

Axcel
International School
A.S.K Beyond Academic Excellence

Final Exam 2023

Biology

Year 7

1 hour 30 minutes

Name : _____

Class : _____

Date : _____

READ THESE INSTRUCTIONS FIRST

Write your name, class and date on all the work you hand in.
Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.
Do not use paper clips, highlighters, glue, erasable pen, correction tape or correction fluid.

Calculator is allowed.

Answer **all** the questions.

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 90.

Parent's signature

For Examiner's Use

Question	Marks
Section A	
1	/5
2	/4
3	/9
4	/8
5	/6
6	/8
7	/5
Section B	
8	/12
9	/10
10	/6
11	/6
12	/11
Total	/90

Section A: 45%

- 1 Five types of animal and plant cells together with five possible functions are shown below.

Fill in (A) to (E) in the spaces below to match each type of cell to a function of that cell.

A – red blood cell
B – root hair cell
C – white blood cell
D – xylem
E – ciliated cell

- (i) Absorption of mineral ions
- (ii) Transport of oxygen
- (iii) Movement of mucus
- (iv) Protection against pathogen
- (v) Structural support

[Total: 5 marks]

- 2 Specialised cells are adapted to its specific functions.

State **two** main **differences** between a palisade cell and a root hair cell and describe the **adaptation** of the differences.

- (a) _____

- (b) _____

[4 marks]

3 Figure 3.1 shows a food web from the African grasslands.

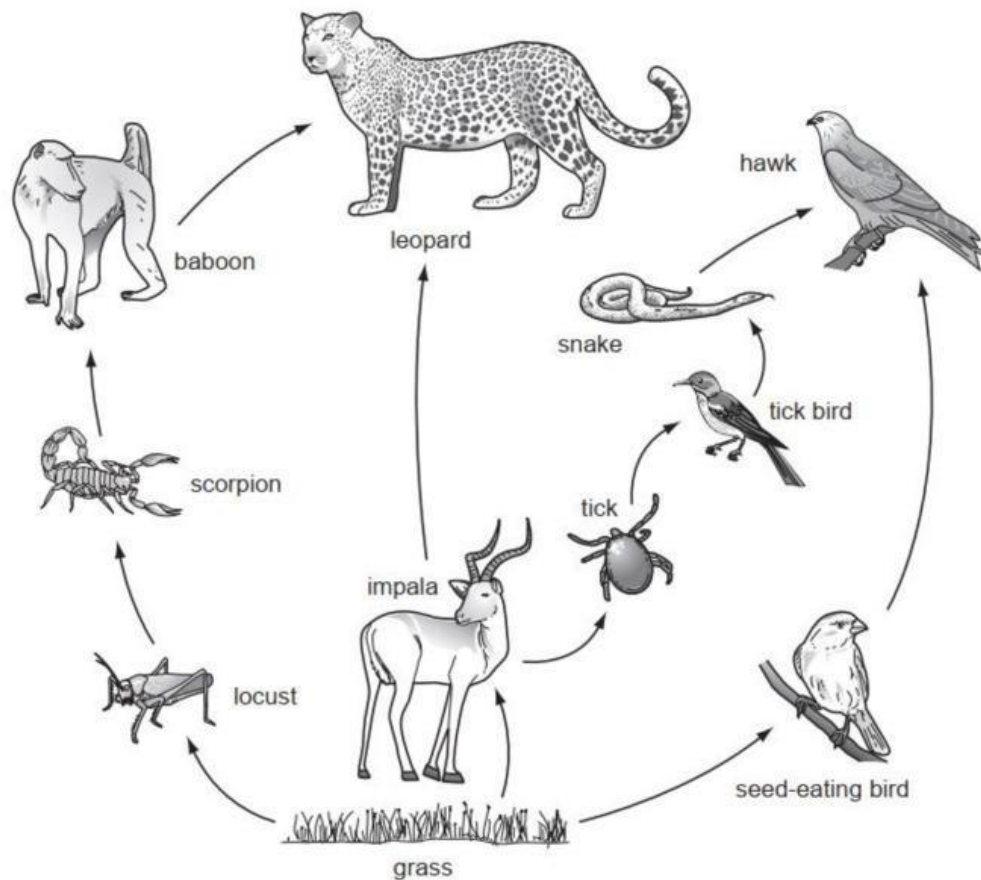


Figure 3.1

(a) Name **an** organism from this food web that is a

(i) Herbivore - _____

(ii) Carnivore - _____

(iii) Producer - _____

(iv) Both a predator and a prey - _____

[4 marks]

(b) Using information only from Figure 3.1, complete the food chains.

