



General Certificate of Secondary Education
2025

Centre Number

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Candidate Number

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Biology

Unit 1

Foundation Tier



[GBL11]

GBL11

TUESDAY 13 MAY, AFTERNOON

TIME

1 hour 15 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page or on blank pages.

Complete questions in black ink and use a dark HB pencil for drawings and graphs.

Do not write with a gel pen.

Answer **all eleven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is **75**.

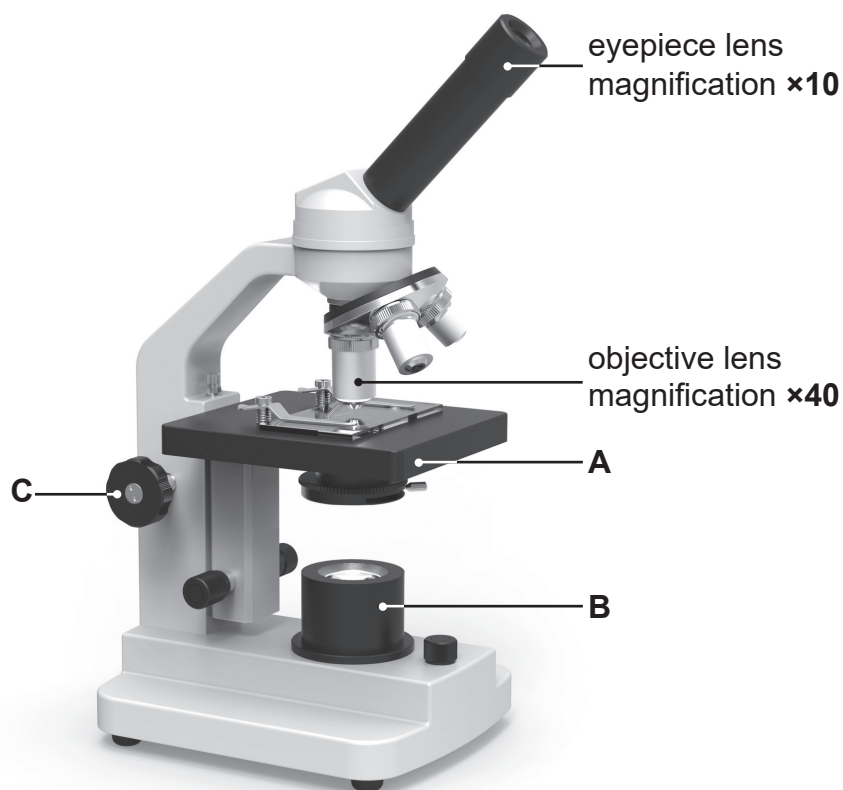
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

You may use a scientific calculator.

Quality of written communication will be assessed in Question **9(d)**.



- 1 The photograph shows a light microscope used by a student to view onion cells.



Look at the photograph.

- (a) Name parts **A** and **B**.

A _____

B _____

[2]

- (b) Give the function of part **C**.

[1]



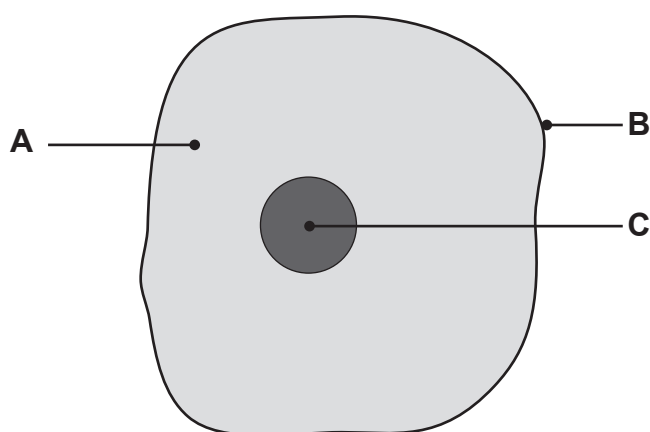
- (c) Calculate the **overall** magnification used by the student to view these onion cells.

Show your working.

_____ [2]



2 (a) The diagram shows an animal cell.



(i) Name parts **A** and **B**.

A _____

B _____

[2]

(ii) Give the function of part **C**.

