

Animal Tissues, Organs and Organ Systems

Question Paper 1

Level	GCSE (9-1)
Subject	Combined Science: Trilogy - Biology
Exam Board	AQA
Topic	4.2 Organisation
Sub-Topic	Animal Tissues, Organs and Organ Systems
Difficulty Level	Bronze Level
Booklet	Question Paper 1

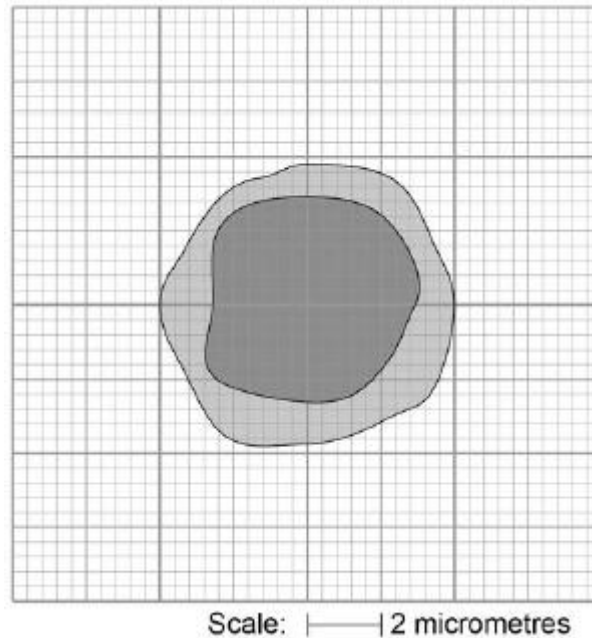
Time Allowed: 60 minutes

Score: /57

Percentage: /100

Grade Boundaries:

Q1. The figure below shows a scale drawing of one type of cell in blood.



- (a) Use the scale to determine the width of the cell.

Give your answer to the nearest micrometre.

.....

Width of cell = micrometres

(1)

- (b) Complete the table below.

Part of the blood	Function
	Carries oxygen around the body
	Protects the body against infection
Plasma	

(3)

- (c) Platelets are fragments of cells.

Platelets help the blood to clot.

Suggest what might happen if the blood did **not** clot.

.....

.....

(1)
(Total 5 marks)

Q2.When an organism grows, new cells are produced by cell division.

- (a) What type of cell division happens to produce new body cells?

Tick **one** box.

Differentiation

☐

Meiosis

☐

Mitosis

☐

(1)

- (b) Why can cancers grow very large?

Tick **one** box.

Cancer cells are specialised

☐

Cell division is slow

☐

Cell division is uncontrolled

☐

(1)

- (c) Give **one** factor which increases the risk of getting cancer.

