



Exam VSBO PBL

2026

period 1

Wednesday May 20

7.30 - 9.30 a.m.

Biology

Candidate name _____ Candidate number _____

This exam comes with an appendix.

Answer all questions in this assignment booklet.

This exam assumes that organisms are healthy and in normal situations.

This exam consists of 45 questions.

You can score a maximum of 68 points for this exam.

Before each question number it is stated how many points can be scored with a correct answer.

Multiple-choice questions

- Circle the correct answer (example 1).
- Indicate corrections according to example 2 or 3.

- (1) A
 ⓑ
 C
 D
- (2) A
 ⓧ
 ⓐ
 D
- (3) B A
 ⓧ
 ⓧ
 D

Loeka the parrot

- 1p 1 The parrot in the picture to the right is named Loeka, and she is always alone in her cage. Because she is always alone, she can NOT carry out a specific life characteristic.

→ Which life characteristic is that?

.....



- 1p 2 The vet examines Loeka's cells under the microscope.

→ Which are the two parts that **both** appear in Loeka's cells?

- A chlorophyll and nucleus
- B cytoplasm and nucleus
- C cell wall and vacuole
- D cell membrane and cell wall



- 2p **3** A fireworks show is taking place close in the neighborhood of the house in which Loeka lives. The noise causes Loeka to panic and she flies into the mesh of the cage. The vet finds that Loeka has broken a few bones of her skeleton.

→ List two functions of the skeleton.

1).

2).

- 2p **4** Loeka is a living being, and her body is therefore also made up of several types of tissue, for example bone tissue.

→ Write down three other types of tissue found in Loeka's body.

1).

2).

3).

Determination

- 2p 5 On the card below you find information about an animal in Sharnice's yard.

The animal has bald, leather-like skin and an internal skeleton.
The animal has 4 legs and it has dark stripes on its side.

The name of the animal is not stated. The appendix contains a search card.
On the search card there are step numbers, such as: **1a**, **1b** and **2a**.

→ What is the name of the animal?

Write down the step numbers in the correct order and write down the name of the animal. Do this below and use the search card.

Numbers in order: → → → → →

Name:

- 2p 6 The green organisms in the picture to the right are bacteria that float around in blood.

The table below contains statements about these bacteria.



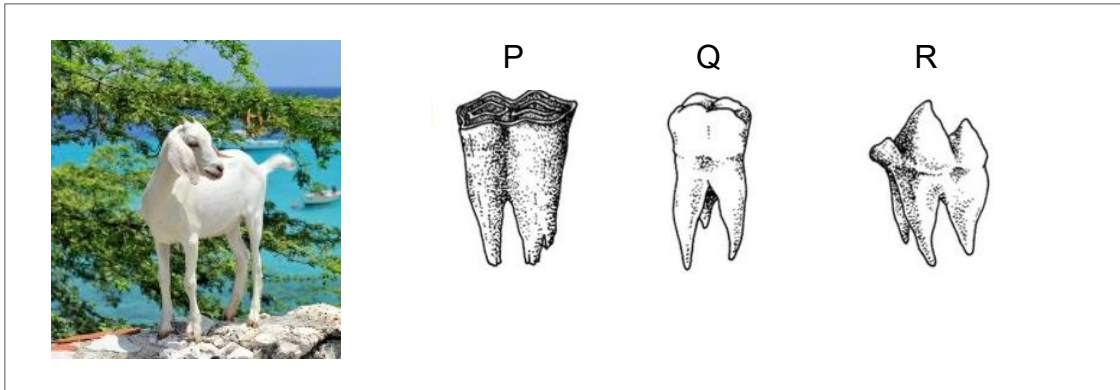
→ Write an X-mark next to each statement to indicate if it is true or false.

statement	true	false
Bacteria have multiple cells.		
Bacteria have no tissue.		
Bacteria have organs.		

Teeth

Use the information below for questions 6 and 7.

A goat is a plant eater, so the animal has teeth to break down pieces of grass and leaves. Pictures P, Q and R below show three types of teeth.



1p 7 → The teeth of a goat are called ...