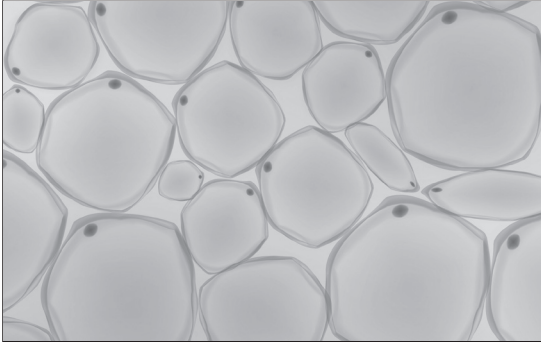
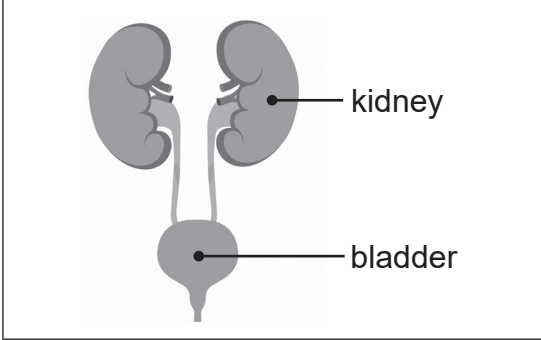
[1]



Animals are made up of many cells.

These cells have different levels of organisation in the animal.

(b) Complete the table to show which level of organisation describes each example shown.

Example	Level of organisation
	tissue
	
	

[2]

[Turn over



3 Some ecological terms are given below.

Draw a straight line to link the ecological term to the correct description.

Ecological term

Description

habitat

the interactions between organisms
and their environment

ecosystem

the place where an organism lives

population

an environmental factor, e.g. light

biodiversity

the variety of organisms in an area

competition

the number of organisms of the same
species living in an area

the struggle between organisms
for limited resources

[5]



4 Carbohydrates are important biological molecules.

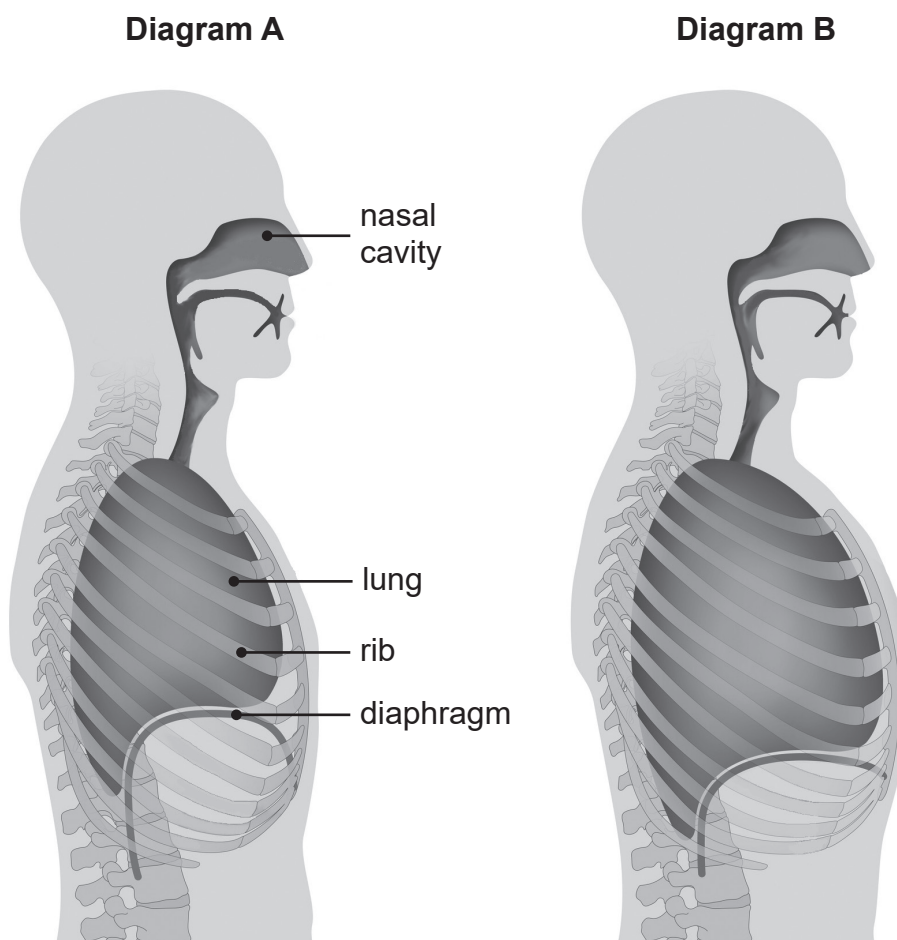
Complete the table to identify each carbohydrate and where it is found, from the descriptions given.