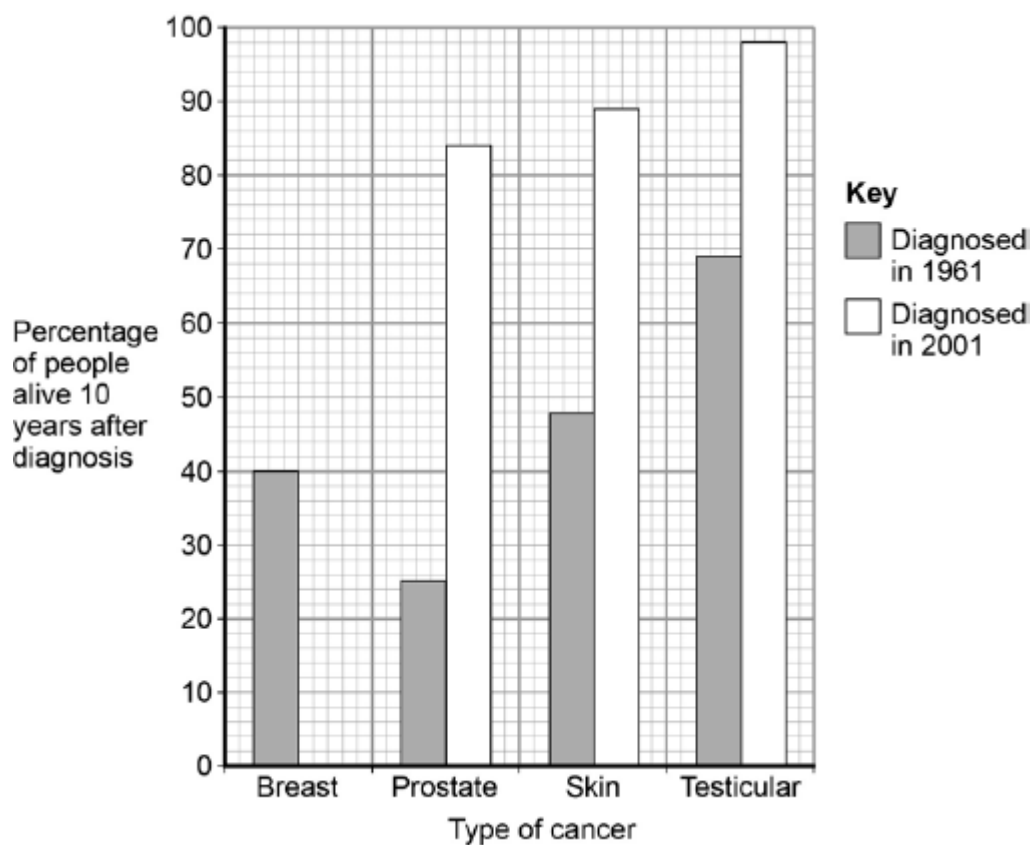
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(1)

- (d) Survival rates for people with cancer have improved a lot.

People who are alive 10 years after diagnosis are usually considered to be cured.

The figure below shows data for people diagnosed with cancer in 1961 and 2001.



78% of people diagnosed with breast cancer in 2001 were alive 10 years later.

Complete the figure above to show this information.

(1)

- (e) Which type of cancer diagnosed in 1961 had the highest survival rate?

Tick **one** box.

Breast

☐

Prostate

☐

Skin

☐

Testicular

☐

(1)

- (f) Which type of cancer shows the biggest improvement in the percentage of people alive after 10 years?

Tick **one** box.

Breast

☐

Prostate

☐

Skin

☐

Testicular

☐

(1)

- (g) Suggest **two** reasons why the survival rates for all cancers have increased.

1

.....

2

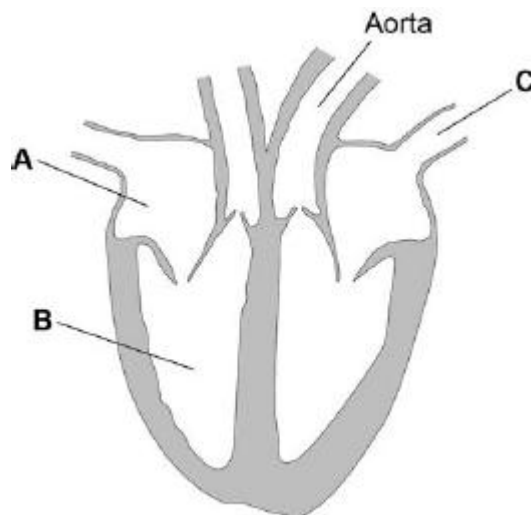
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(2)

(Total 8 marks)

Q3.Figure 1 shows a diagram of the human heart.

Figure 1



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

A

B

(2)

- (b) What is the function of blood vessel **C**?

Tick **one** box.

