

# PRINCIPLES OF ORGANISATION / QUESTIONS

## Q1.

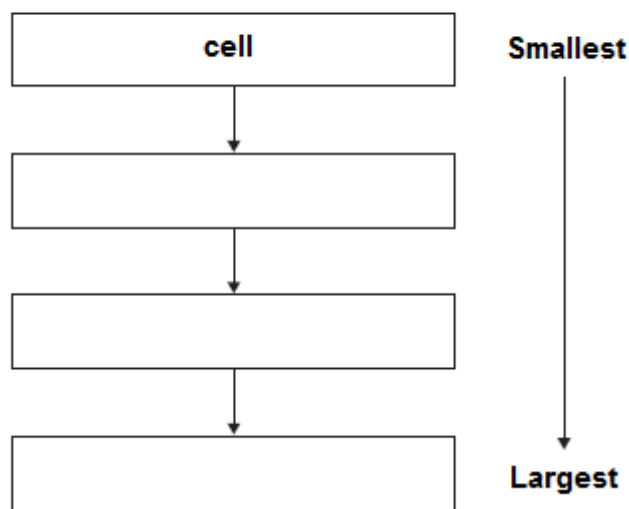
The human body is organised to carry out many different functions.

- (a) Use words from the box to complete **Figure 1** by putting the parts of the body in order of size from smallest to largest.

The smallest one has been done for you.

<b>cell</b>	<b>organ system</b>	<b>organ</b>	<b>tissue</b>
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**Figure 1**



(2)

- (b) The stomach is made of different types of tissue.

Draw **one** line from each type of stomach tissue to the correct description.

Epithelial tissue	Allows food to be churned around the stomach
Glandular tissue	Covers the outside and the inside of the stomach
Muscular tissue	Produces digestive juices
	Coordinates nerve impulses

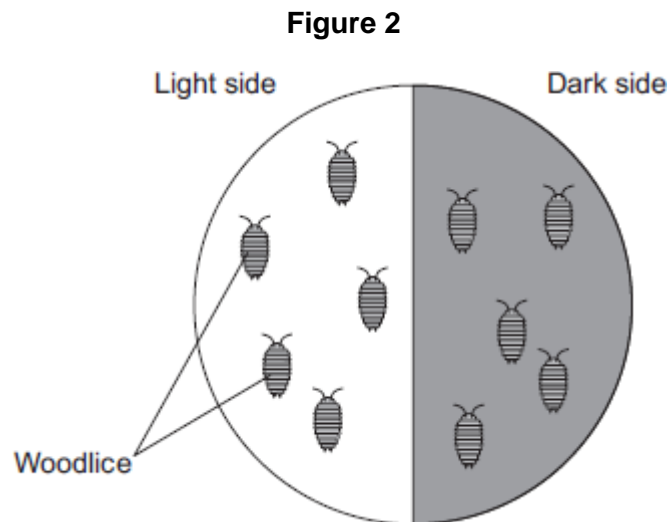
(3)

- (c) Animals can react to their surroundings because they have nervous systems.

A student investigated the behaviour of small animals called woodlice.

The student set up the investigation as shown in **Figure 2**.

- The student covered one half of a Petri dish with black paper to make that side of the Petri dish dark.
- The other side had no cover.
- The student put five woodlice into each side of the dish and then put the clear Petri dish lid back on the dish.



After 30 minutes, all the woodlice had moved to the dark side of the Petri dish.

- (i) In this investigation, what is the **stimulus** that the woodlice responded to?

\_\_\_\_\_ (1)

- (ii) In this investigation, what is the **response** that the woodlice made?

\_\_\_\_\_ (1)

- (iii) The student concluded that woodlice prefer dark conditions.

Give **two** ways in which the student could improve the investigation to be sure that his conclusion was correct.