- A cutting teeth
- B pleat molars
- C knob molars

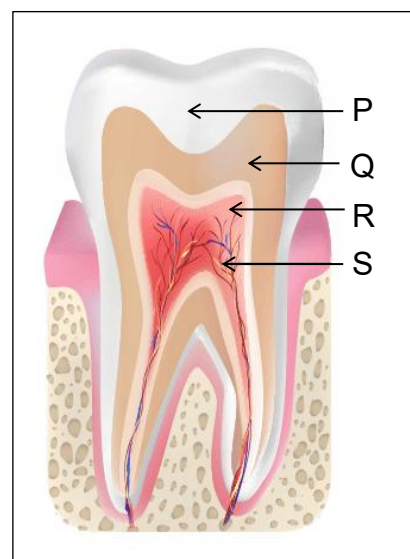
1p 8 → Which form does the molar of a goat have?
The molar of a goat has a form such as the molar with ...

- A letter P.
- B letter Q.
- C letter R.

1p 9 A cross-section of a molar is shown to the right.

→ Which letter points to the dentin?

- A letter P
- B letter Q
- C letter R
- D letter S



Plants

- 1p 10 Four different types of plants are shown below.
A characteristic of the plant is mentioned under each picture.

faja lobi	beyisima	kibrahacha	grass
			
nectar in the flowers	nice-smelling flower	striking yellow flowers	sticky pollen

→ Which plant does NOT need insects to reproduce?

- A the faja lobi
- B the beyisima
- C the kibrahacha
- D grass

- 1p 11 The picture to the right shows a ring-barking (girdling). The ring-barking ensures that transport of water in a certain direction does NOT take place.

→ In which direction is that?

- A in the direction going up, toward the leaves.
- B in the direction going down, toward the roots.
- C in both directions, going up and going down.

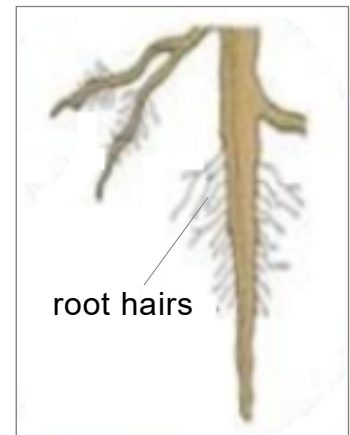


- 1p 12 In the picture to the right, the root hairs are clearly shown. Root hairs of a plant have a special function.

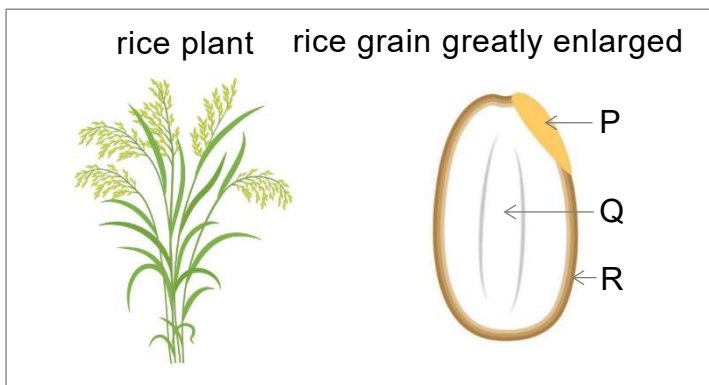
→ Which function is that?

The function of absorption of water and ...

- A salts.
- B glucose.
- C oxygen.
- D carbon dioxide.



- 2p 13 Teacher Shanice's Biology room has a board with the pictures below.



A rice plant and next to it, a rice grain greatly enlarged.

The drawing of the rice grain shows the three parts of a rice grain with the letters P, Q and R.

→ Write the names of the parts P, Q and R here below.

P is called

Q is called

R is called

The iguana

- 1p 14 The iguana is an animal that lives in bushes and trees. The animal eats leaves and fruit.

→ Is the iguana a consumer, a producer or a reducer?

The iguana is a ...

- A consumer.
- B producer.
- C reducer.



