



# UNITED LEARNING

YEAR 7

SCIENCE

END OF YEAR BIOLOGY ASSESSMENT 2023

TIME ALLOWED: 40 MINUTES

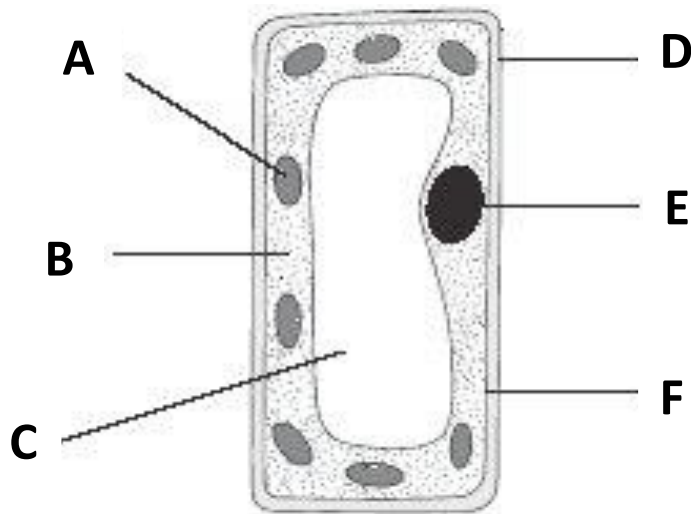
Student Name	
Class	

Total Mark

/40

**QUESTION 1 – PLANT CELLS (8 marks)**

The diagram below shows a cell from a leaf.



The names of four parts of the cell are listed in the table below.

- 1.1 Match the name of each part with a letter from the diagram.  
Write your answers in the table.

Part	Letter of Part
cell membrane	
nucleus	
chloroplast	
vacuole	

4

- 1.2 What is the main function of the chloroplast?

\_\_\_\_\_

1



1.3 What is the main function of the nucleus?

\_\_\_\_\_

1

1.4 Animal cells also have a nucleus.

Name **two** other parts of a cell that are found in animal cells.

1. \_\_\_\_\_

2. \_\_\_\_\_

2

QUESTION 2 – LIVING ORGANISMS (4 marks)

2.1 This question is about organisation in living organisms.

Write the biological structures from the box in the correct size order.

cell	nucleus	organ	tissue
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Smallest



Largest

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3

2.2 Name **one** plant organ.

\_\_\_\_\_

1

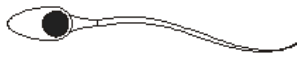


**QUESTION 3 – SEX CELLS (4 marks)**

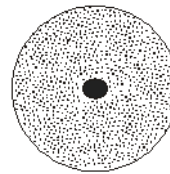
Males and females produce different types of sex cell.

Below are pictures of the two sex cells found in humans.

**A sperm cell**



**An egg cell**



3.1 Which of the above cells is the **female** sex cell?

\_\_\_\_\_

1

3.2 Where is the sperm cell produced?

**Tick** the correct box.

Ovaries	<input type="checkbox"/>	Scrotum	<input type="checkbox"/>
Testes	<input type="checkbox"/>	Urethra	<input type="checkbox"/>

1

3.3 Where is the egg cell produced?

**Tick** the correct box.

Uterus	<input type="checkbox"/>	Ovaries	<input type="checkbox"/>
Testes	<input type="checkbox"/>	Oviduct	<input type="checkbox"/>

1



3.4 What is the name given to the **male** sex cell found in flowering plants?

**Tick** the correct box.

Stigma	<input type="checkbox"/>	Ovule	<input type="checkbox"/>	
Anther	<input type="checkbox"/>	Pollen	<input type="checkbox"/>	<input type="checkbox"/>

