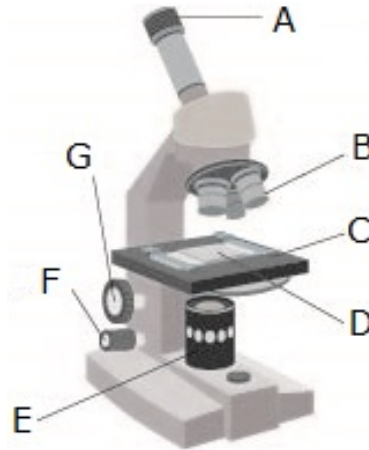


Name Class Date

- 1 Microscopes are used to magnify small objects so that we can see them in detail. The diagram shows a microscope.



- a Which letter on the diagram represents the:
eye piece
objective lens? (2 marks)

- b The eyepiece lens magnification is 10.
The objective lens magnification is 40.
Calculate the total magnification using the formula:
eyepiece lens magnification x objective lens magnification =
total magnification

..... × = (1 mark)

- c Name the smallest unit that living organisms are made of.
..... (1 mark)

- 2 Drugs are chemical substances that affect your body.

- a There are two main types of drugs, medicinal drugs and recreational drugs.
- | | | | |
|----------------|--------------------|-----------------|----------------|
| alcohol | antibiotics | cannabis | ecstasy |
| | penicillin | tobacco | |
- i Underline all the medicinal drugs. (2 marks)
- ii Circle one illegal drug. (1 mark)

Name Class Date

- b** The boxes on the left show some of the substances in tobacco smoke. The boxes on the right show descriptions of the substances. Match each substance to its description.

carbon monoxide

is an addictive drug

nicotine

causes cancer

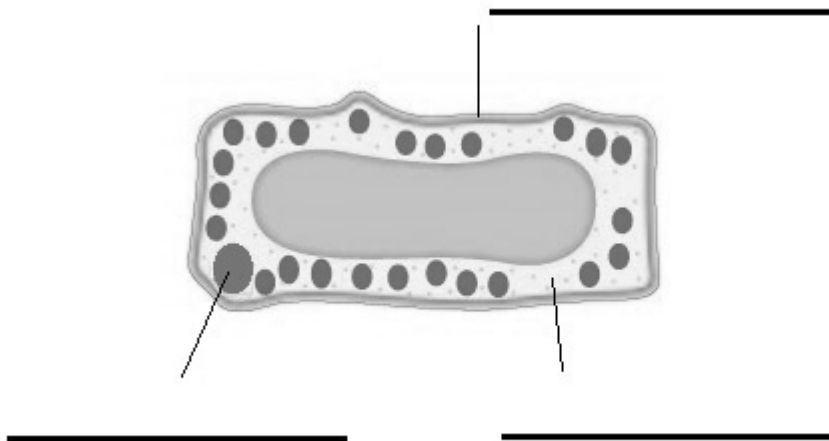
tar

is a poisonous gas

(3 marks)

- 3** All living things are made up of cells.

- a** The diagram shows a plant cell.



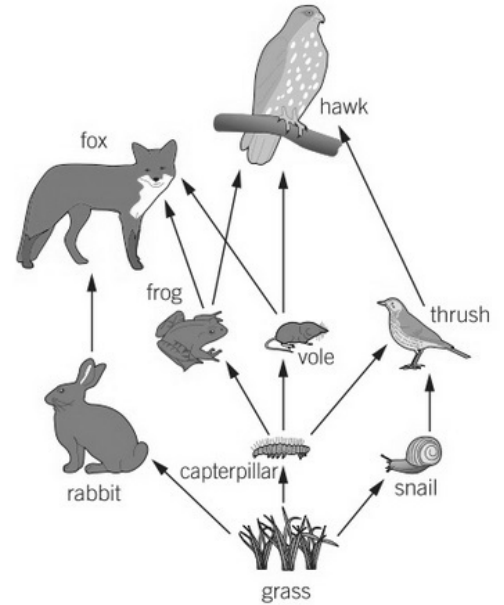
- i** Complete the labels for the parts of the plant cell shown. (3 marks)
- ii** Circle the components of a cell that are found in plant cells **only**.

cell membrane cell wall chloroplast cytoplasm
mitochondrion nucleus vacuole

(3 marks)

Name Class Date

4 The diagram shows a food web. Use the food web to answer the questions below.



a i Name a herbivore in this food web.

..... (1 mark)

ii Name a producer in this food web.

..... (1 mark)

b A disease caused the caterpillars to become extinct. Describe what would happen to the frogs.

