1 Plants can reproduce sexually or asexually.

Plants that reproduce sexually can be pollinated by insects or by wind.

(a) State three ways in which the structure of insect-pollinated flowers differs from the structure of wind-pollinated flowers.

(3)

1 .....

.....

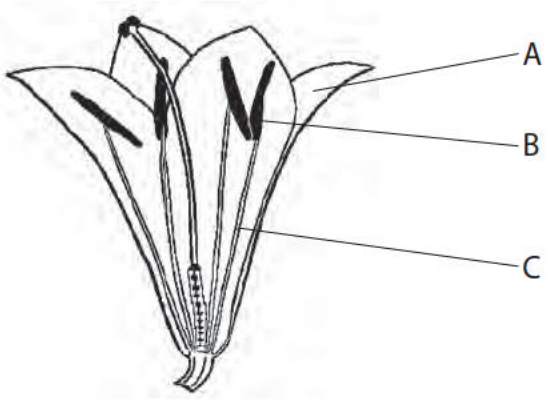
2 .....

.....

3 .....

.....

(b) The diagram shows a flower from a plant.



Name the structures labelled on the diagram.

(3)

A .....

B .....

C .....

(c) The flower in the diagram is insect-pollinated.

An insect carrying pollen lands on the flower.

Describe the events that lead to seed formation.

(5)

(Total for Question = 11 marks)

2 The diagram shows an insect pollinated flower called a lily.



(a) Describe the features of an insect pollinated flower that help it to attract insects.

(3)

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(b) Sexual reproduction in flowering plants and mammals involves the process of gamete formation by meiosis followed by fertilisation.

Use the words from the box to complete the table about sexual reproduction in flowering plants and mammals.

Each word can be used once, more than once or not at all.

anther	copulation	fallopian tube	ovary	ovule
placenta	penis	pollination	seed	testes
uterus	vagina	zygote		

(5)

	In flowering plants	**In mammals**
female gametes are made in the		
male gametes are made in the		
gametes are brought together by		
fertilisation takes place in the		
embryos develop in the		

(c) Cell division in an organism can take place by mitosis or by meiosis.
Give three ways in which mitosis differs from meiosis.

(3)

1 .....

.....

2 .....

.....

3 .....

.....

(d) Suggest why a flower grower may want his coloured flowers to reproduce asexually.

(2)

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(Total for Question = 13 marks)

3 (a) There are several different stages during the process of human reproduction. Some of these stages are shown in the box.

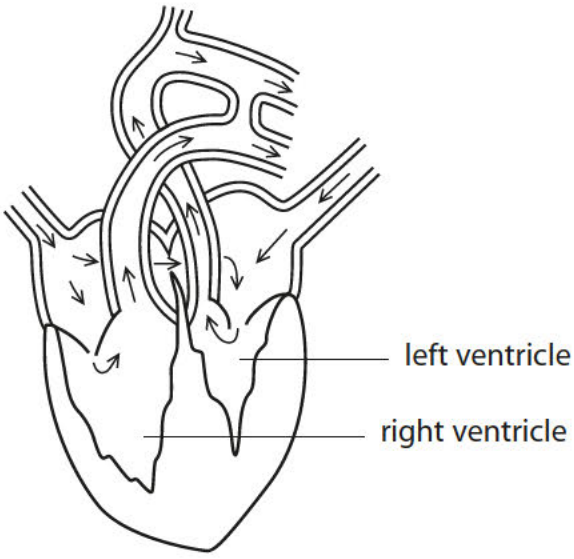
baby	embryo	fetus	gametes	zygote

Complete the table by writing the name of the stages in each empty box to show the correct order in which they occur.

(4)

Order	Name of stage
1	
2	
3	
4	
5	

(b) The diagram shows a section through the heart of a fetus. The arrows show the direction of blood flow.



Describe **two** differences, shown in the diagram, between the heart of a fetus and an adult heart.

(2)

1 .....

.....

2 .....

.....

(c) The sex chromosomes in the cells of a mother are XX. The sex chromosomes in the cells of a father are XY.

(i) Use this information to give the sex chromosomes in the cells of their male fetus.

(1)

.....

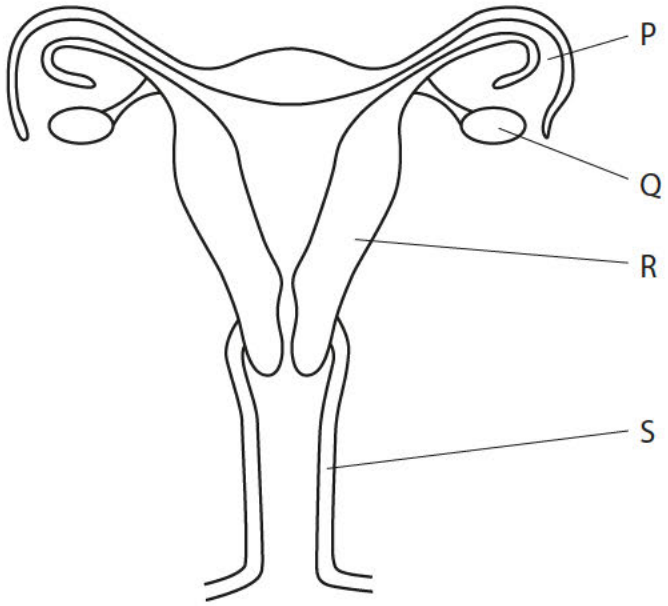
(ii) Give the number of chromosomes in a body cell of the male fetus.