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

\_\_\_\_\_

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

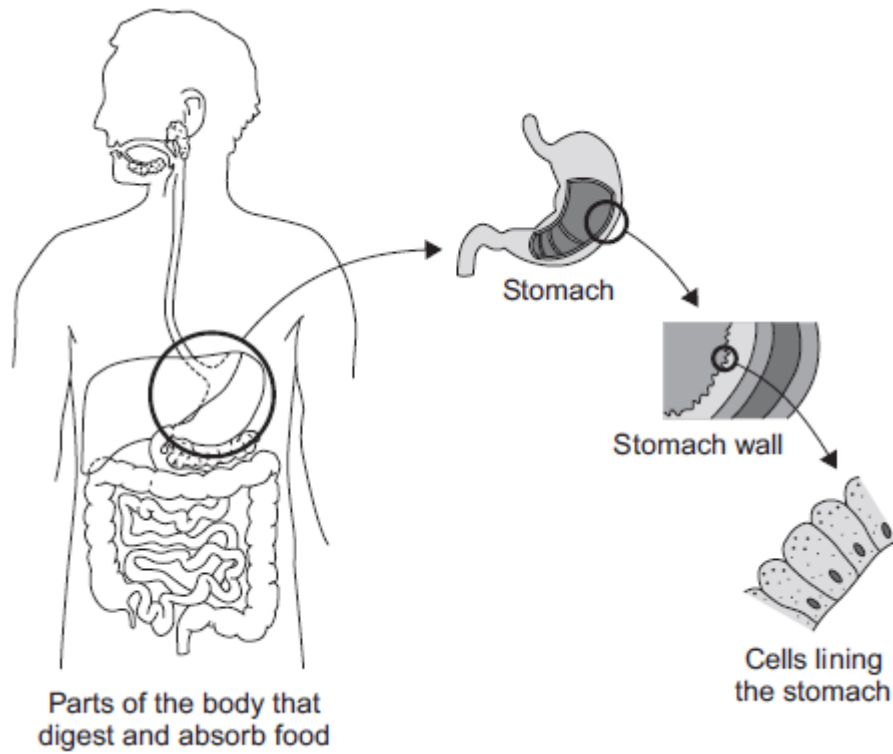
\_\_\_\_\_

(2)  
(Total 9 marks)

**Q2.**

The diagram below shows the parts of the body that digest and absorb food.

It also shows some details about the structure of the stomach.



- (a) Complete the table to show whether each structure is an organ, an organ system or a tissue.

For each structure, tick (✓) **one** box.

Structure	Organ	Organ system	Tissue
Stomach			
Cells lining the stomach			
Mouth, oesophagus, stomach, liver, pancreas, small and large intestine			

(2)

- (b) (i) The blood going to the stomach has a high concentration of oxygen. The cells lining the stomach have a low concentration of oxygen.

Complete the following sentence.

Oxygen moves from the blood to the cells lining the stomach by the process of \_\_\_\_\_.

(1)

- (ii) What other substance must move from the blood to the cells lining the stomach so that respiration can take place?

Draw a ring around the correct answer.

**glucose      protein      starch**

(1)

(iii) In which part of a cell does aerobic respiration take place?

Draw a ring around the correct answer.

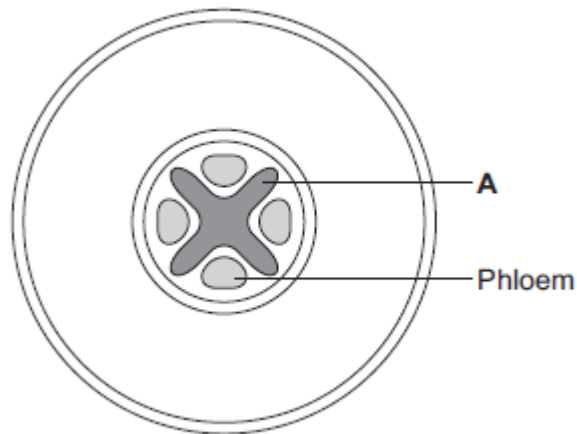
**cell membrane      mitochondria      nucleus**

(1)

(Total 5 marks)

**Q3.**

The diagram below shows a cross-section of a plant root. The transport tissues are labelled.



(a) (i) What is tissue **A**?

Draw a ring around the correct answer.

**cuticle      epidermis      xylem**

(1)

(ii) Name **two** substances transported by tissue **A**.

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

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

(2)

(b) Phloem is involved in a process called translocation.

(i) What is translocation?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(1)

(ii) Explain why translocation is important to plants.

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(2)

(c) Plants must use active transport to move some substances from the soil into root hair cells.

(i) Active transport needs energy.

Which part of the cell releases most of this energy?

Tick (✓) **one** box.

mitochondria

nucleus

ribosome

(1)

(ii) Explain why active transport is necessary in root hair cells.

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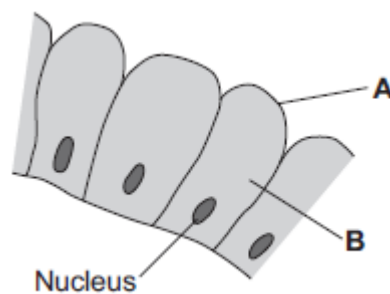
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(2)

(Total 9 marks)

**Q4.**

The image below shows some cells in the lining of the stomach.



- (a) (i) Use words from the box to name structures **A** and **B**.

cell membrane	chloroplast	cytoplasm	vacuole
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**A** \_\_\_\_\_

**B** \_\_\_\_\_

(2)

- (ii) What is the function of the nucleus?

Tick (✓) **one** box.

To control the activities of the cell

To control movement of substances into and out of the cell

To release energy in respiration

(1)

- (b) Draw **one** line from each part of the human body to its correct scientific name.

**Part of human body**

**Scientific name**

Layer of cells lining the stomach

An organ

Stomach

An organism

Mouth, stomach, intestines, liver and pancreas

An organ system

A tissue

(3)

(Total 6 marks)