- 2p 15 The iguana in the picture has been lying dead on the ground for two days already.

Below are two sentences about what will further take place in nature with the dead body of the iguana.

There are words to choose from in each sentence.



→ Underline the correct choice word in each sentence.

Sentence 1).

The dead remains of the iguana are broken down by bacteria and fungi.

For this reason, bacteria and fungi are called

producers.

consumers.

reducers.

Sentence 2).

The broken down remains of the iguana will then again serve as

nutrients

waste

fuel

for plants.

Nutrition

2p 16 Three tasks of the stomach are mentioned in the table below.

→ With what does the stomach perform the tasks that are mentioned in the table?

Choose from the bold-printed words below.

stomach acid, stomach muscles, stomach lining, stomach juices, gastric mucosa

Stomach task	Is performed by the stomach with ...
1). Kneading and mixing food .	
2). Digesting nutrients .	
3). Killing bacteria	

2p 17 Below are three statements about minerals that the body needs. The names of minerals have been left out for (1), (2) and (3) in the statements.

The mineral that ensures strong teeth and molars is ... (1)

The mineral that ensures a strong skeleton is ... (2)

The mineral that ensures the production of red blood cells is ... (3)

→ Write down the correct mineral for (1), (2) and (3).

Choose from: ***copper, calcium, iron, tin and fluoride***.

1).

2).

3).

- 2p 18 Bile is produced in the liver and is transported to another organ.
Below is a statement about the transport of bile. The statement contains two groups of words to choose from.

→ Underline the correct choice word in each group, so that the statement is a true statement.

Bile is transported via a	<i>blood vessel</i>	to the	<i>mouth.</i>
	<i>duct</i>		<i>stomach.</i>
	<i>lymphatic vessel</i>		<i>duodenum.</i>

- 2p 19 Below is the start of a piece of text from Fabi for her report about the functioning of the digestive system.

*The digestion of a piece of patty begins in the oral cavity.
When chewing in the oral cavity, the food is mixed with ... (1)
After this, the food ends up in the ... (2) ... via the esophagus. Here
proteins are ... (3)
After this, these substances pass through the wall of the small
intestine, ending up in the blood.*

She still has to fill in the correct three words in spaces (1), (2) and (3).

→ Write down the correct three words for (1), (2), (3).

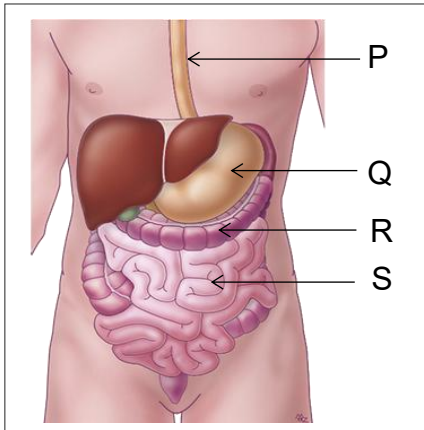
1).

2).

3).

2p 20 The picture below shows a part of the digestive system.

→ Write down the names of parts P, Q, R and S.



letter	name
P	
Q	
R	
S	

1p 21 Tamara has the flu. The doctor advises Tamara's mother to have Tamara eat a lot of fruit and vegetables, because they contain vitamins.

→ What are vitamins used for in the body?

Vitamins are used as ...

- A fuel
- B reserve substance
- C protective substance



- 2p **22** Sayen is a newborn baby. He still only receives milk as food.
This is possible because from milk he gets nutrients that serve as building blocks, fuel, protective substances and reserve substances.



Three nutrients in milk are mentioned in the table below.

→ Which function do these three nutrients have for baby Sayen's body? Write X-marks to indicate this in the table. You may write more than 1 X-mark in the same row.

nutrients	building blocks	fuel
proteins		
fats		
minerals		

- 1p **23** Eating whole-grain bread is healthy. In addition to minerals and vitamins, it also contains dietary fiber. Dietary fiber has a positive effect on the health of the body.



→ Which positive effect is that?

Dietary fiber stimulates the ...