..... (1 mark)

5 Read the following definition: 'A place or role an organism has in an ecosystem'. Circle the word that matches this definition.

community **environment** **habitat** **niche** (1 mark)

6 Multicellular organisms have five layers of organisation.

a Fill in the gaps to show the five layers of organisation.

cells → → organ → organ systems → (2 marks)

b Name **one** plant organ.

..... (1 mark)

c The skeleton is classed as a type of organ system. Give **two** functions of the skeleton.

1.....

Name Class Date

2.....

(2 marks)

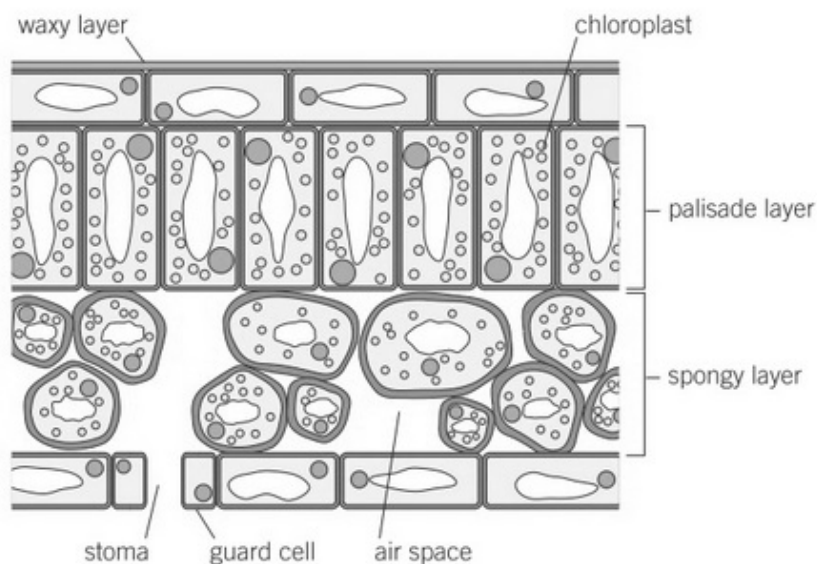
- 7 a Plants need carbon dioxide to make food by the process of photosynthesis.
Name the products of photosynthesis.

1.....

2.....

(2 marks)

- b The diagram shows what the inside of a leaf looks like.



Add an arrow to the diagram to show the path carbon dioxide takes to enter the leaf from the surrounding environment.

(1 mark)

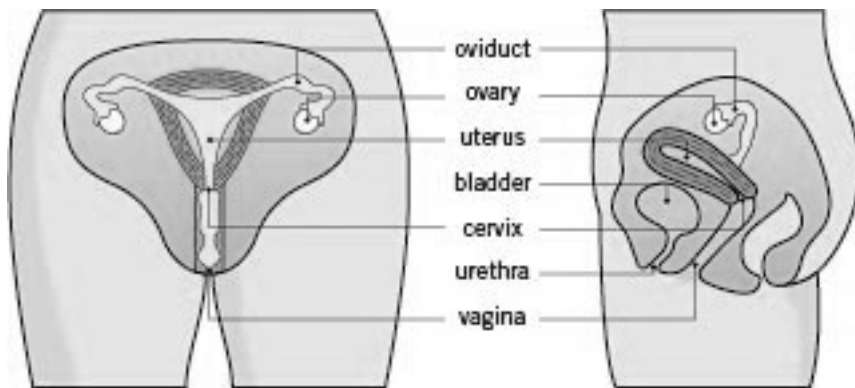
Name Class Date

c The diagram shows the parts of a flower.



- i Draw a box around the part that produces pollen. (1 mark)
- ii Underline the part which contains ovules. (1 mark)

8 The diagram shows the female reproductive system.



- a
 - i Name the part of the female reproductive system where fertilisation occurs.
..... (1 mark)
 - ii Describe how the egg gets from the ovary to the site of fertilisation.
..... (1 mark)

Name Class Date

- b** Using the correct words below, complete the sentences about the changes that occur during birth.

bladder **cervix** **ovary** **oviduct**
urethra **uterus** **vagina**

During birth, the relaxes. The muscles in the walls of the contract and the baby is pushed out of the.....

(3 marks)

- 9** There is lots of variation between people.

- a** Name one characteristic that is caused by **inherited variation**, one caused by **environmental variation** and one caused by **both**.

inherited

environmental

both

(3 marks)

- b** Data about different types of variation can be displayed using graphs. Which type of graph you would use to display the following sets of data:

- i** eye colour of people in the class

..... (1 mark)

- ii** length of little finger of people in the class?

..... (1 mark)

Name Class Date

10 The table shows the energy requirements of different people.

Type of person	Energy required per day / kcal
male athlete	5500
male adult office worker	2900
male aged 16 years	2500

a **i** Calculate how much more energy a male office worker needs than a male aged 16 years.