To take blood from the heart around the body

☐

To take blood from the body to the heart

☐

To take blood from the heart to the lungs

☐

To take blood from the lungs to the heart

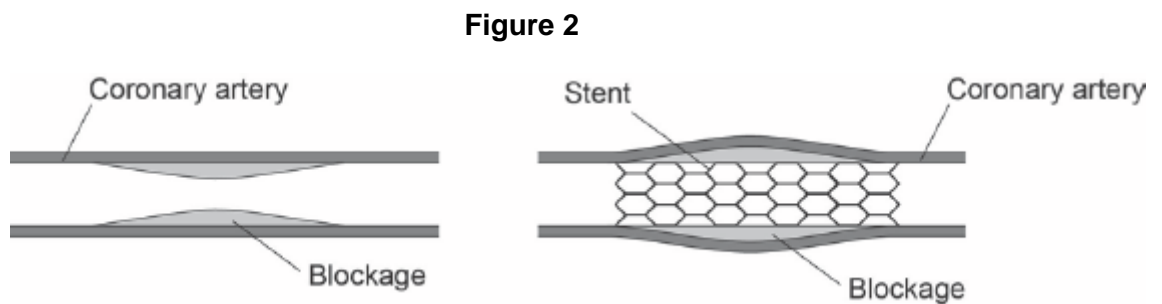
☐

(1)

- (c) Coronary heart disease (CHD) develops when layers of fatty material build up in the coronary artery.

One treatment for CHD is to insert a stent into the coronary artery.

Figure 2 shows a stent in a coronary artery.



Explain why the stent helps to prevent a heart attack.

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(4)

- (d) Look at the table below.

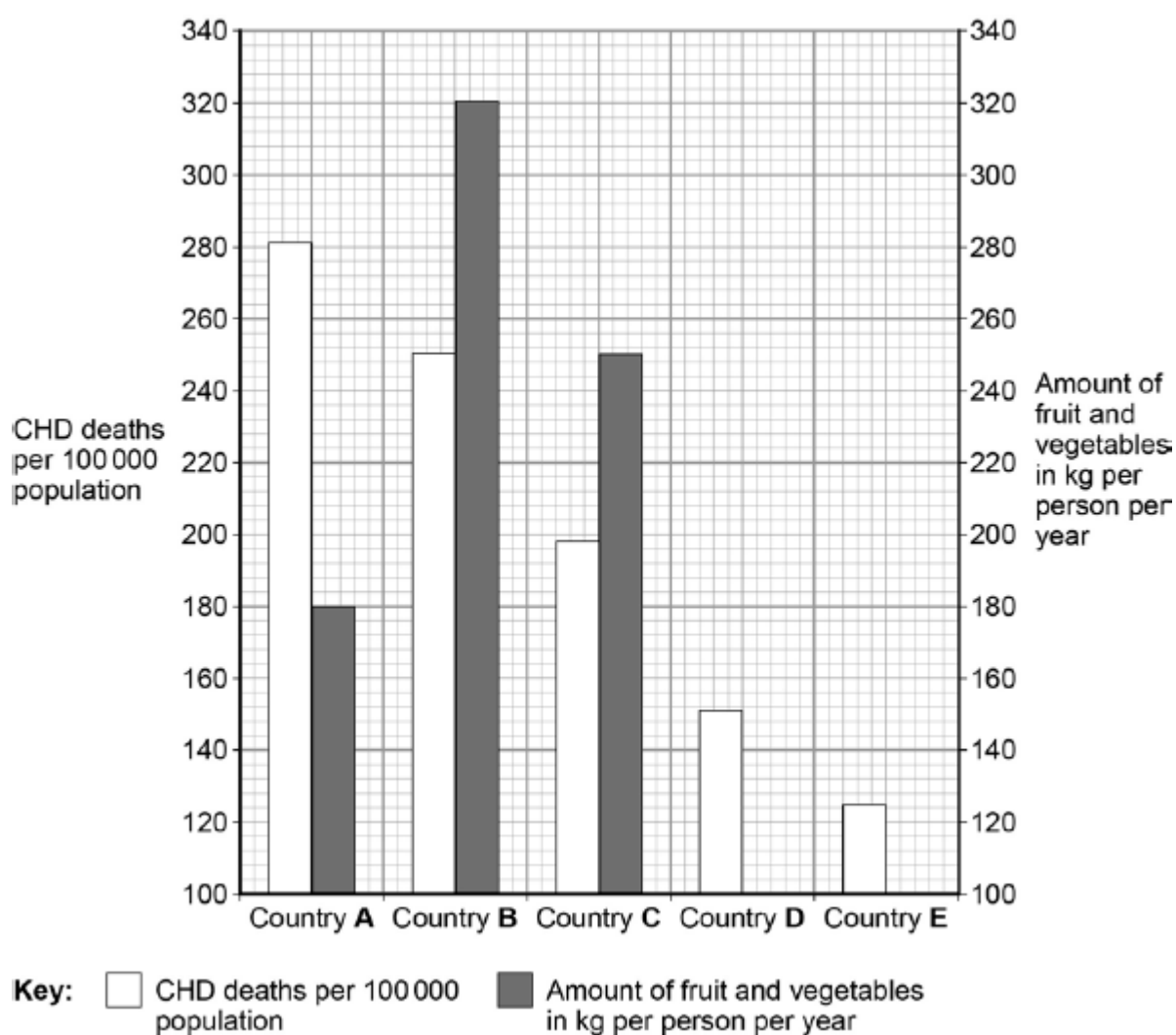
Country	Number of deaths from CHD per 100 000 population per year	Amount of fruit and vegetables eaten in kg per person per year
A	285	180
B	250	320
C	198	250