Description	Carbohydrate	Where it is found
simple sugar	lactose	
complex carbohydrate	cellulose	
complex storage carbohydrate		plant cells
complex storage carbohydrate		animal cells

[4]



- 5 Diagrams **A** and **B** show changes to some parts of the respiratory system during breathing.



Look at the diagrams.

Diagram **B** shows **breathing in**.

(a) Give **two** pieces of evidence to support this statement.

1. _____

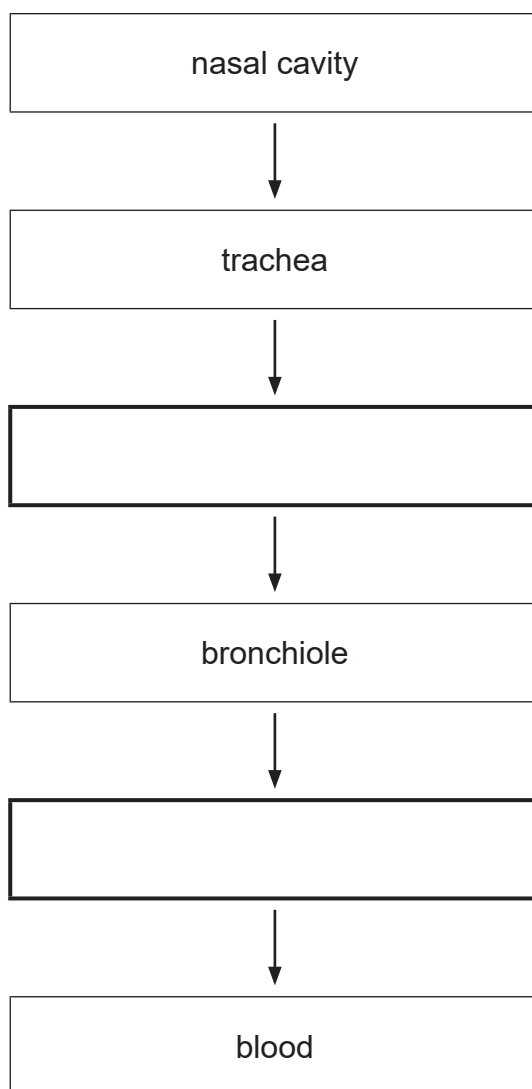
2. _____

[2]



During breathing in, oxygen travels through the respiratory system and is absorbed into the blood.

- (b) Complete the diagram to show the parts of the respiratory system that oxygen travels through, before it is absorbed into the blood.



[2]

- (c) Name the muscles, found between the ribs, which are involved in breathing.

[1]

[Turn over



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6 Enzymes are needed to help digest food.

(a) What is digestion?

[3]

(b) Complete the **five** boxes in the table which describe the digestion of some food molecules by enzymes.

Enzyme	Food molecule being digested	Product(s) of digestion
	starch	
		amino acids
lipase	fat	fatty acids and _____

[5]

(c) The ileum has structures which increase the surface area for the absorption of the products of digestion.

Name these structures.

[1]

[Turn over



- 7 Diabetes is a condition where the body does not produce enough hormone to keep blood glucose levels normal.

(a) Name this hormone.

[1]

Lethargy is one symptom of diabetes.

(b) Give **two other** symptoms of diabetes.

1. _____

2. _____ [2]

(c) The table shows the number of people with diabetes in Northern Ireland from 2016 to 2019.

Year	Number of people with diabetes
2016	88 305
2017	92 480
2018	96 114
2019	99 833



Look at the table.

- (i) Calculate the percentage **increase** in the number of people with diabetes from **2016** to **2019**.

Show your working.

Give your answer to **one decimal place**.

