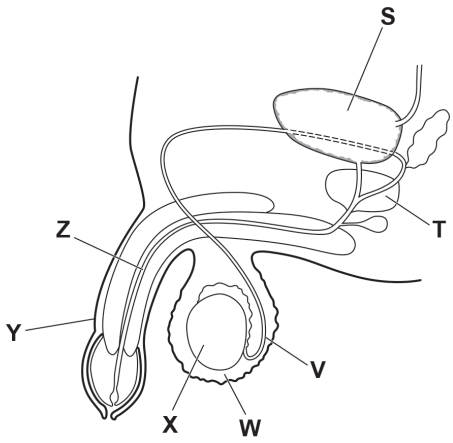
1 The diagram shows the human male reproductive system and part of the excretory system.



The table shows the letters, names and functions of parts from the diagram.

Complete the table using the diagram.

letter from diagram	name	function
V	.....	carries sperm away from the testis
.....	urethra	carries urine and sperm out of the body
Y	.....	deposits sperm into the vagina
.....	prostate gland	makes the fluid for the sperm to swim in
W	scrotum	....
X	testis	....

[6]

[Total: 6]

2 The table shows some of the events (**G** to **M**) that can occur after the sperm leaves the male reproductive system.

G	an embryo is formed
H	nuclei of the sperm and egg cell fuse
J	sperm enters the oviduct
K	sperm passes through the uterus
L	sperm is deposited into the vagina
M	sperm travels through the cervix

Write the letters of the events in the correct sequence, in the spaces provided.

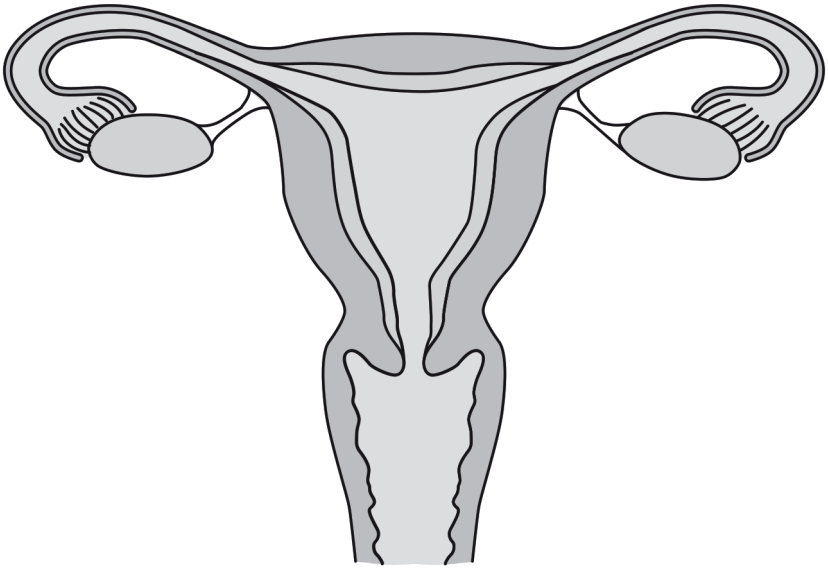
One has been done for you.

L					

[3]

[Total: 3]

3 The diagram shows the female reproductive system in humans.



State the names of **two** parts of the female reproductive system that sperm must pass through to reach the egg cell.

1 .....

2 ..... [2]

[Total: 2]

4 The birthweights of 75 rats were measured and recorded within different birthweight ranges.

The number of rats in each birthweight range is recorded in the table.

birthweight / g	number of rats
5.5 — 5.9	8
6.0 — 6.4	11
6.5 — 6.9	13
7.0 — 7.4	18
7.5 — 7.9	15
8.0 — 8.4	8
8.5 — 8.9	2

State the most common birthweight range in the table.

..... [1]

[Total: 1]

5 The birthweights of 75 rats were measured and recorded within different birthweight ranges.

The number of rats in each birthweight range is recorded in the table.

birthweight / g	number of rats
5.5 – 5.9	8
6.0 – 6.4	11
6.5 – 6.9	13
7.0 – 7.4	18
7.5 – 7.9	15
8.0 – 8.4	8
8.5 – 8.9	2