D	151	220
E	125	244

Plot the missing bars for countries **D** and **E** on **Figure 3**.

Use data from the table above.

Figure 3



(2)

- (e) People in country **B** are more likely to die from CHD than people in country **E**.

How many more times as likely are people to die from CHD in country **B** than in country **E**?

.....

(1)

- (f) A student concluded:

‘The factor that causes CHD is not eating enough fruit and vegetables.’

Evaluate the student’s conclusion.

Use data from **Figure 3**, and your own knowledge, in your answer.

.....

.....

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.....

.....

(6)
(Total 16 marks)

Q4. Blood sugar levels in the body are controlled by insulin.

- (a) How does insulin travel around the body?

.....

.....

(1)

- (b) The table below shows the blood sugar levels for two people after eating a meal.

Time after eating in hours	Blood sugar levels in mg per 100 cm ³ of blood
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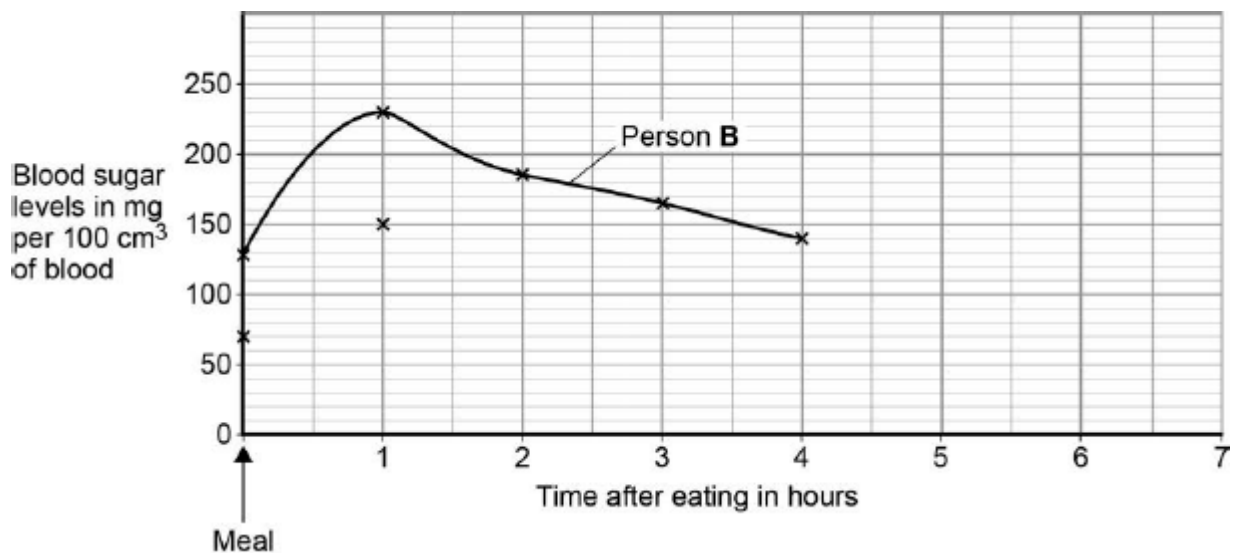
	Person A	Person B
0	70	130
1	150	230
2	90	185
3	80	165
4	75	140

Use data from the table above to complete the graph in the figure below.