_____ → _____ → _____ → _____ → leopard

[1 mark]

(c) State the original source of energy from this food web.

_____ [1 mark]

(d) What do the arrows in the food web show?

_____ [1 mark]

(e) Predict and explain what could happen to the population of baboons when the population of Leopard increases.

_____ [2 marks]

[Total: 9 marks]

4 **Figure 4.1** shows a different type of cell.

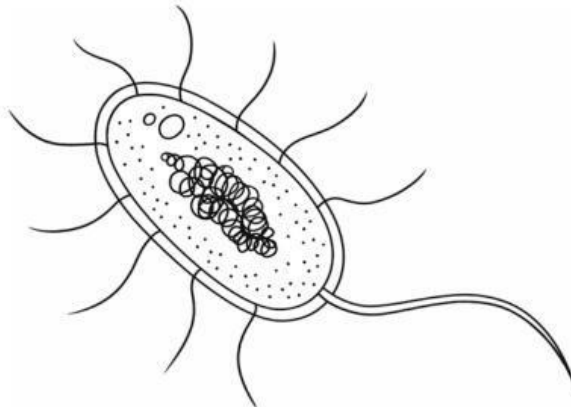


Figure 4.1

(a) Give **two** pieces of evidence that suggest the cell in **Figure 4.1** is a bacterial cell.

(i) _____

(ii) _____

[2 marks]

(b) Label the following parts of a bacterial cell as shown in **Figure 4.2**.

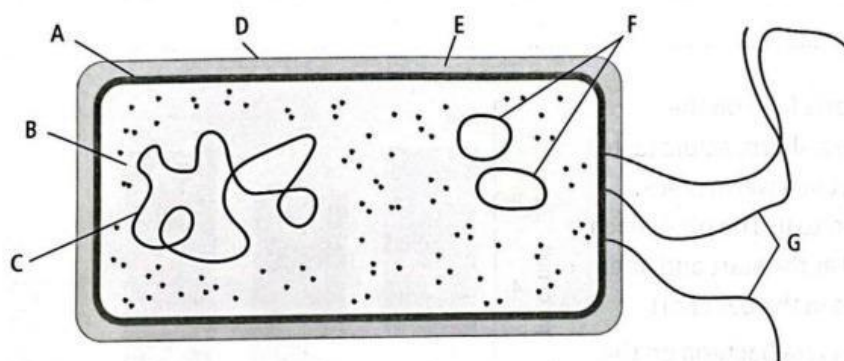


Figure 4.2.

(B) _____

(C) _____

(F) _____

(G) _____

[4 marks]

(c) Name **two** other microorganisms.