- A** heartbeat
- B** production of urine
- C** blood circulation
- D** intestinal peristalsis

- 1p 24 Rodrick likes soda. He drinks too much of it. There is a whole lot of sugar in soda. This has certain consequences for Rodrick's body.



→ What does the body do with the excess sugar in the body?

The body ...

- A removes the sugar from the body.
- B stores the sugar as fat in the body.
- C uses the sugar as fiber in the body.
- D uses the sugar as protective substance in the body.

- 2p 25 Chips are a fat-rich food. Dwain often eats too many chips, while he does little exercise. Dwain must be careful. Below, two sentences state why.



Sentence 1).

A lot of fat-rich food results in increased ... (1)

Sentence 2).

A lot of fat-rich food can lead to a blockage of ... (2)

→ Write down the two correct words for (1), (2).

Choose from the following list of words:

cholesterol, the bile duct, the coronary artery, the nerves and red blood cells.

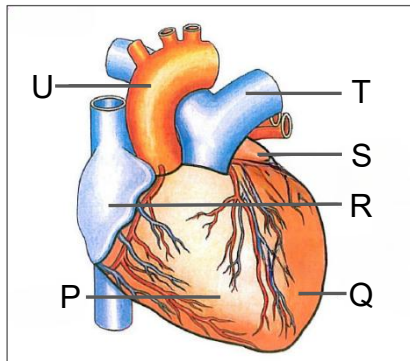
1).

2).

Blood circulation

- 2p 26 In the picture below, six parts of the heart are indicated with the letters P, Q, R, S, T and U.

→ Which letters indicate the **aorta**, the **left chamber** and the **right atrium**?
Write down the correct letters in the table below.



name of part	letter
aorta	
left chamber	
right atrium	

- 1p 27 Two students make a statement about arteries. These statements are found in the table below.

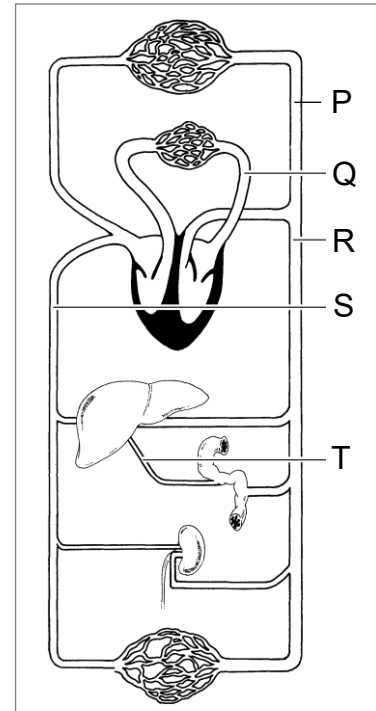
Indicate for each statement if it is true or false.

student	statement	true	false
Gerrick	Arteries lie deeper in the body than veins.		
Riano	Arteries transport blood from the heart to the organs.		

- 1p 28 The picture to the right shows a drawing of the small and large circulations. The letters P, Q, R, S and T indicate blood vessels.

→ Which blood vessel is part of the small circulation?

- A blood vessel Q
- B blood vessel R
- C blood vessel S
- D blood vessel T



- 1p 29 Blood plasma is a part of blood.

→ What is the task of blood plasma?

Blood plasma ensures ...

- A the creation of blood vessels.
- B the creation of blood cells.
- C transport of dietary fiber through the intestines.
- D transport of nutrients through the body.

- 1p 30 Below are two sentences about the large circulation. There are two words to choose from in each sentence.

→ Underline the correct choice word in each group.

Sentence 1).

In the greater circulation, the **blood** gives

carbon dioxide

oxygen

to **cells**.

Sentence 2).