1

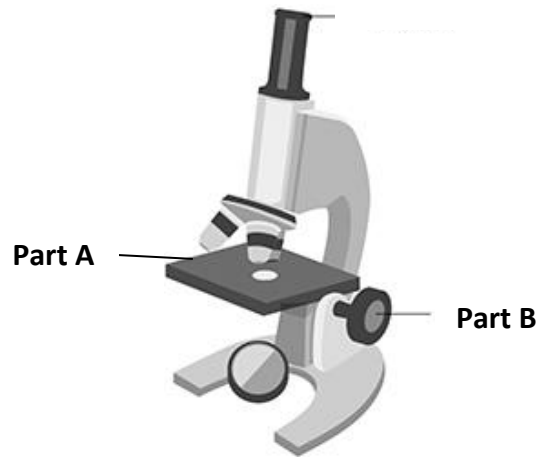
Turn over for the next question.



TURN OVER ►

**QUESTION 4 – MICROSCOPES (5 marks)**

Below is a picture of a microscope.



4.1 Give the name of part **A**.

1

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4.2 What is the function of part **B**?

1

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4.3 A prepared slide is put on the stage of the microscope.

The slide is viewed with the  $\times 40$  objective lens.

The eyepiece lens has a magnification of  $\times 4$ .

What is the overall magnification of the microscope?

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Overall magnification =  $\times$  .....

1



4.4 A cell was viewed under a different microscope.

The image of the cell had a size of 12 mm.

The overall magnification of the microscope was  $\times 150$

Calculate the real size of the cell.

Use the equation:

$$\text{Real size} = \text{Image size} \div \text{Magnification}$$

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Real size = .....mm

2

Turn over for the next question.



**QUESTION 5 – INVESTIGATING VARIATION (5 marks)**

A student investigated how the brightness of a lamp affected the height that plants grow.

She had a hypothesis:

*The brighter the lamp, the taller the plants will grow.*

5.1 What is the **dependent** variable in this investigation?

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1

5.2 For each brightness, the student grows 5 plants.

Below is the height of 5 plants grown under one of the lamps:

**43 cm, 44 cm, 42 cm, 44 cm, 42 cm**

Calculate the mean height of these plants.

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Mean height = .....cm

2

5.3 A student said that ‘mean height’ is an example of continuous data.

Explain why she is correct.

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1



5.4 Another student collected data on the eye colour of students in their class.

Eye colour is an example of what is called 'discrete variation'.

What is the meaning of the phrase '**discrete variation**'?

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1

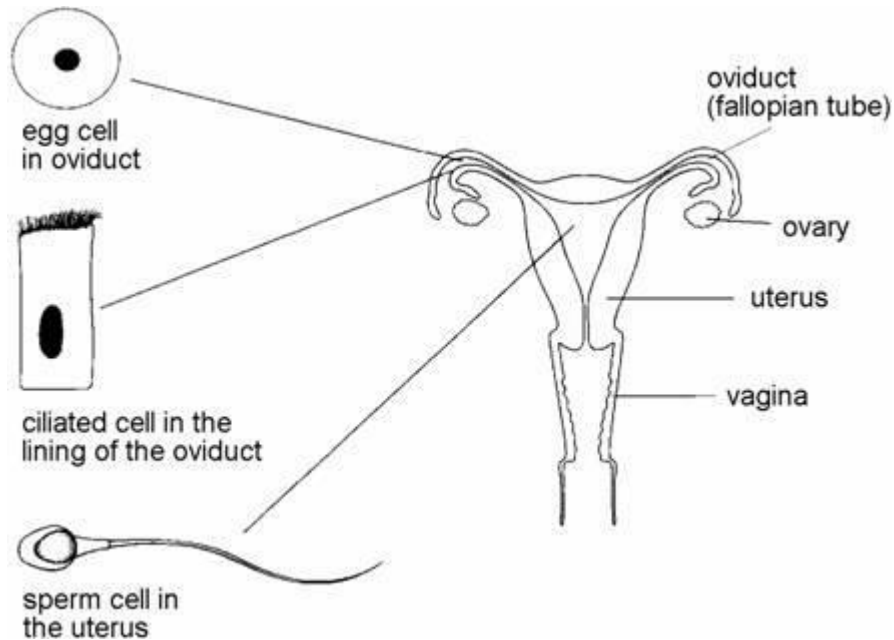
Turn over for the next question.