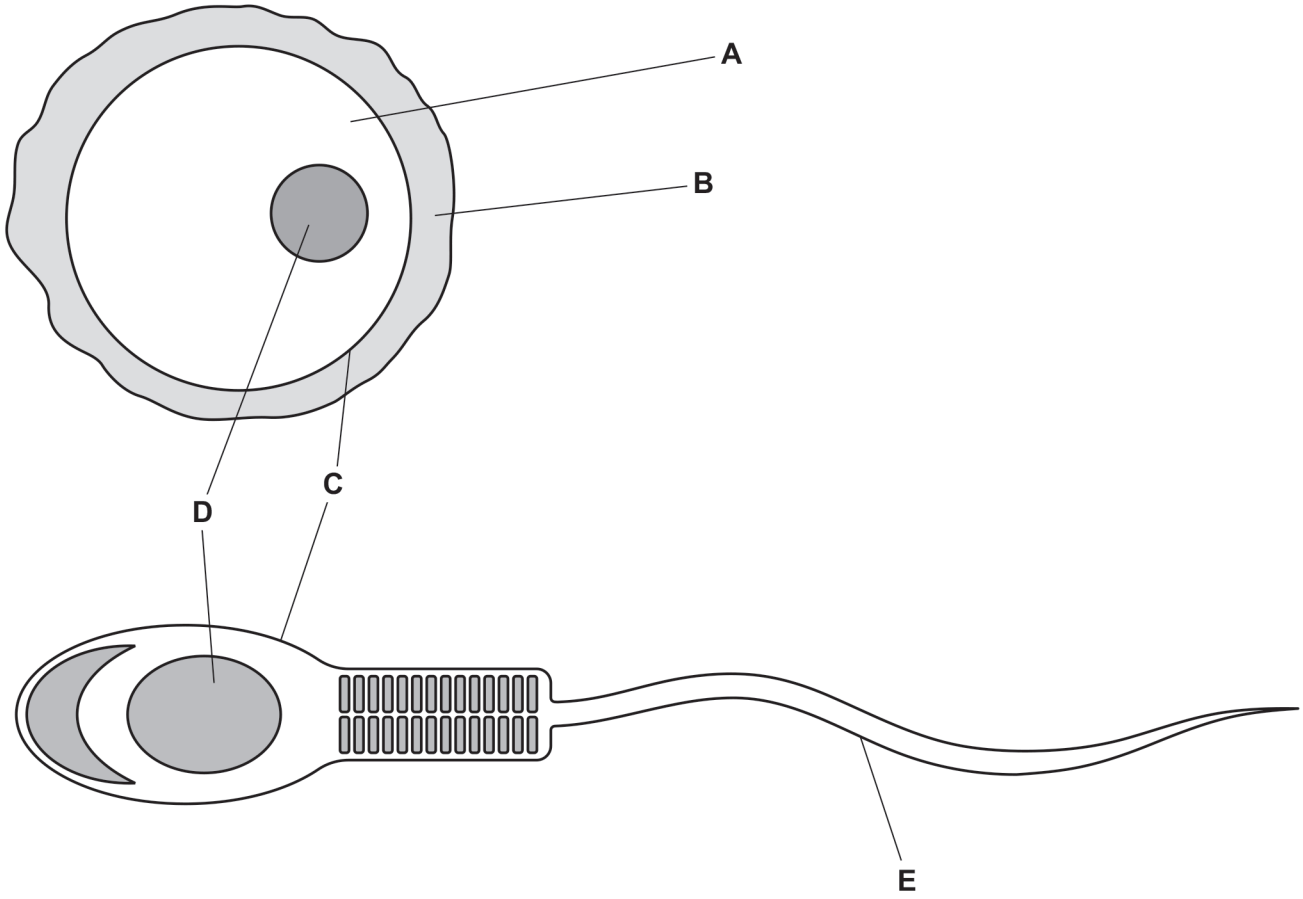
State the number of rats that are heavier than 6.9 g at birth in the table.

..... [1]

[Total: 1]

6 Gametes are involved in sexual reproduction.

The diagram shows the human gametes.



State the names of structures **A**, **B**, **C**, **D** and **E** shown in the diagram.

A .....

B .....

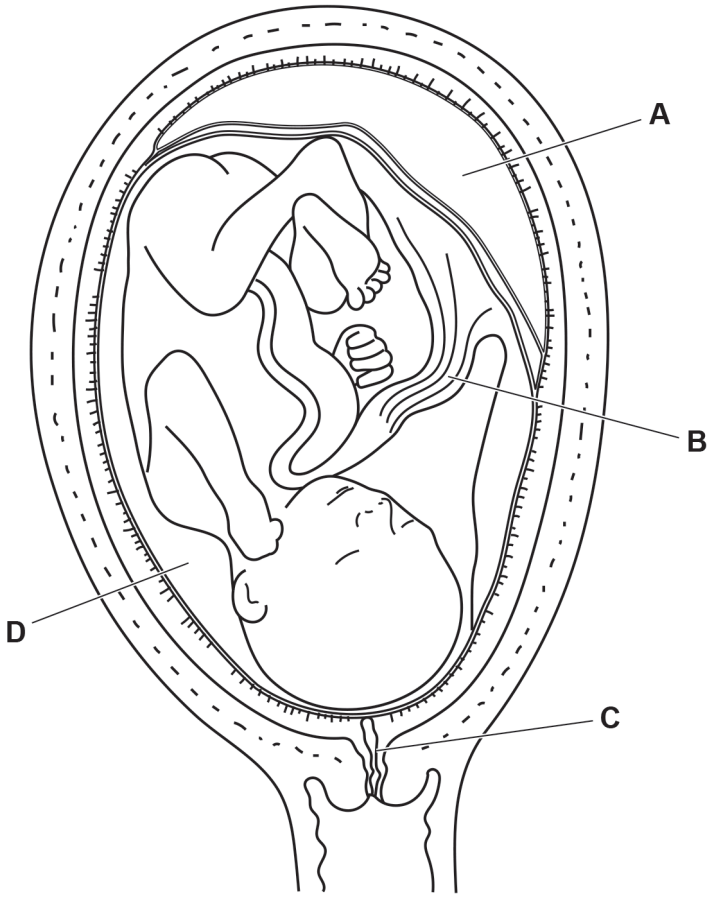
C .....

D .....

E ..... [5]

[Total: 5]

7 The diagram shows the uterus during pregnancy.

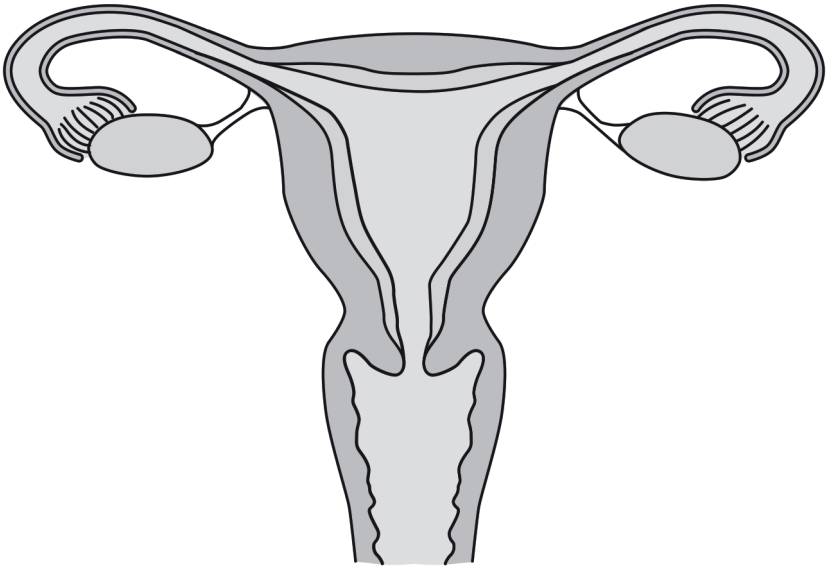


State the letter on the diagram that identifies the structure which performs each of these functions.