Plot the points for person **A**.

The first two points have been plotted for you.

Draw a line through all the points.



(3)

- (c) How long after the meal is person **B**'s insulin production at its peak?

.....

(1)

- (d) What is the greatest **decrease** in the blood sugar level of person **B** in an hour?

.....

.....
.....

Decrease = mg per 100 cm³

(2)

- (e) Estimate how long after eating the meal it will take for person **B**'s blood sugar level to return to the level before the meal.

Show your working on the figure above.

.....
.....

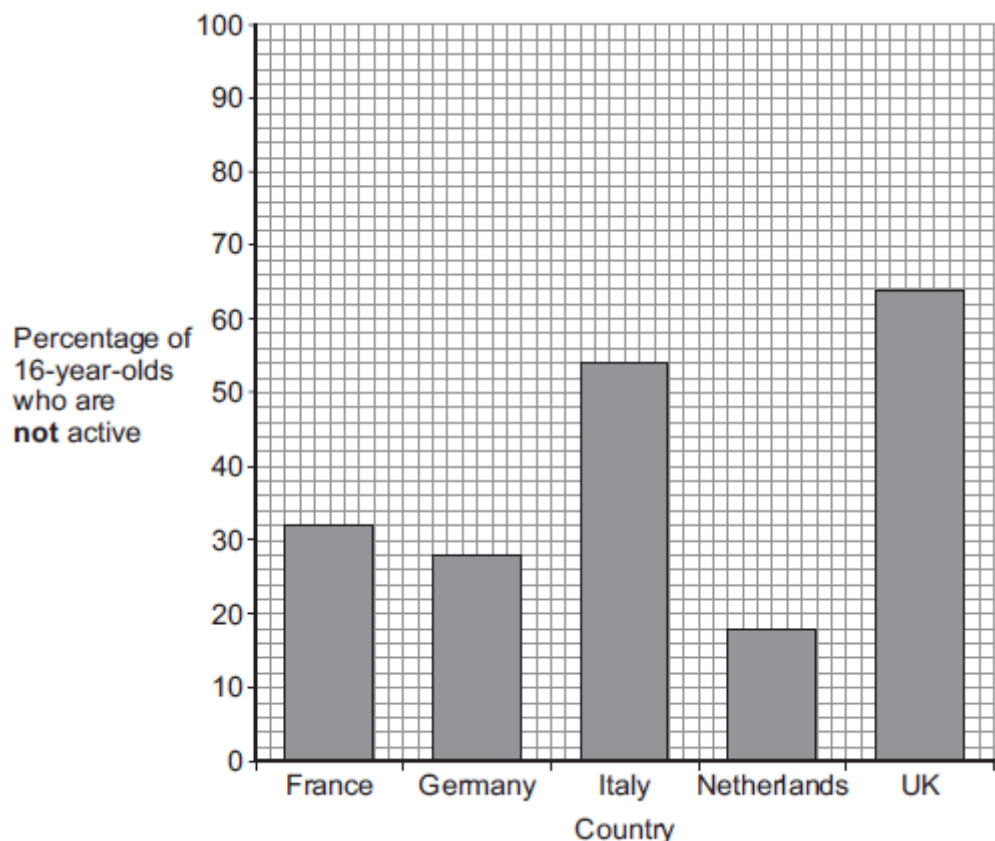
(2)

(Total 9 marks)

Q5. Scientists investigated the effect of different factors on health.

- (a) People who are **not** active may have health problems.

The graph shows the percentage of 16-year-olds in some countries who are **not** active.