In the greater circulation, **cells** give off

carbon dioxide

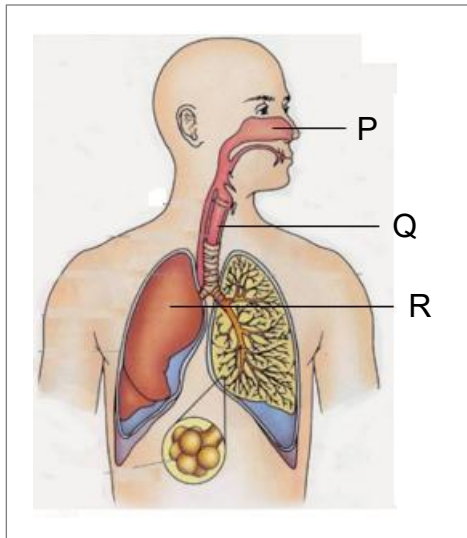
oxygen

to the **blood**.

Excretion

- 2p 31 The picture below shows the human respiratory system. Three parts are indicated with the letters P, Q and R.

→ Write down the names for P, Q and R in the table below.



letter	name of part
P	
Q	
R	

- 1p 32 Queeny has a cold. Her mucous membranes become irritated, swell up and then produce too much mucus. Queeny has to cough constantly due to the excess mucus.

→ What takes place during coughing?

Coughing causes ...

- A the inflammation to become less.
- B the swelling to become smaller.
- C less mucus to be produced.
- D the mucus to move.



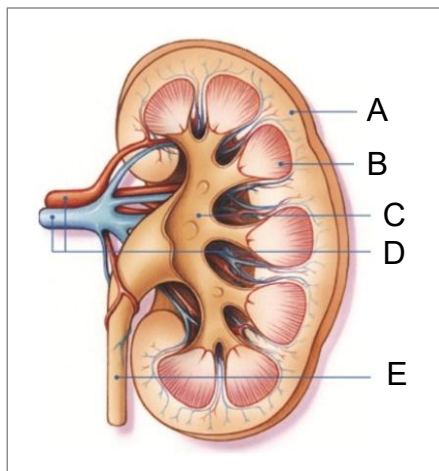
- 2p 33 Sheila is a healthy 16-year-old girl. The table below contains three statements about the air Sheila inhales and the air she exhales.

→ Write X-marks next to each statement to indicate if it is true or false.

statement	true	false
The air she breathes in is colder than the air she breathes out.		
The air she breathes in is more humid than the air she breathes out.		
The air she breathes in contains more carbon dioxide than the air she breathes out.		

- 2p 34 In the picture below, six parts of the kidneys are indicated with the letters A, B, C, D, E and F.

→ Which letter indicates the **renal medulla**, the **renal cortex** and the **renal pelvis**? Write down the correct letters in the table below.

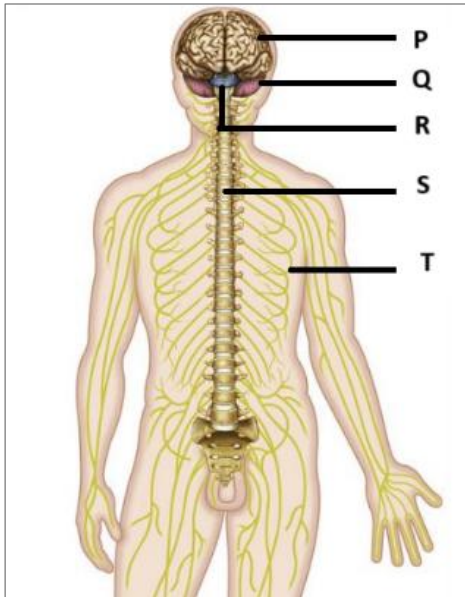


part	letter
renal medulla	
renal cortex	
renal pelvis	

Regulation

- 2p **35** In the picture, five parts of the nervous system are indicated with the letters P, Q, R, S and T. Letter R indicates the brainstem. The other four parts are listed in the table below.

