....

.....

1 mark

(iii) Suggest why Bill does **not** have freckles.

.....

.....

1 mark

(b) (i) Which **two** cells pass on information from parents to their children?
Tick the **two** correct boxes.

bone cell	☐	cheek cell	☐
egg cell	☐	muscle cell	☐
red blood cell	☐	sperm cell	☐

1 mark

(ii) Which organ system produces these two cells?
Tick the correct box.

circulatory system	☐
digestive system	☐
reproductive system	☐
respiratory system	☐

1 mark

maximum 5 marks

3. The table shows the recommended daily intake of energy and some of the nutrients needed by different groups of people.

group of people	energy, in kJ	nutrients				
		protein, in g	carbohydrate, in g	fat, in g	minerals, in g	
					calcium	iron
male 15–18	11510	55.2	360	109	1000	11.3
female 15–18	8830	45.0	276	84	800	14.8
male 19–50	10600	55.5	331	100	700	8.7
female 19–50	8100	45.0	253	77	700	14.8
pregnant female	8900	81.0	278	84	700	14.8

(a) (i) Explain why two 16 year-old males of the same weight might need different amounts of energy.

.....

.....

1 mark

(ii) Which **two** types of nutrient provide most of the energy in our diet?

1. .....

2. .....

2 marks

(b) (i) Calculate the difference in the recommended daily intake of calcium for a 15 year-old male and a 30 year-old male.

..... mg

1 mark

(ii) Calcium is needed for healthy bones. Explain the difference in the amount of calcium needed each day by a 15 year-old male and a 30 year-old male.

.....

.....

1 mark

(c) Look at the table. Explain the difference in the amount of protein needed by a 25 year-old pregnant female and a 25 year-old female who is **not** pregnant.

.....

.....

1 mark

(d) Iron is needed to make blood.
Explain why a 15 year-old female might need more iron than a 15 year-old male.

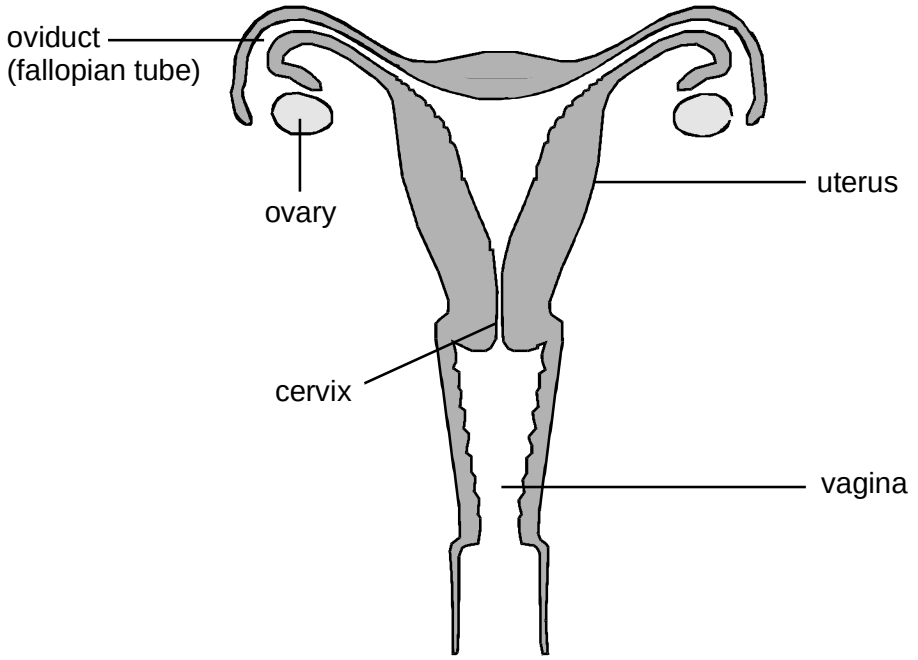
.....

.....

1 mark

Maximum 7 marks

4. The diagram shows a section through the female reproductive system.



(a) (i) What happens at fertilisation?

.....

.....

1 mark

(ii) In which labelled part of the female reproductive system does fertilisation normally take place?

.....

1 mark

(iii) In which labelled part of the female reproductive system does the foetus develop?

.....