- exchange of substances between the fetus and the mother .....
- protects the fetus from mechanical shock .....
- transfers blood between the fetus and the placenta ..... [3]

[Total: 3]

8 The diagram shows the female reproductive system in humans.



On the diagram:

Circle a part that releases egg cells.

Draw a label line and the letter **W** to show where fertilisation occurs.

Draw a label line and the letter **X** to show where the fetus develops. [3]

[Total: 3]

9 Suggest a type of biological molecule that could be used as an energy store in an egg cell.

..... [1]

[Total: 1]

10 Outline the processes involved in labour and birth.

.....

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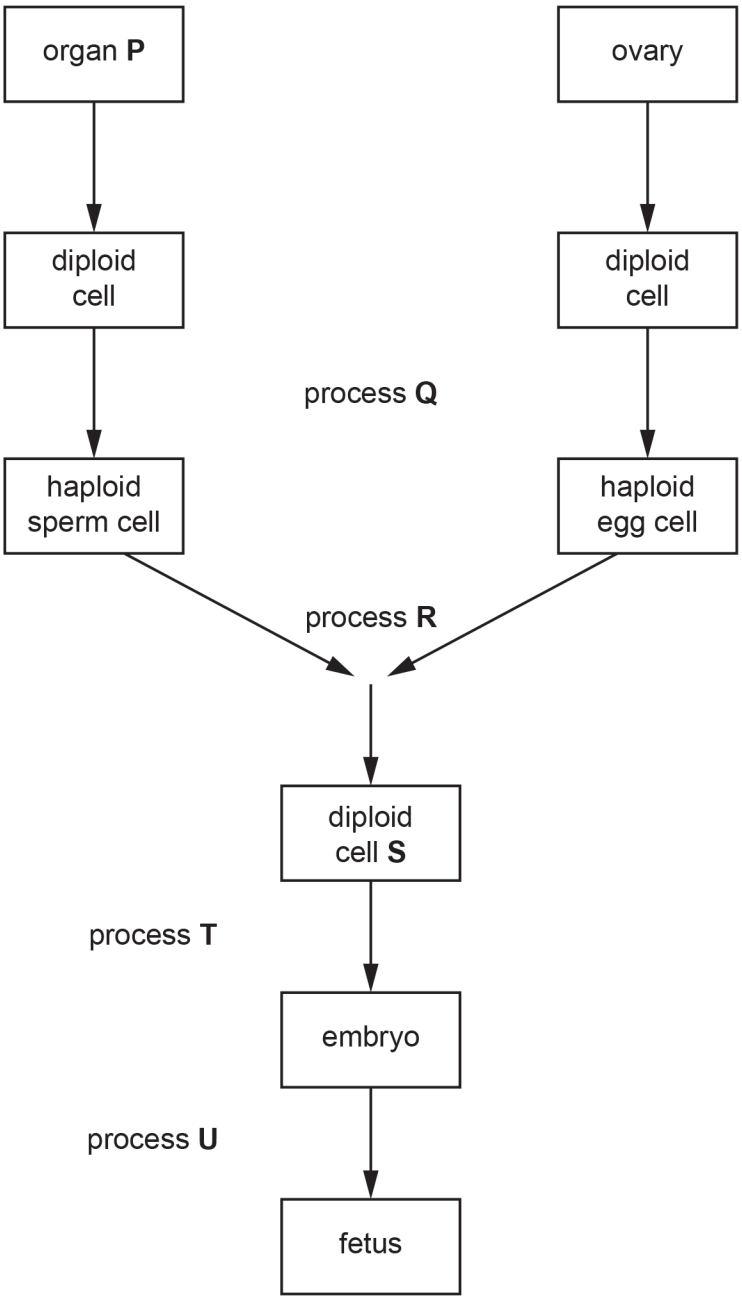
..... [4]

[Total: 4]

11 The flow diagram shows the events that occur to form a human fetus.



Complete the table by using the information in the flow diagram to identify the cell, the organ and the processes shown in the flow diagram.

cell, organ or process	name of the cell, organ or process
organ **P**	
cell **S**	
process **Q** produces haploid sperm and eggs	
process **R** produces diploid cell **S**	
process **T** occurs so that cell **S** can grow into an embryo	
process **U** occurs so that the embryo can gain oxygen and nutrients from the mothers blood	

[6]

[Total: 6]

12 Complete the sentences with the appropriate words.

The placenta provides a large surface area for the ..... of oxygen and carbon dioxide between maternal and fetal blood. Dissolved nutrients also pass across the placenta. Examples of dissolved nutrients are: ..... acids, ... and ..... .