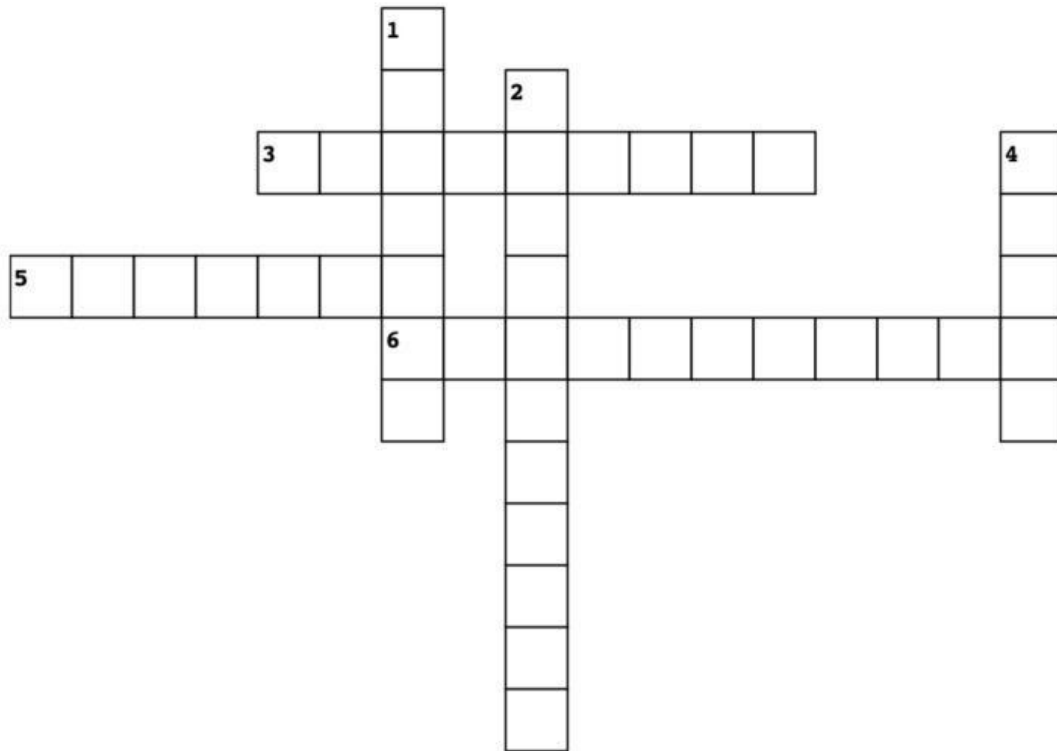
(i) _____

(ii) _____

[2 marks]

[Total: 8 marks]

5 Complete the crossword puzzle below.



Across

3. removes waste
5. part of cell that contains liquid
6. made up of only one cell

Down

1. controls all cell activities
2. shows responds to the environment
4. cells that fertilises egg

[Total: 6 marks]

- 6 The two-part Latin name for a tiger is *Panthera tigris*. Decide whether the animal below are from the same species, similar species or very different species from a tiger.

- (i) *Panthera leo* (ii) *Acinonyx jubatus*
(iii) *Felis Catus* (iv) *Panthera pardus*

- (a) Write the names given above in the correct columns in **Table 6.1** below.

Same Species	Related Species	Very different species

[4 marks]

- (b) The statement below are **incorrect**. Write the correct version of the statements on the lines below.

- (i) Similar species share the same two-part Latin name.

- (ii) Members of the same species always look similar.

- (iii) Members of different species usually have fertile offspring if they breed.

- (iv) A hybrid is born when animals of similar species breed.

[4 marks]

[Total: 8 marks]

7 **Figure 7.1** shows a microscope that we use to observe micro-organisms.