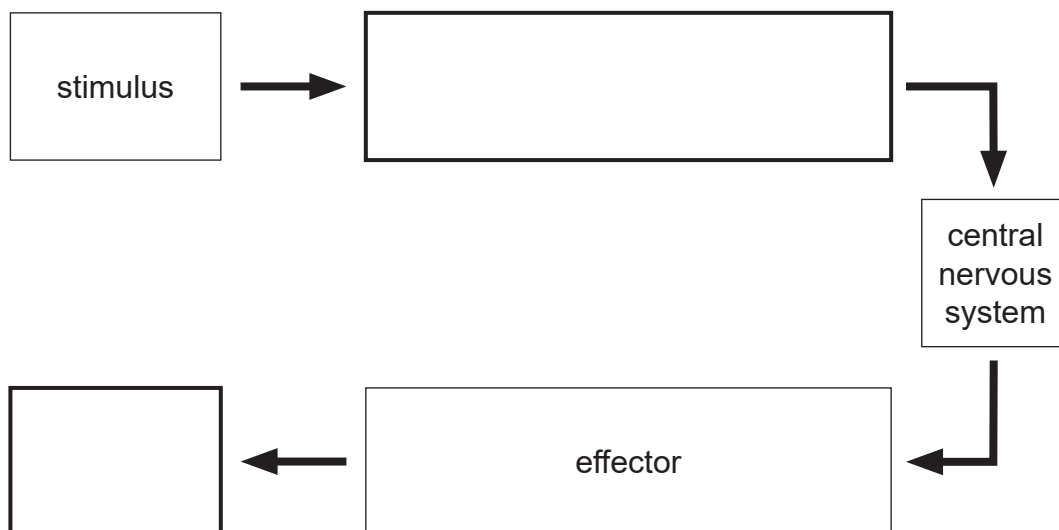
_____ % [4]

- (ii) Suggest **one** reason for the increase in the number of people with diabetes.

_____ [1]



- 8 (a) The diagram shows the role of the central nervous system in co-ordination in the body.



Look at the diagram.

- (i) **Complete the diagram** by filling in the boxes. [2]

- (ii) Name the **two** parts of the body which make up the central nervous system.

1. _____

2. _____

[2]



A response can be a voluntary action or a reflex action.

(iii) Give **two** ways a voluntary action and a reflex action differ.

1. _____

2. _____
_____ [2]

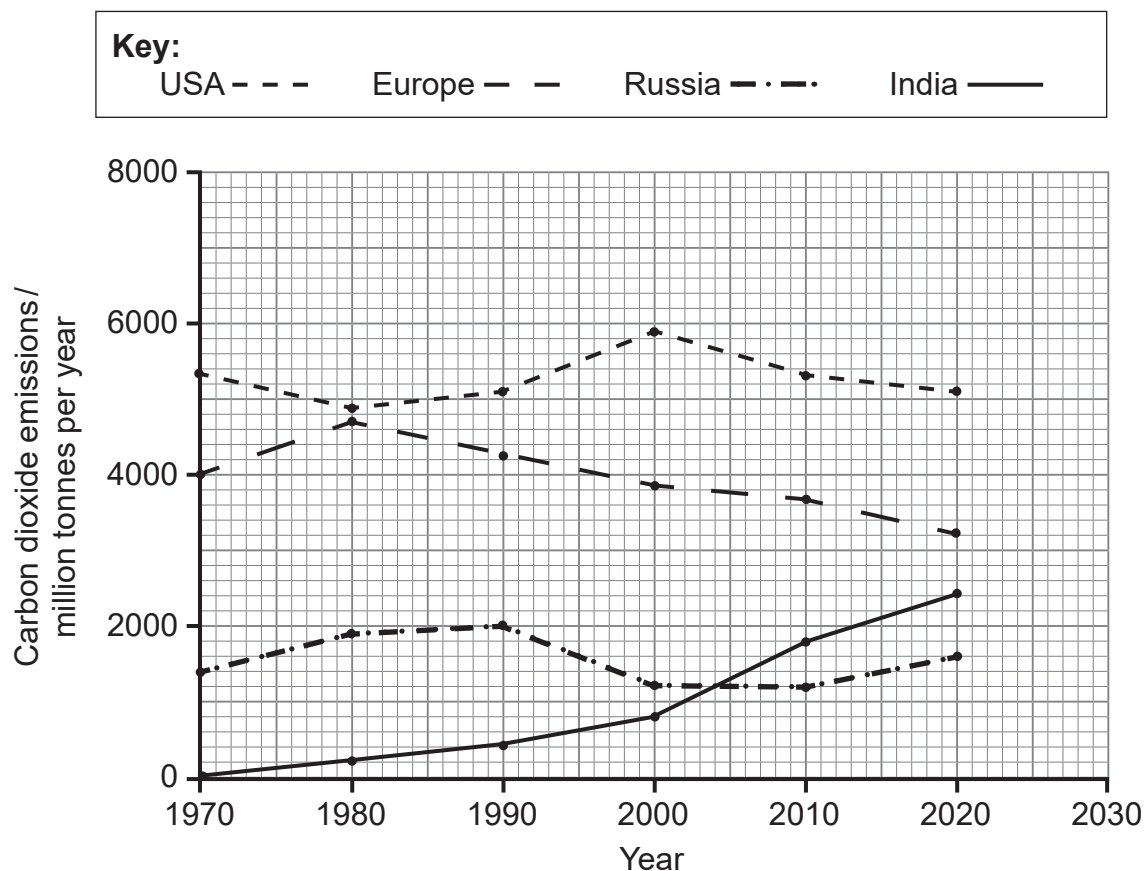
Another communication system in the body is the hormonal system.