Antibodies pass from the maternal blood giving natural ..... immunity to the baby for some infections that the mother has had or has been vaccinated against. Each different type of vaccine contains one or more ..... taken from the ..... that causes the disease. [7]

[Total: 7]

13 State the function of the jelly coat that surrounds egg cells.

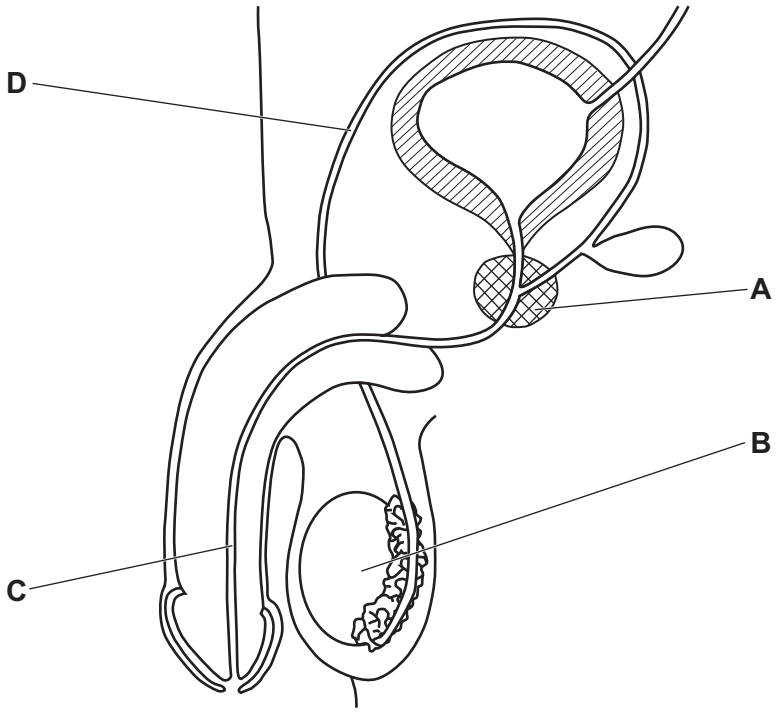
.....

.....

..... [1]

[Total: 1]

14 The diagram is of the male reproductive system in humans.



The boxes on the left show the letters in the diagram that identify parts of the male reproductive system.

The boxes on the right show the functions of some of the parts.

Draw **four** straight lines to match each letter to its correct function.

letter in diagram	function
	produces sperm
A	
	sac which contains the testes
B	
	secretes fluid for sperm to swim in
C	
	tube which carries the sperm to the urethra
D	
	tube which carries urine and sperm

[4]

[Total: 4]

15 Sperm are the male gametes in humans

State the name of the female gamete in humans.

..... [1]

[Total: 1]

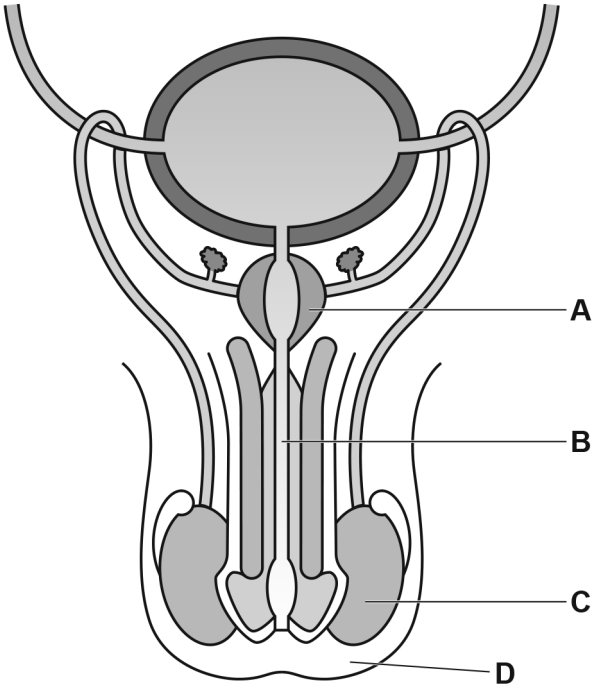
16 Sperm are the male gametes in humans.

State the usual site of fertilisation in humans.

..... [1]

[Total: 1]

17 The diagram is a front view of the male reproductive system in humans.



The boxes on the left show the letters identifying the parts in the diagram.

The boxes on the right show the functions of some of the parts of the male reproductive system.

Draw lines to link each letter to its function. Draw **four** lines.

letter from diagram	function
	gland that secretes fluid for sperm to swim in
A	
	produces sperm
B	
	sac that holds the testes
C	
	tube carrying semen and urine
D	
	tube carrying sperm to urethra

[4]

[Total: 4]

18 The table shows some of the events (**D** to **J**) that occur between fertilisation and birth.

The events are **not** in the correct order.

D	a baby is born
E	complexity of the fetus increases more than size
F	a zygote is formed
G	embryo implants into the wall of the uterus
H	size of the fetus increases more than complexity
J	the zygote divides by mitosis to produce two cells

Put the events into the correct sequence by ordering the letters.

One has been done for you.

	J				

[3]

[Total: 3]

19 Complete the sentences using the words and phrases from the list.

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

afterbirth **amniotic sac** **amniotic fluid** **cervix**

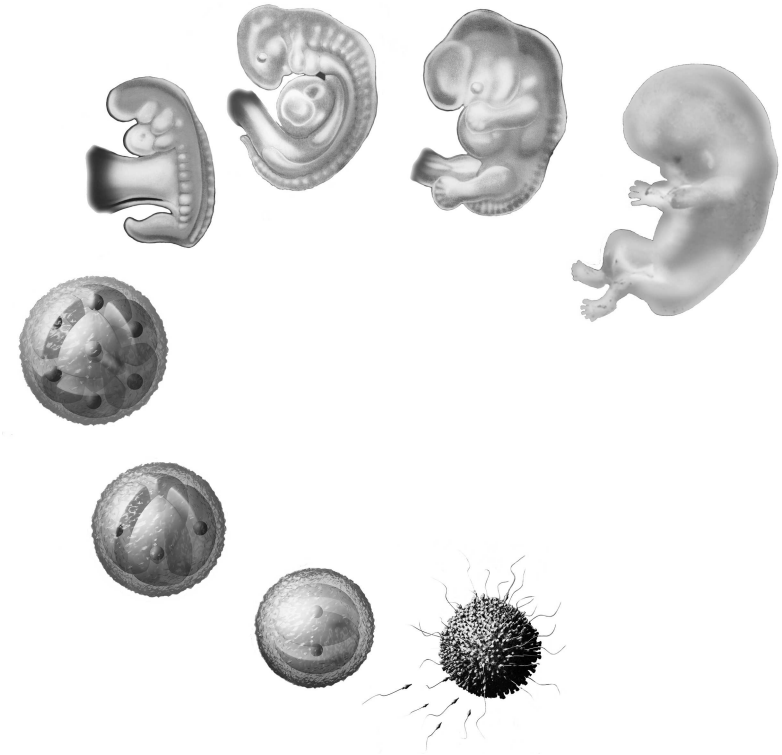
oviduct **penis** **umbilical cord** **uterus wall** **vagina**

Birth begins when the strong muscles of the ..... start to contract.