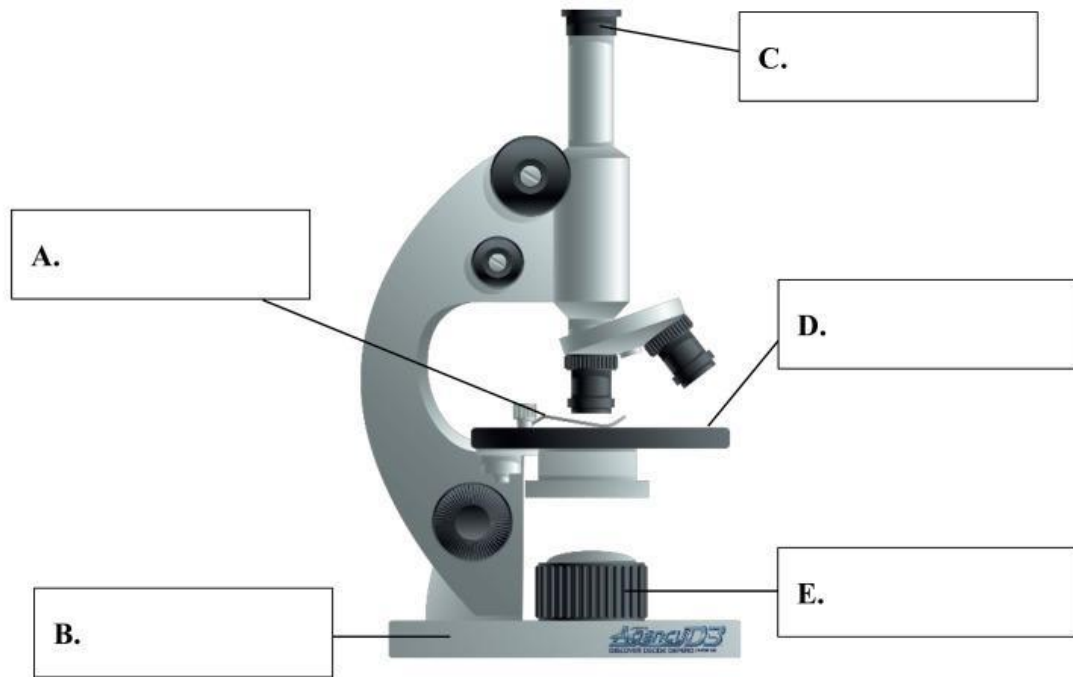
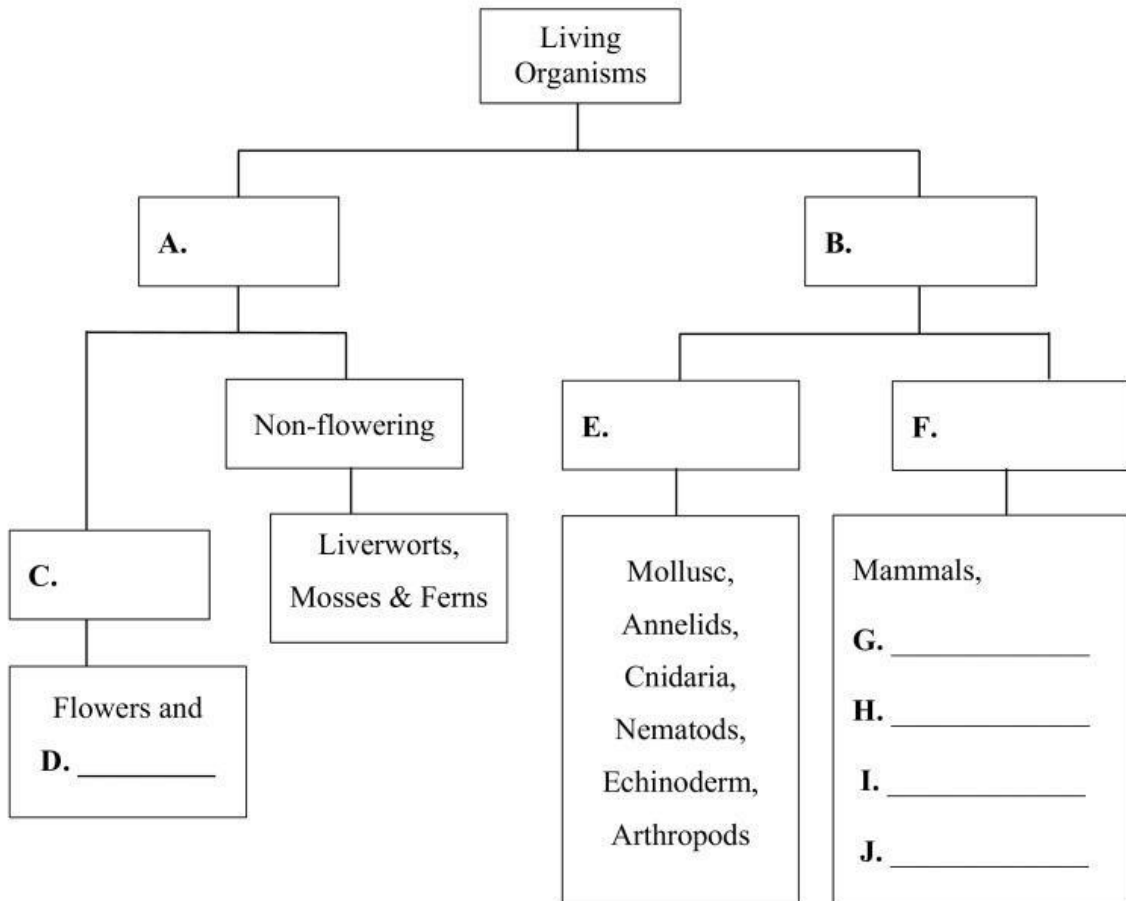


Figure 7.1

[Total: 5 marks]

Section B (45%)

8 (a) Fill in the spaces below to show the classification of living organisms.



[10 marks]

(b) State **two** features that will help you identify a mammal.

(i) _____

(ii) _____

[2 marks]

[Total: 12 marks]

- 9 **Figure 9** shows the main organs in the human body. Label **five** organs and add a brief description of their **function**. One has been done for you as an example.