..... (1 mark)

ii Explain why the male athlete requires the most energy.

..... (1 mark)

iii Suggest why females generally need less energy than males.

..... (1 mark)

b The food we eat is broken down to release energy.

Write the equation for aerobic respiration.

..... (2 marks)

c The table compares some of the features of aerobic and anaerobic respiration.

Tick the boxes to show whether each feature is true of aerobic respiration or anaerobic respiration.

Feature	Aerobic respiration	Anaerobic respiration
uses oxygen		
produces lactic acid		
releases energy		

(2 marks)

Name Class Date

11 Plants need mineral ions.

Match each type mineral ion with why the plant needs it and the symptom(s) seen if the plant becomes deficient in the mineral.

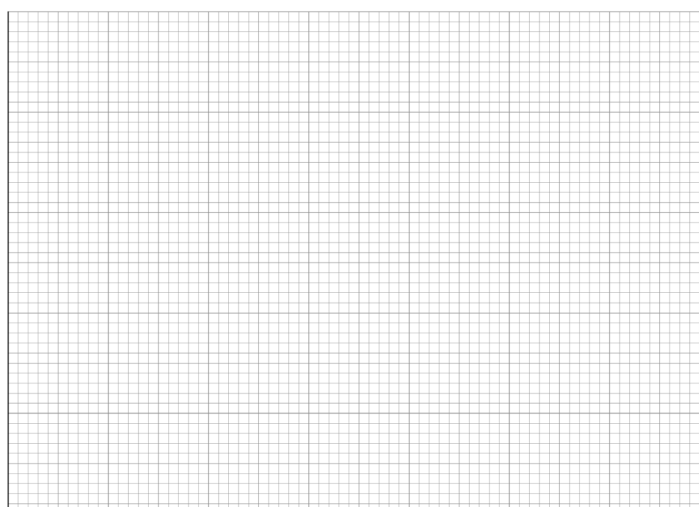
nitrates	for making chlorophyll	yellow leaves
magnesium	for growth	poor root growth and purple leaves
phosphorus	for healthy roots	stunted growth

(3 marks)

12 A student measures the number of breaths they take in a minute when they are resting and when they are exercising. The table shows the results.

Activity level	Number of breaths / minute
resting	15
intense exercise	30

Plot the results on the graph paper below.



(5 marks)

Name Class Date

- 13** A student carried out food tests on four different samples of food.
The table shows the results.

Food solution	Colour change for each food test		
	Test for starch with iodine	Test for fat with ethanol	Test for protein with copper sulfate and sodium hydroxide
A	blue-black	colourless	purple
B	orange	cloudy	blue
C	blue-black	cloudy	blue
D	orange	colourless	purple

- a** Use the table of results to decide which food samples contain:
- i Starch** and (1 mark)
 - ii Fat** and (1 mark)
 - iii Protein** and (1 mark)

- b** Describe how to test a food solution for sugar.

Step 1.....

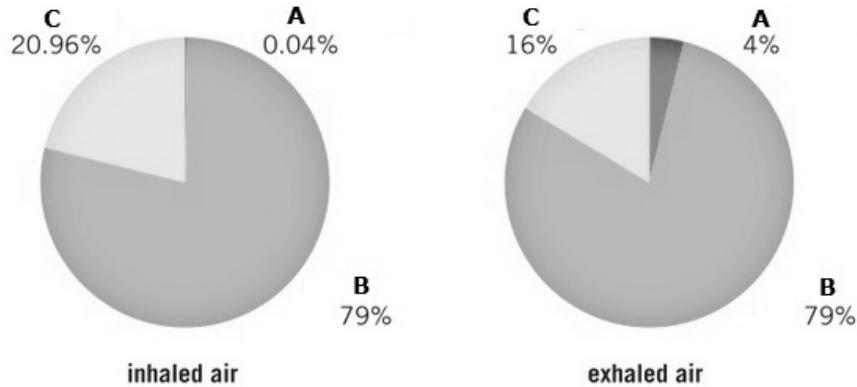
Step 2.....

Result if sugar present.....

(3 marks)

Name Class Date

14 The pie charts show the percentage of the different types of gases in inhaled and exhaled air.



a Complete the table by naming each type of gas labelled A, B, and C in the pie charts and to show the percentages of each in inhaled and exhaled air.

	Name of gas	Percentage in inhaled air / %	Percentage in exhaled air / %
A			
B			
C			

(3 marks)

b Describe the process of **inhalation**.

In this question you get marks for how well your answer is written. You will get marks for:

- spelling
- grammar
- organising your ideas and information clearly
- using key scientific words.

.....

.....

.....

.....

Name Class Date

.....

.....

..... (6 marks)