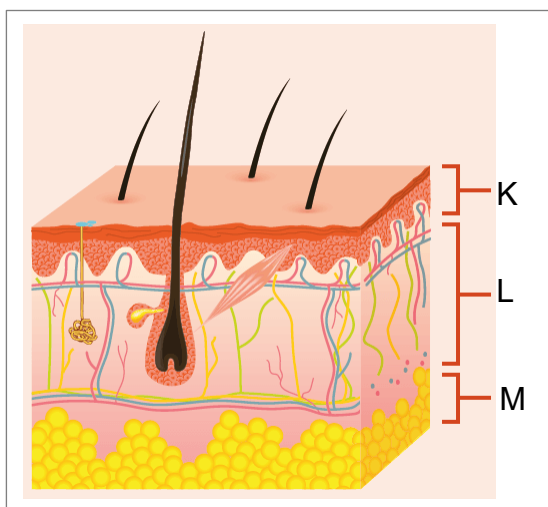
→ Which letter indicates the other four parts? Write down the correct letters in the table below.



part	letter
brainstem	R
nerves	
cerebellum	
cerebrum	
spinal cord	

- 2p **36** A cross-section of the skin is shown below. One of the layers K, L or M is called subcutaneous connective tissue.

→ Write down the names of all three layers K, L and M in the table below.



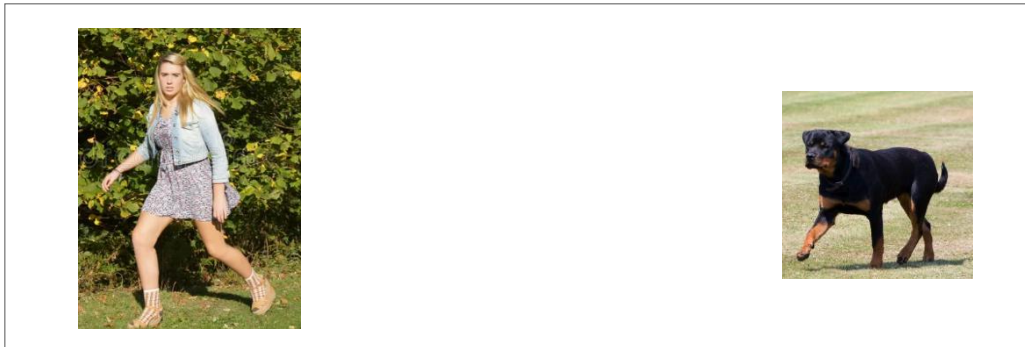
letter	name
K	
L	
M	

- 1p 37 Layer M in question 36 contains fat cells. The body extracts energy from fat. But fat has more functions in the body.

→ Write down another function of fat in the body.

.....

- 1p 38 Kisha is walking home. A large dog is running loose on the lawn.



Kisha is afraid. She does not trust that dog.
The adrenaline makes Tisha's heart beat faster than normal.
The adrenaline hormone also has other effects on the body.

→ Write down **another** effect of adrenaline on the body.

.....

Development and reproduction

- 2p 39 The first two stages in the development of a human are mentioned in the table below. Three rows in the table are left with blank spaces.

→ Fill in the three rows. Write down the correct names with their corresponding age periods.

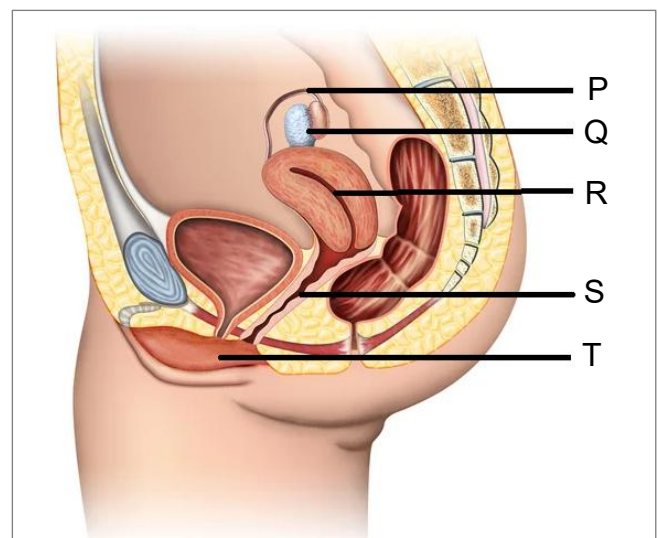
name of stage	age period
baby	between 0 and 1½ year old
toddler	between 1½ and 4 years old
kindergarten preschooler	between and years old
(school)child	between and years old
adolescent	between and years old

- 1p 40 The picture to the right shows the female reproductive organ. Five parts are indicated by the letters P, Q, R, S and T.