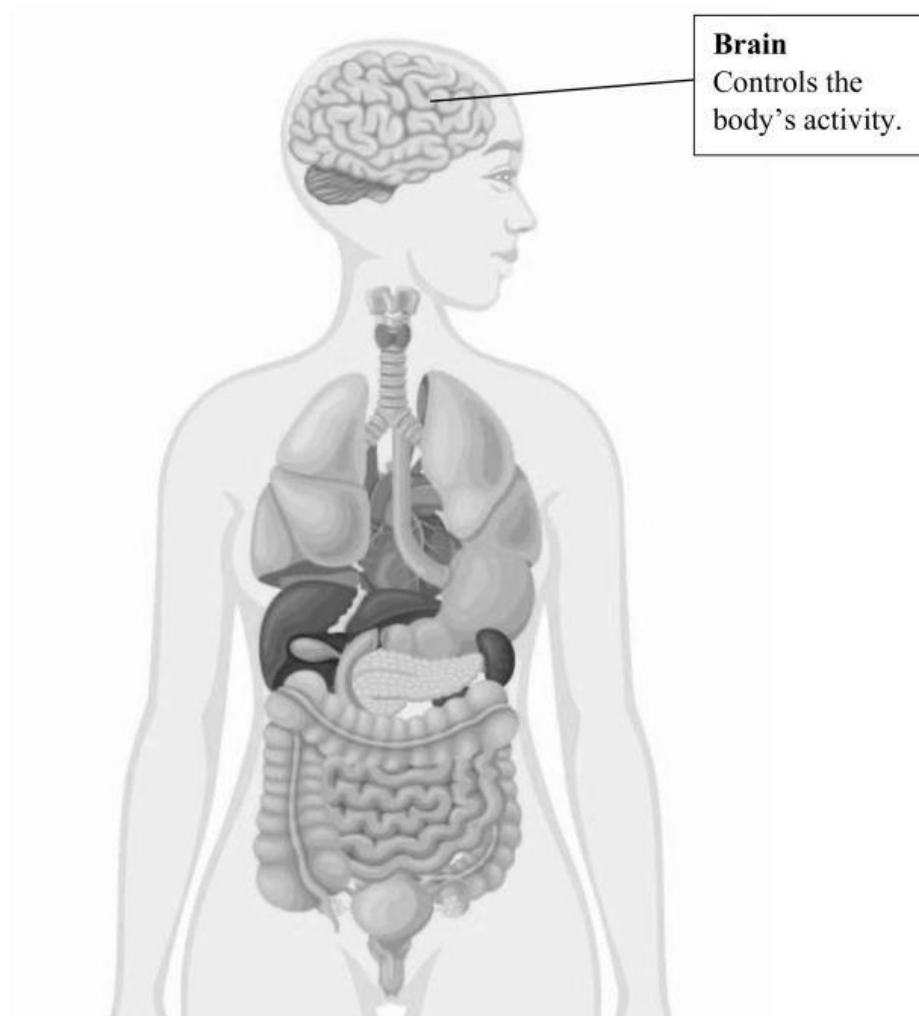


Figure 9

[Total:10 marks]

10 In this experiment, Sarah finds out how temperature effects mould growth on bread. First, she decides which variable needs to be changed. Then, she ensures that all the other variable needs to be kept the same.

(a) What is the **hypothesis** of Sarah's experiment?

_____ [1 mark]

(b) State the variable that Sarah **changed**?

_____ [1 mark]

(c) State **two** variables that she kept the same.

(i) _____

(ii) _____

[2 marks]

(d) Why did she **change only one variable** and kept the rest the same?

_____ [1 mark]

(e) Predict the **conclusion** that Sarah would get at the end of her experiment.

_____ [1 mark]

[Total: 6 marks]

11 Red blood cells are very important as they carry oxygen around our body.

- (a)** Give **two adaptations** of red blood cells and **how** it allows red blood cell to carry oxygen around our body more effectively.

Example:

Red blood cells are filled with haemoglobin.

Haemoglobin is a red pigment molecules that carries oxygen.

(i) _____

(ii) _____

[4 marks]

- (b)** State the **name** of another type of blood cell that is found in our body and its **function**.

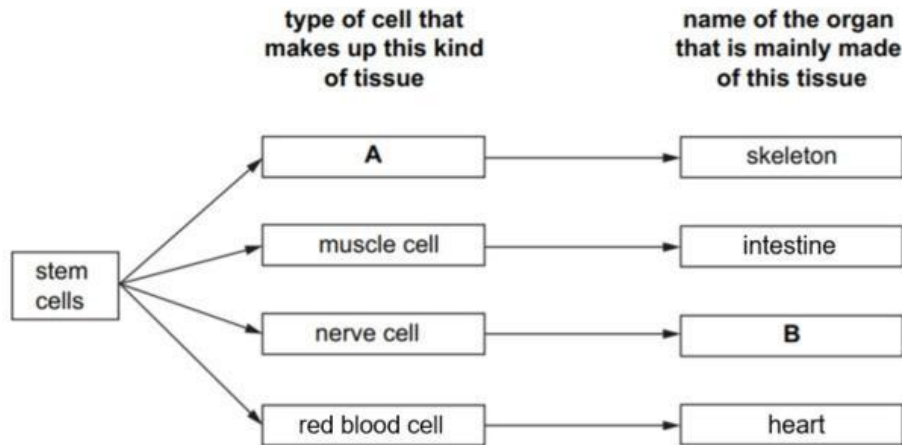
Name of blood cell: _____

Function: _____

[2 marks]