(1)

.....

(Total for Question = 8 marks)

4 The diagram shows the structure of the female reproductive organs.



(a) Name the structures labelled in the diagram.

(4)

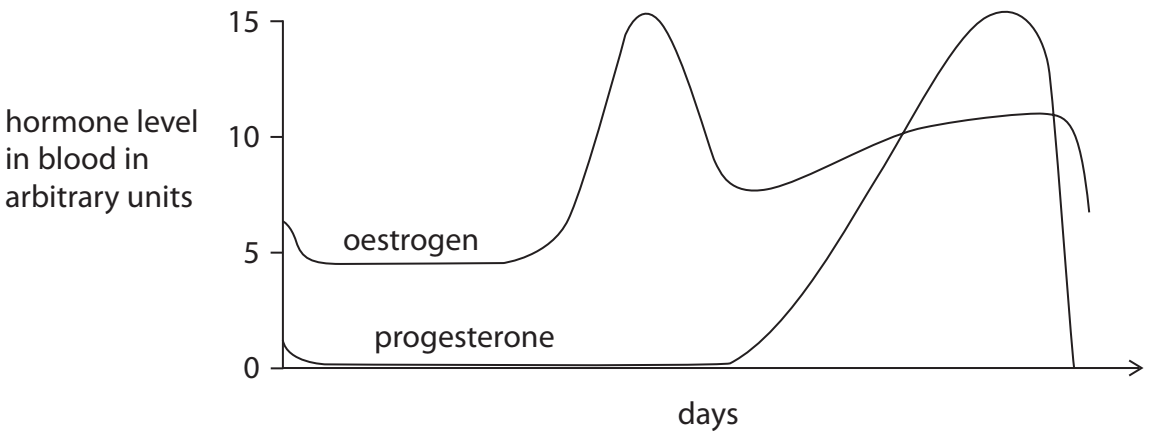
P .....

Q .....

R .....

S .....

(b) The graph shows changes in the hormones oestrogen and progesterone during a woman's menstrual cycle.



On the graph indicate using

(i) a letter O, the day when ovulation is most likely to occur.

(1)

(ii) a letter M, the day when menstruation is likely to start.

(1)

(iii) Describe the changes that take place in structure R during the menstrual cycle.

(3)

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(c) Some women only have sexual intercourse at certain times of their menstrual cycle in order to avoid pregnancy.

Explain why this may not be a reliable method of birth control.

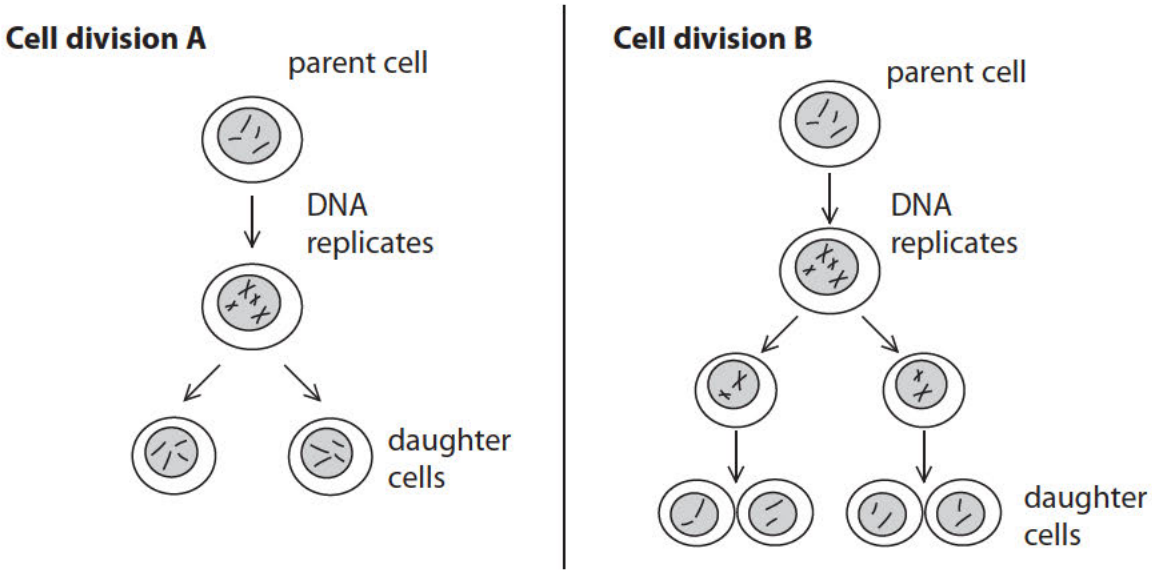
(2)

(d) Describe the role of oestrogen at puberty.

(3)

(Total for Question = 14 marks)

5 The diagram shows two types of cell division.



(a) Give the name of cell division A.

(1)

.....

(b) Using the information in the diagram, give two differences between cell division A and cell division B.

(2)

1 .....

.....

2 .....

.....

(c) Name a part of a flowering plant where cell division A occurs and a part where cell division B occurs.

(2)

A .....

B .....

(Total for Question = 5 marks)