1 mark

(b) Some women have blocked oviducts.
How do blocked oviducts prevent fertilisation taking place?

.....

.....

1 mark

(c) When a baby is born it is pushed out of the mother's body.
Describe what happens in the wall of the uterus to push the baby out.

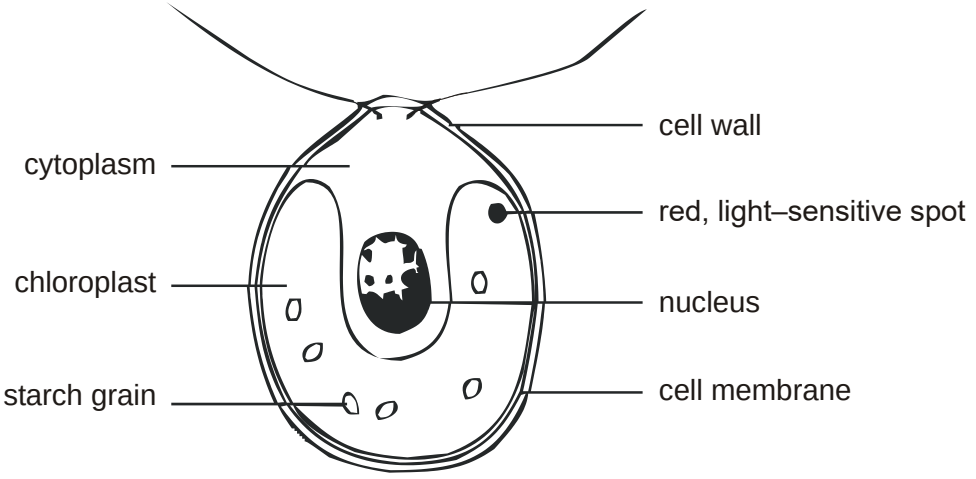
.....

.....

1 mark

Maximum 5 marks

5. The diagram below shows a single-cell organism called Chlamydomonas. It lives in pond water.



Use the information in the diagram to help you answer the questions below.

(a) Give **two** features of Chlamydomonas which show that it is more like a plant cell than an animal cell.

1. .....

2. .....

2 marks

(b) Chlamydomonas makes a sugar called glucose.

(i) Give the name of the process in which Chlamydomonas makes glucose.

.....

1 mark

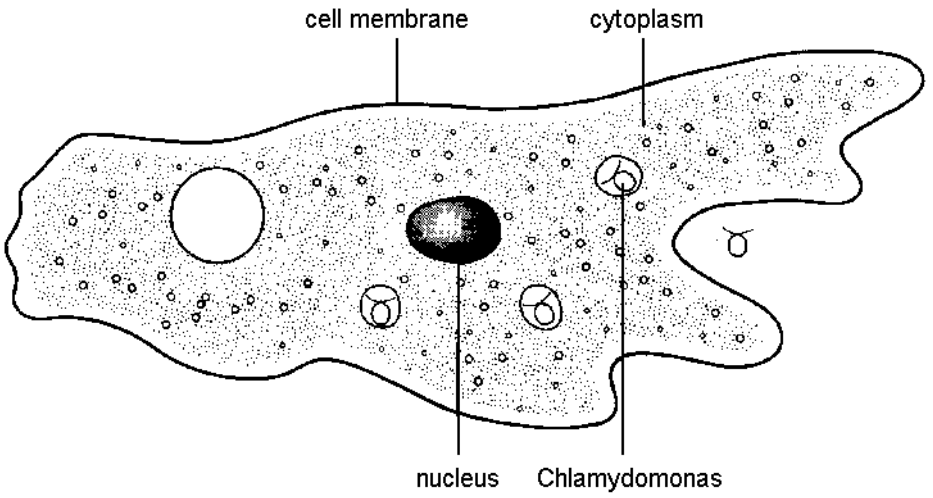
(ii) Chlamydomonas produces starch grains from glucose.

Suggest what will happen to the number of starch grains in the cell if Chlamydomonas is kept in the dark.

.....

1 mark

(c) The diagram below shows another single-cell organism called Amoeba.
It also lives in pond water. Amoeba traps a Chlamydomonas and digests it.



not to scale

Starch is a carbohydrate. Amoeba's digestive enzymes break down the starch in the Chlamydomonas.