This causes the ..... to dilate. The ..... can break at this stage. The muscles start to push the baby out. The baby moves through the ..... . The ..... is tied and cut. Finally the ..... is delivered. [6]

[Total: 6]

20 The diagram shows the stages during the development of a human embryo and fetus.



Put a tick (✓) in the box that describes a human embryo.

a ball of cells	
a cell with energy stores and a jelly coating	
a cell with a flagellum	
is made of cells that have a cell wall	

[1]

[Total: 1]

21 Rubella and kwashiorkor are two diseases that affect children.

Rubella is a transmissible disease and kwashiorkor is a non-transmissible disease.

Explain why women should be vaccinated against rubella before they reach reproductive age.

.....

.....

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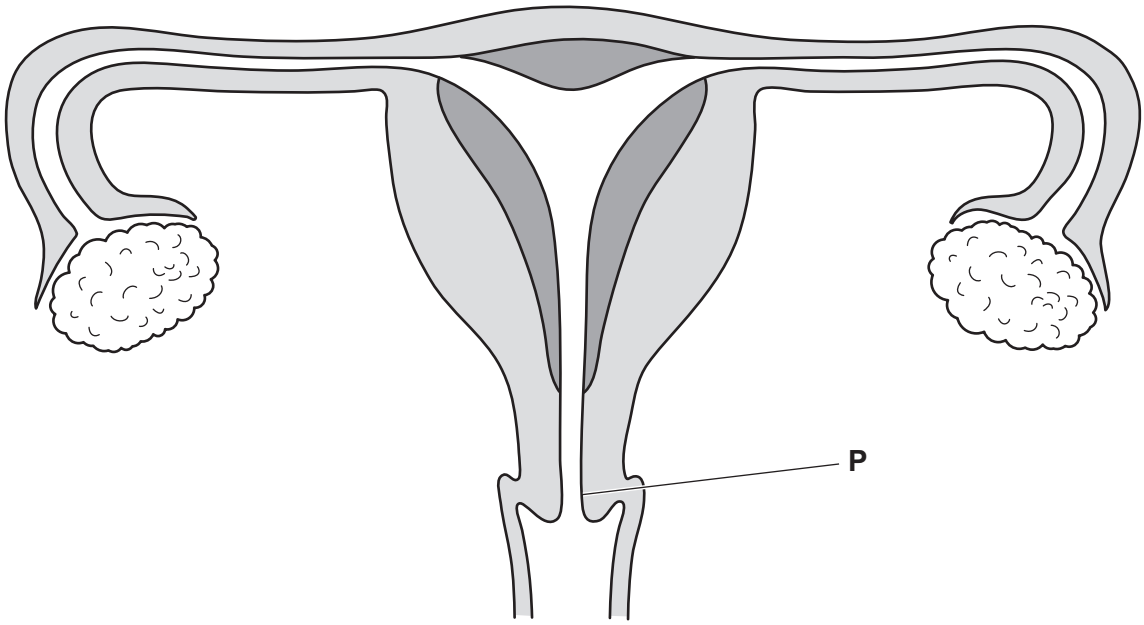
.....

.....

..... [4]

[Total: 4]

22 The diagram shows the female reproductive system.



Label the diagram using the letters listed to show the position of the organs that are identified by their functions.

The first one (**P**) has been completed for you.

P site of secretion of mucus

Q site of fertilisation

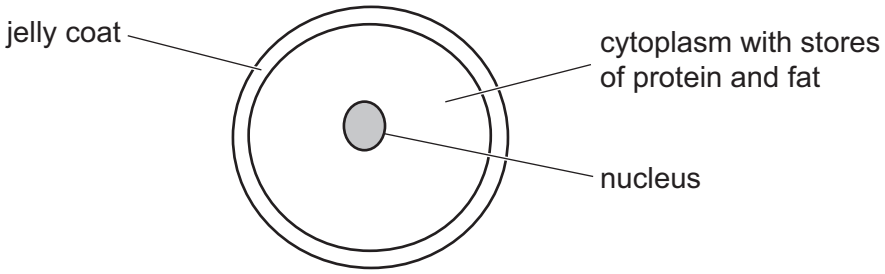
R site of implantation

S site of oestrogen secretion

T site where sperm are deposited during sexual intercourse [4]

[Total: 4]

23 The diagram shows a section through an egg cell at the time of ovulation.



Explain why the egg cell contains stores of protein and fat.

.....

.....

.....

.....

.....