**QUESTION 6 – FEMALE REPRODUCTIVE SYSTEM (7 marks)**

The diagram shows the female reproductive system just before fertilisation takes place.

An egg cell, a ciliated cell and a sperm cell are drawn in more detail.



*not to scale*

6.1 In which labelled part is an egg normally fertilised by a sperm? 1

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6.2 Describe **one** way in which a sperm cell is adapted to its function. 1

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6.3 What is the function of the ciliated cells in the lining of the oviduct? 1

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6.4 Choose **one** of the options below to complete this sentence:

*An egg cell is normally released in the female reproductive system every \_\_\_\_\_.*

**Tick** the correct box.

7 days

10 days

14 days

28 days

1

6.5 A chicken egg contains yolk which is a nutrient store for the developing chick.

A human egg cell does not contain yolk.

Describe how a human foetus gets its nutrients.

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3



**QUESTION 7 – DIFFUSION (7 marks)**

Diffusion is an important process in animals and plants.

7.1 What is meant by the term diffusion?

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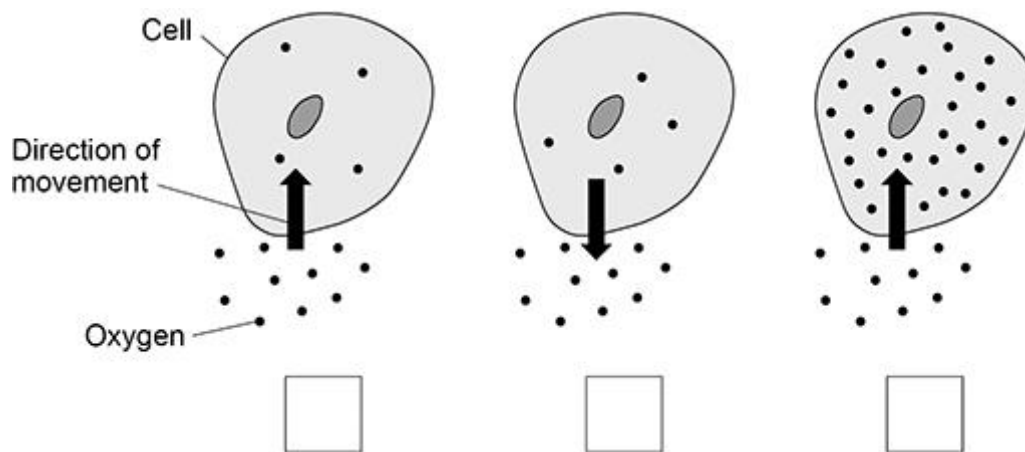


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2

7.2 Which diagram shows oxygen moving by diffusion?

Tick (✓) **one** box.



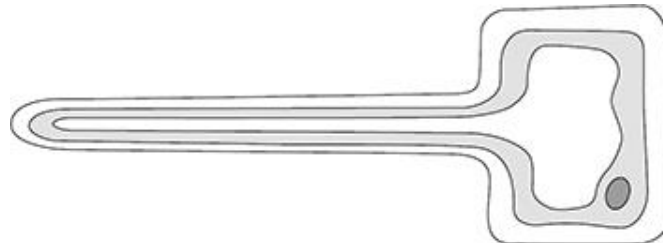
1



Cells absorb useful substances.

Diffusion is one way they do this.

Below is a picture of a specialised cell that absorbs substances from the soil.



7.3 What is the name of this type of specialised cell?

1

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7.4 Describe how this cell is adapted to increase the absorption of substances from the soil.

1

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7.5 Which part of the cell controls what enters and leaves the cell?

1

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7.6 The cell above is a plant cell.

Give one way that it is **different** to a typical plant cell.

1

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**END OF ASSESSMENT**



This is the end of the assessment.  
There are no questions printed on this page.