Suggest what substance is produced from the starch and what it is used for.

.....

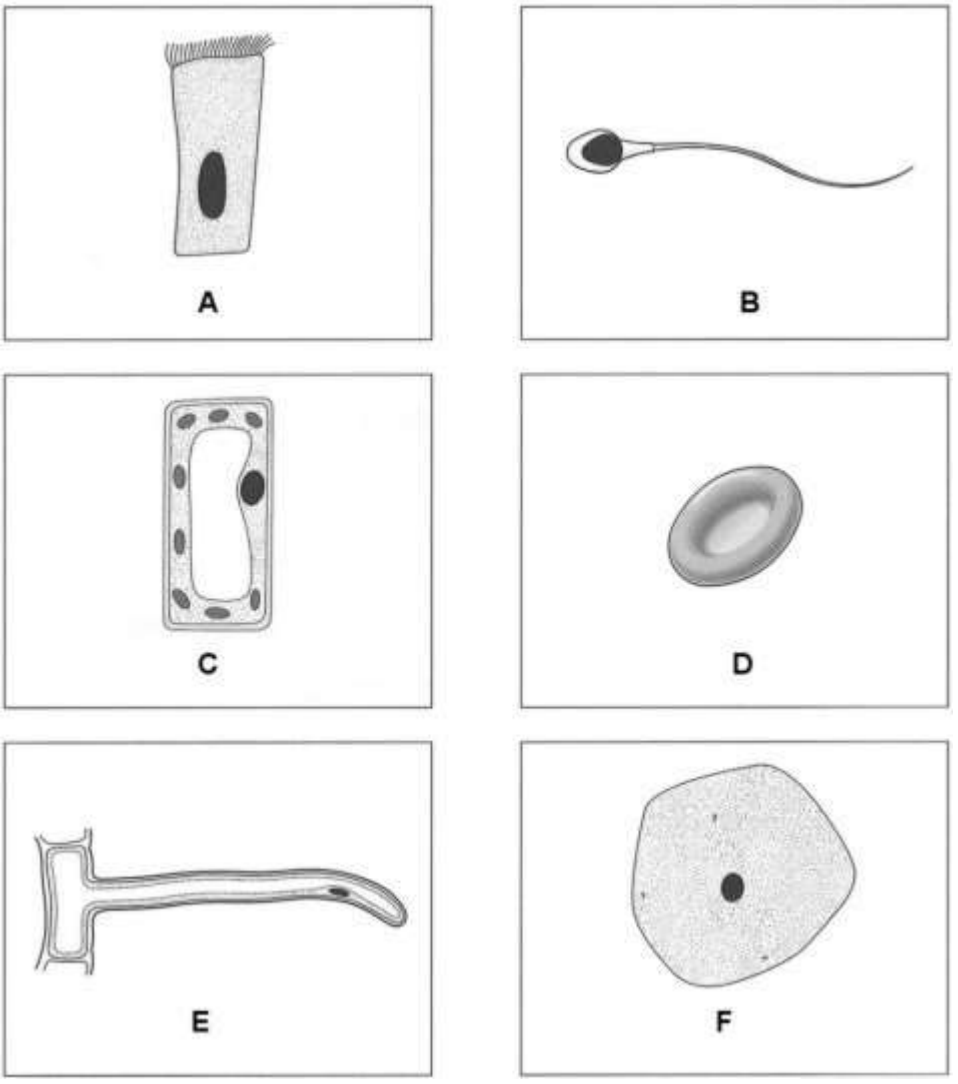
.....

.....

2 marks

Maximum 6 marks

6. The diagram below shows six cells.



(a) (i) Give the letters of the **two** plant cells in the diagrams.

..... and .....

1 mark

(ii) Which **one** of these plant cells contains chloroplasts?
Give the letter.

.....

1 mark

(iii) Give the function of chloroplasts.

.....

.....

1 mark

(b) (i) Give the letter of the ciliated cell.

.....

1 mark

(ii) In which part of the body are ciliated cells found?

.....

1 mark

(iii) What is the function of ciliated cells in this part of the body?

.....

.....

1 mark

(c) Give the letter of the cell which transfers genetic information from father to offspring.

.....

1 mark

maximum 7 marks