- (i) What percentage of 16-year-olds in the UK are **not** active?

..... %

(1)

- (ii) What percentage of 16-year-olds in the UK are **active**?

..... %

(1)

- (iii) A newspaper headline states:

People in the UK are the laziest in the world.

Information in **Figure 1** does **not** support the newspaper headline.

Suggest **one** reason why the newspaper headline may be wrong.

.....

(1)

- (b) Doctors gave a percentage rating to the health of 16-year-olds.

100% is perfect health.

The table shows the amount of exercise 16-year-olds do and their health rating.

Amount of exercise done in minutes every week	Health rating as %
Less than 30	72
90	76
180	82
300	92

What conclusion can be made about the effect of exercise on health?

Use information from the table.

.....

.....

(1)

- (c) Inherited factors can also affect health.

Give **one** health problem that may be affected by the genes someone inherits.

Draw a ring around the correct answer.

**being
malnourished**

**having a high
cholesterol level**

**having a
deficiency disease**

(1)

- (d) White blood cells are part of the immune system.

Use the correct answer from the box to complete each sentence.

antibiotics	antibodies	pathogens	vaccines
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- (i) When we are ill, white blood cells produce to kill microorganisms.

(1)

- (ii) Many strains of bacteria, including MRSA, have developed resistance to drugs called

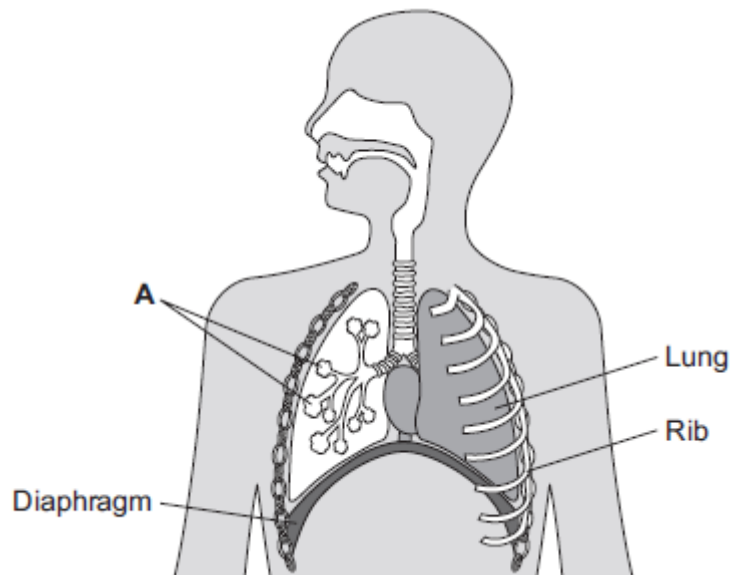
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(1)

(Total 7 marks)

Q6.Our lungs help us to breathe.

The image below shows the human breathing system.



- (a) (i) Name part **A**.

.....

(1)

- (ii) Give **one** function of the ribs.

.....

(1)

- (b) (i) Use the correct answer from the box to complete the sentence.

active transport

diffusion

osmosis

Oxygen moves from the air inside the lungs into the blood by the process of

(1)

(ii) Use the correct answer from the box to complete the sentence.

arteries	capillaries	veins
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Oxygen moves from the lungs into the blood through the walls of the

(1)

(iii) Inside the lungs, oxygen is absorbed from the air into the blood.

Give **two** adaptations of the lungs that help the rapid absorption of oxygen into the blood.

1

.....

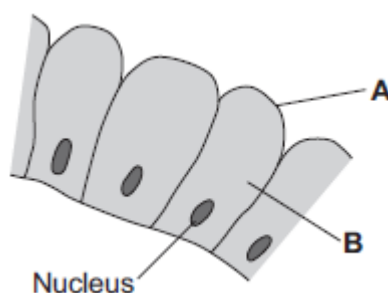
2

.....

(2)

(Total 6 marks)

Q7. 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

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

An organ system

Mouth, stomach, intestines,
liver and pancreas

A tissue

(3)
(Total 6 marks)