[Total: 6 marks]

- 12** Stem cells are able to turn into many other types of cells that form different tissues. Different tissues are then used to build organs. This is shown in the diagram below.



- (a) Name cell A.

[1 mark]

- (b) Name organ B.

[1 mark]

- (c) Name an organelle that appears in nerve cell, but not in red blood cell.

[1 mark]

- (d) What is the function of organelle in 12 (c).

[1 marks]

- (e) When a group of organs work together to carry out a specific function, they will form an organ system. Name the **organ system** and state its **function**, that is formed by intestines, along with other organs.

Organ system: _____

Function: _____

[2 marks]

[Total: 6 marks]

- 13 You will use a key in to identify the species of tree from which each of these leaves has been collected.

Figure 13.1 are the images of the leaves collected.

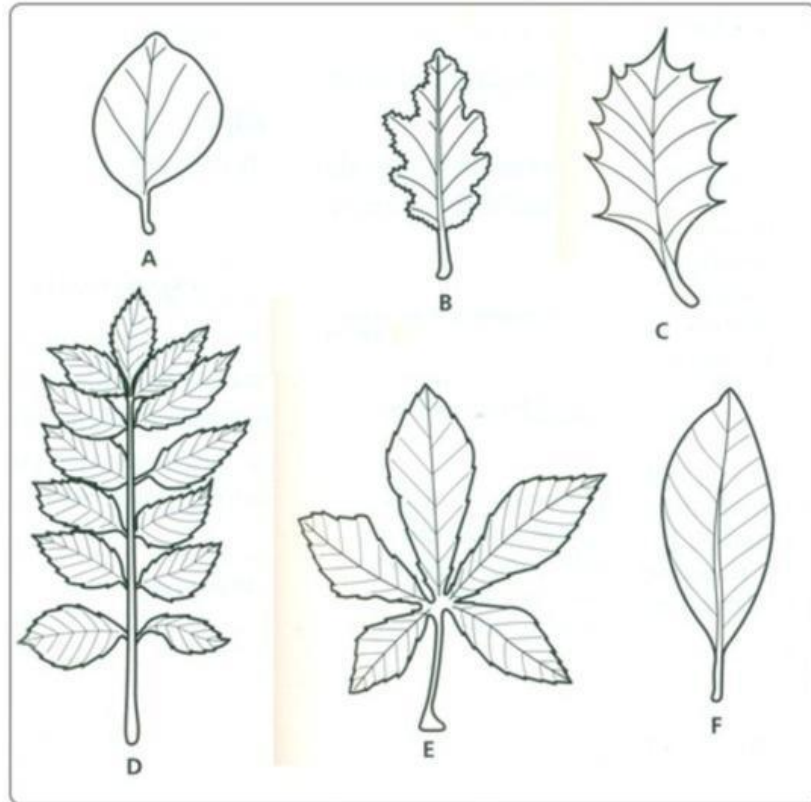


Figure 13.1

Key:

1	a	Leaf with smooth outline	go to 2
	b	Leaf with jagged outline	go to 3
2	a	Leaf about same length as width	<i>Cydonia</i>
	b	Leaf about twice as long as it is wide	<i>Magnolia</i>
3	a	Leaf divided into more than two parts	go to 4
	b	Leaf not divided into more than two parts	go to 5
4	a	Leaf divided into five parts	<i>Aesculus</i>
	b	Leaf divided into ten or more parts	<i>Fraxinus</i>
5	a	Leaf with pointed spines along its edge	<i>Ilex</i>
	b	Leaf with round lobes along its edge	<i>Quercus</i>

(a) Use the key to identify leaf E

Leaf E is _____

- (b) Identify each of the other leaves, and write down the statements, in order, that led you to each answer.

[10 marks]

[Total: 11 marks]

END OF QUESTION PAPER

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