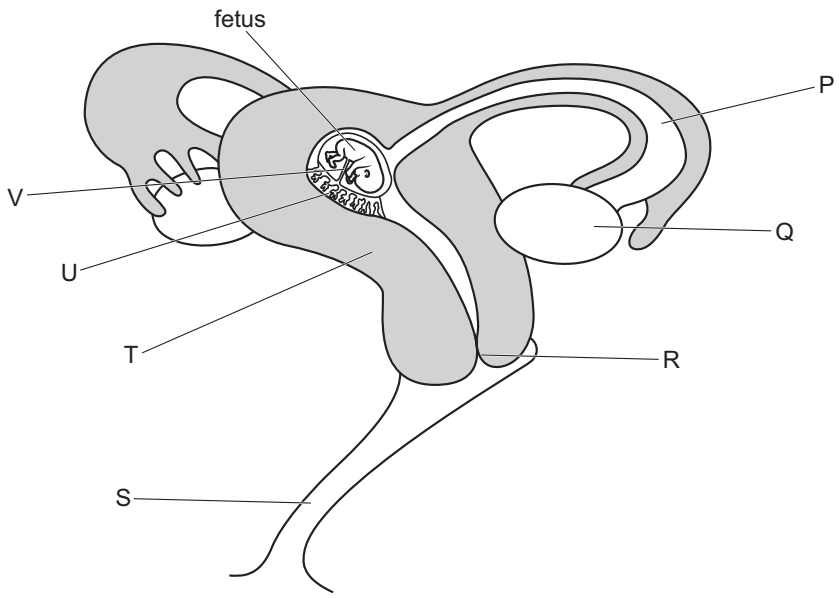
.....

..... [3]

[Total: 3]

24 During pregnancy menstruation does not occur.

The diagram shows some of the organs of a pregnant woman, viewed from the side.



Describe what happens between ovulation and the formation of a fetus.

Use the letters in the diagram to support your answer.

.....

.....

.....

.....

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.....

.....

.....

.....

.....

..... [6]

[Total: 6]

25 Fertilisation results in the formation of a zygote.

Describe how an embryo is formed from a zygote.

.....

.....

.....

.....

.....

.....

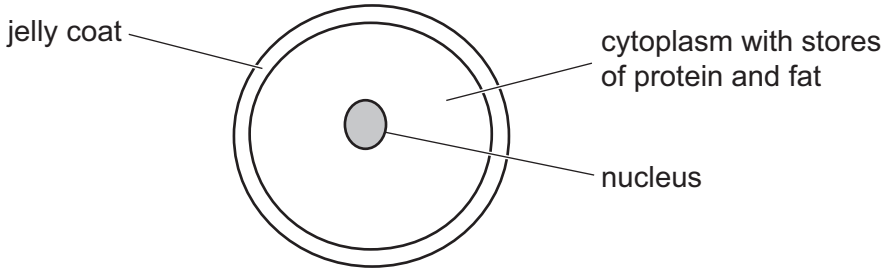
.....

.....

..... [4]

[Total: 4]

26 The diagram shows a section through an egg cell at the time of ovulation.



Describe the function of the jelly coat.

.....

.....

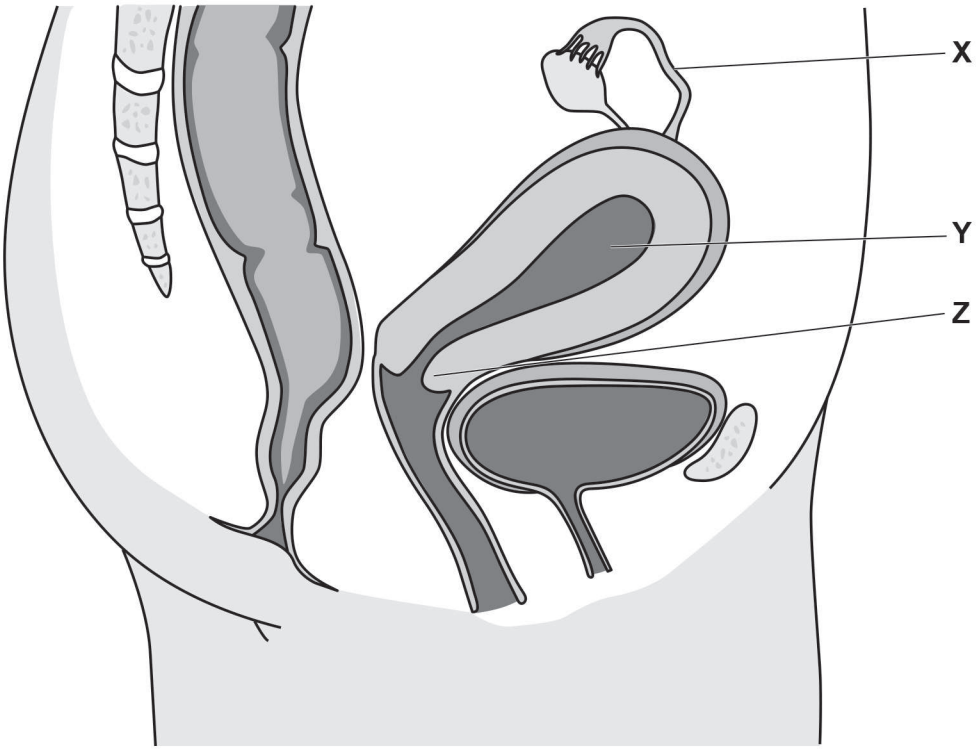
.....

.....

..... [2]

[Total: 2]

27 The diagram shows part of the female human reproductive system.



State the names of the structures labelled **X**, **Y** and **Z** on the diagram.

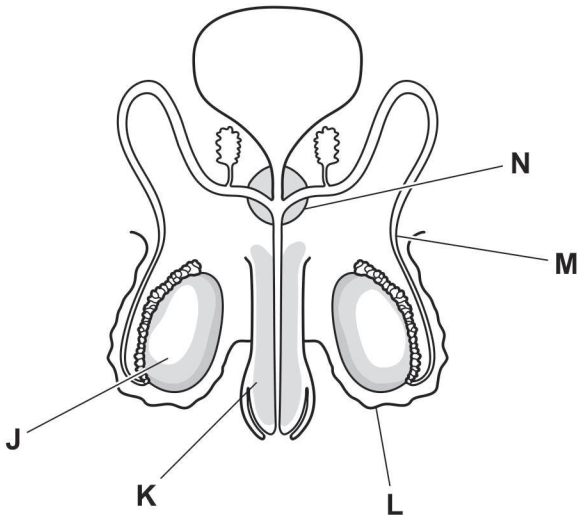
X .....