(b) What is a hormone?

_____ [2]



- 9 The graph shows the carbon dioxide emissions from fossil fuels in four world regions from 1970 to 2020.



Look at the graph.

- (a) Which world region had the **greatest** change in carbon dioxide emissions **between 2000 and 2020**?

No data is required in your answer.

[1]



- (b) Calculate the decrease in carbon dioxide emissions per year in Russia from **1990** to **2000**.

Show your working.

_____ million tonnes per year [2]

- (c) Use a ruler to extend the **2010** to **2020** line for Europe to **2030**.

Use this line to predict how much carbon dioxide might be emitted by Europe in **2025**.

_____ million tonnes per year [2]



Carbon dioxide can be removed from and returned to the environment in the carbon cycle.

Combustion is one process which returns carbon dioxide to the environment.

- (d)** Name and describe **three other** processes that remove or return carbon dioxide to the environment.

In this question you will be assessed on your written communication skills, including the use of specialist scientific terms.

[illegible]



[6]

[Turn over



10 (a) Complete the word equation for aerobic respiration.



[3]

At rest, human muscles carry out aerobic respiration.

During strenuous exercise, the muscles can also carry out anaerobic respiration.

(b) Give **three** differences between aerobic respiration and anaerobic respiration in muscles.

1. _____

2. _____

3. _____

[3]

Anaerobic respiration also takes place in yeast.

(c) Give **two** differences between **anaerobic respiration** in muscles and in yeast.

1. _____

2. _____

[2]



(Questions continue overleaf)

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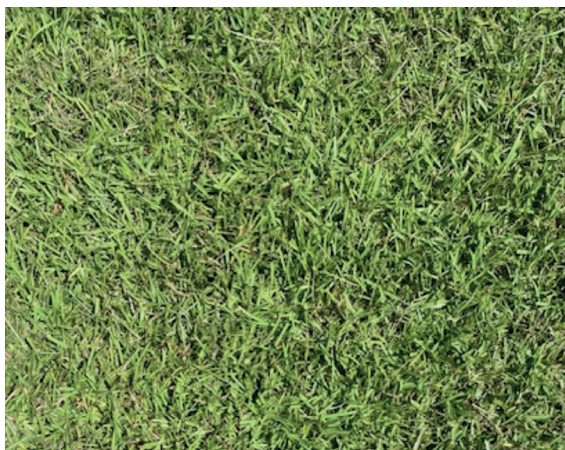
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11 Zoysia grass is found in many gardens in the USA.

It grows rapidly during the spring but does not grow during the winter.

The photographs show the appearance of the same area of Zoysia grass during the spring and winter.

Spring



Winter



- (a)** Use evidence from the photographs to explain why Zoysia grass does not grow during the winter.

[2]



During the winter, Zoysia grass stores minerals.

Three minerals needed by plants are nitrate, calcium and magnesium.

(b) Give the function of each of these minerals in plants.

Nitrate _____

Calcium _____

Magnesium _____

_____ [3]

During the winter, Zoysia grass also stores water so it can start growing again the following spring.

(c) Describe the change in **two other** abiotic factors which may cause Zoysia grass to start growing.

1. _____

2. _____ [2]

THIS IS THE END OF THE QUESTION PAPER



SOURCES

Question 1: © Getty Images

Question 2(a): Chief Examiner

Question 2(b): © Getty Images

Question 5: © Getty Images

Question 7(c): © www.diabetes.org.uk/statistics/diabetes-prevalence

Question 9: Adapted from edgar.jrc.ec.europa.eu/report_2022. © European Union, 1995-2025. Licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) licence

Question 11: Chief Examiner

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Question Number	Marks
1	
2	
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Total Marks	
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Examiner Number

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