A baby can grow in one of these parts.

→ Which part is that?

- A part P
- B part Q
- C part R
- D part S
- E part T



- 2p 41 Look again at the picture of the female reproductive organ.
The parts **labia**, **Fallopian tube** and **ovary** are also indicated by a letter.

→ Write down the correct letter for these parts in the table to the right.

part	letter
labia	
Fallopian tube	
ovary	

- 2p 42 Two empty rectangles 1 and 2 are drawn below.

→ Draw the shape of an egg cell in rectangle 1 and draw the shape of a sperm cell in rectangle 2.

Rectangle 1 (egg cell)

Rectangle 2 (sperm cell)

- 1p 43 Zina is 38 years old and she is now 14 weeks pregnant. The gynecologist lets Zina undergo an amniocentesis.

→ What is an amniocentesis done for?

- A To see how large the fetus is.
- B To see if the fetus has abnormalities.
- C To determine the date of birth of the baby.
- D To check the health of the mother.



- 2p 44 Zina does not want to have any more children after this pregnancy. That is why she plans to be sterilized after the birth.

Below are two sentences about Zina's sterilization. In (1) and (2) a word has been left out.

Sentence 1). Sterilizing is cutting Zina's ... (1)

Sentence 2). After the sterilization, ... (2) ... is no longer possible in Zina.

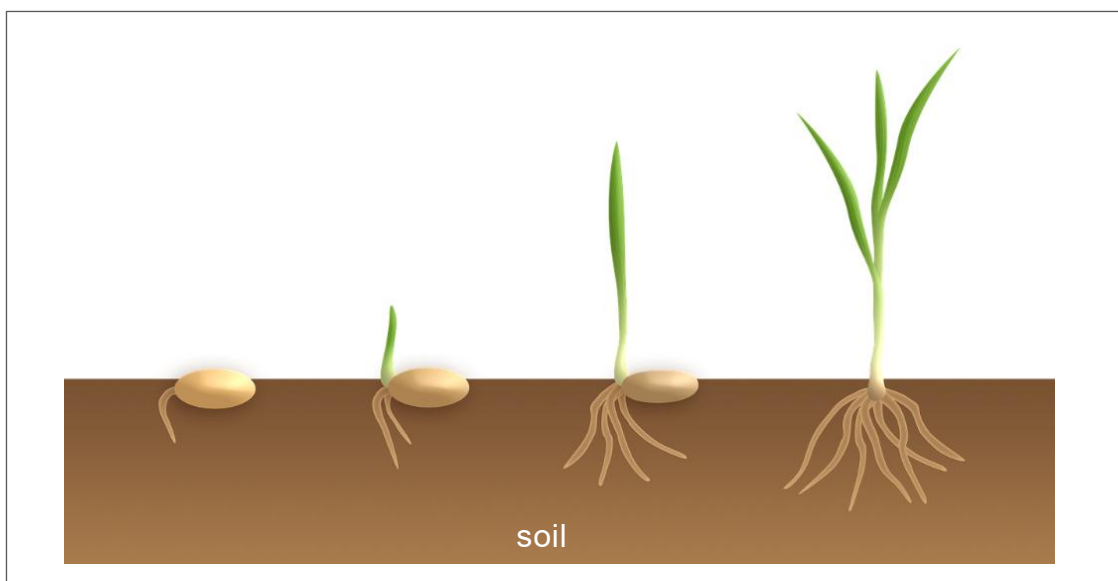
→ Write down the correct words for (1) and (2). Choose from:

ovaries, Fallopian tubes, labia, implantation, fertilization, ovulation.

1).

2).

- 1p 45 The picture below shows part of the life cycle of a plant.



Four stages in the life cycle of a plant are:
flowering, growth, germination and **death**.

→ Which phases are shown in the picture above?

- A flowering and growth
- B growth and germination
- C germination and death
- D flowering, growth and death