Y .....

Z ..... [3]

[Total: 3]

28 The diagram is of the human male reproductive system.



The boxes on the left show the letters from the diagram.

The boxes in the middle show the names of the parts shown in the diagram.

The boxes on the right show the function of each part.

Draw **one** line to link each letter from the diagram to its correct name.

Draw **one** line to link each name to its correct function.

Draw a total of **ten** lines.

letter from diagram	name	function
J	penis	carries sperm cells away from the testis
K	prostate gland	delivers sperm into the vagina

L	scrotum	holds the testes and keeps them cool
M	sperm duct	makes the fluid that sperm cells swim in
N	testis	where sperm are made

[5]

[Total: 5]

29 Pregnant women are advised not to smoke as the harmful substances in tobacco can be transferred from the woman to her fetus.

Describe how the harmful substances are transferred from the mother to the fetus.

.....

.....

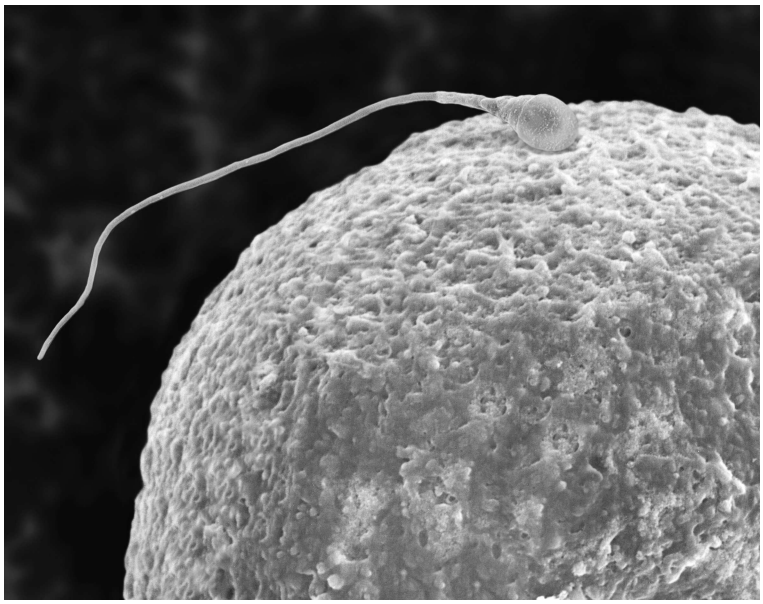
.....

.....

..... [2]

[Total: 2]

30 The photomicrograph is of a sperm cell reaching an egg cell.



State where, in the female reproductive system, the event shown in the photomicrograph occurs.

..... [1]

[Total: 1]

31 Milk is produced by mammals.

Explain why breast-feeding mothers are advised to drink plenty of water and avoid excessive alcohol consumption.

.....

.....

.....

.....

..... [2]

[Total: 2]

32 Milk is produced by mammals.

Explain the advantages to newborn mammals of breast milk.

.....

.....

.....

.....

.....

.....

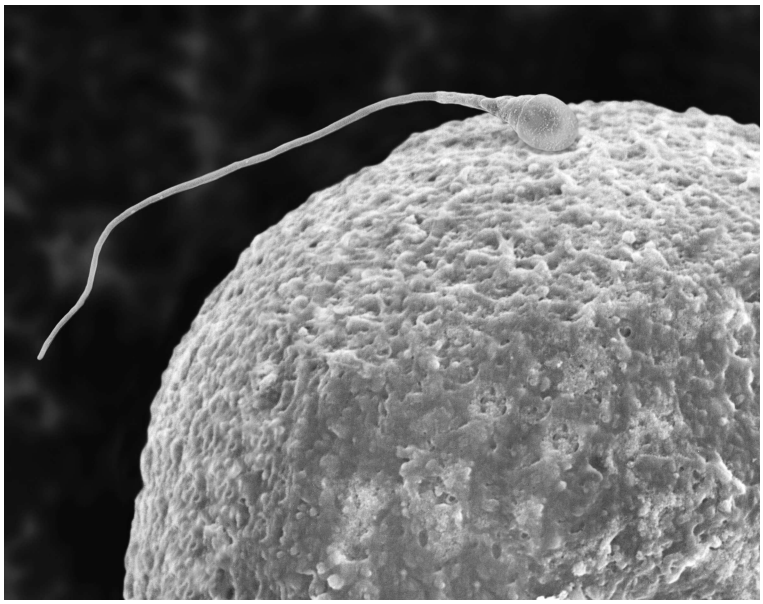
.....

.....

..... [4]

[Total: 4]

33 The photomicrograph is of a sperm cell reaching an egg cell.



Describe what happens from the event shown in the photomicrograph until an embryo is formed.

.....

.....

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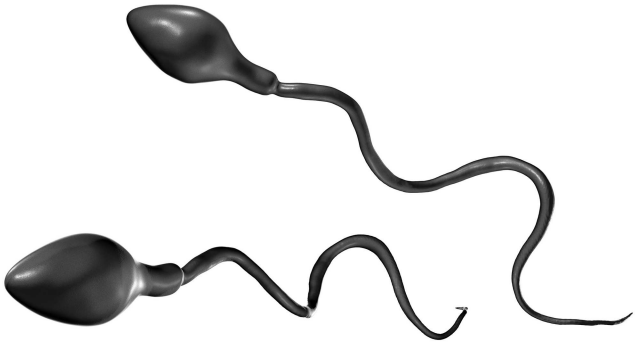
..... [4]

[Total: 4]

34 The diagram shows an image of two sperm cells.



State **two** adaptive features of sperm.

1 .....

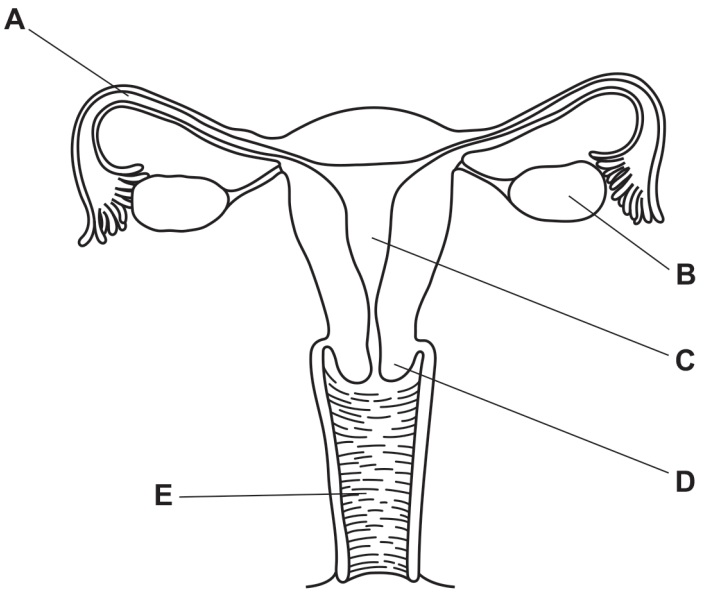
.....

2 .....

..... [2]

[Total: 2]

35 The diagram shows the human female reproductive system.



Identify the letter from the diagram which represents:

• the vagina .....

• the uterus .....

• where ovulation occurs .....

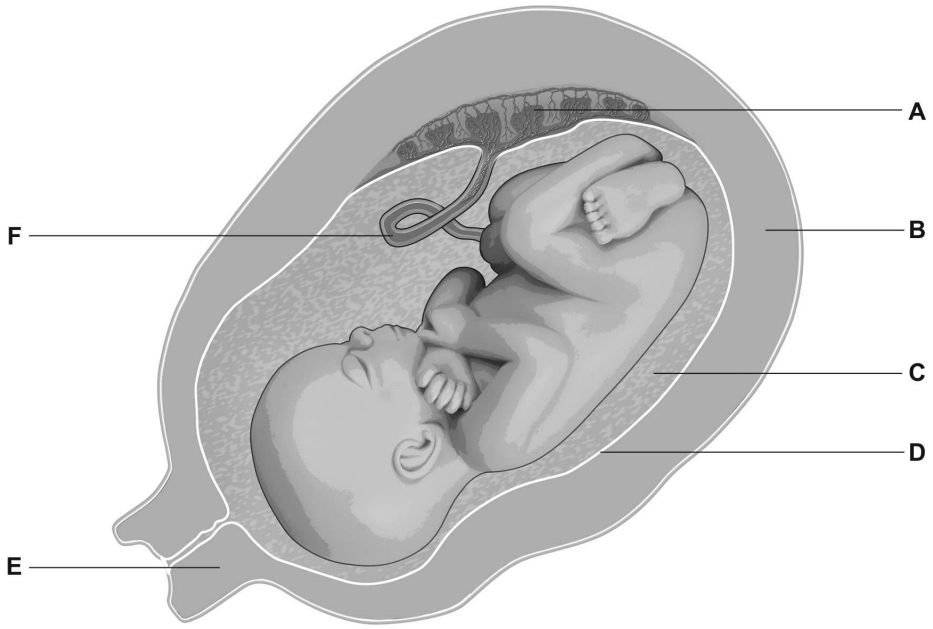
• where the fetus grows .....

• where fertilisation occurs. .....

Each letter may be used once, more than once or not at all. [5]

[Total: 5]

36 The diagram shows a fetus during development.



Complete the table by stating:

- the missing letters from the diagram
- the missing name of the structure
- **one** function for structures **C**, **A** and **F** during pregnancy or birth.

letter on diagram	name of the structure	**one** function
C	amniotic fluid	
		dilates during birth
A	placenta	
	umbilical cord	

F		
	uterus wall	contracts during birth

[6]

[Total: 6]

37 Describe **one** effect on the fetus of the mother smoking tobacco during pregnancy.

.....

.....

..... [1]

[Total: 1]

38 The table shows the average diameters of egg cells from different mammals.

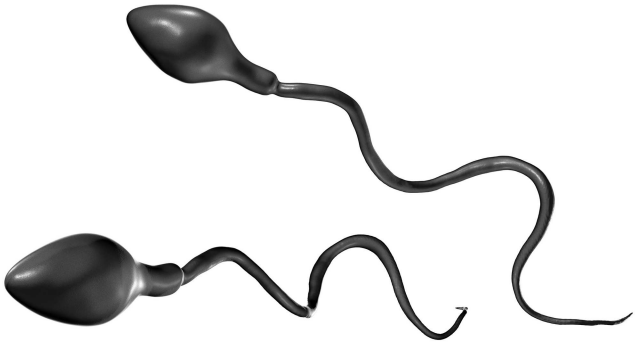
mammal	average diameter of egg cell / μm
goat	122
horse	168
human	165
mouse	90
rabbit	165
sheep	125

State the name of the mammal with the egg cell that has the smallest average diameter in the table.

..... [1]

[Total: 1]

39 The photograph shows an image of two sperm cells.



Describe the process of fertilisation.

.....

.....

.....

..... [2]

[Total: 2]

40 Egg cells are the female gametes and have special adaptive features.

Complete the sentences using words from the list.

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

birth **cellulose** **cytoplasm** **energy**

fertilisation **jelly** **labour**

Egg cells have ..... stores so that they can survive for several

days in the female reproductive system after ovulation.

They also have a ..... coating which changes after

..... to prevent more sperm from entering the egg. [3]

[Total: 3]