

# MARK SCHEME

# GCSE

## BIOLOGY

## AQA - TRIPLE SCIENCE

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B 2 - TEST 2  
ORGANISATION  
Beginner

## Mark schemes

1.

(a) in sequence:

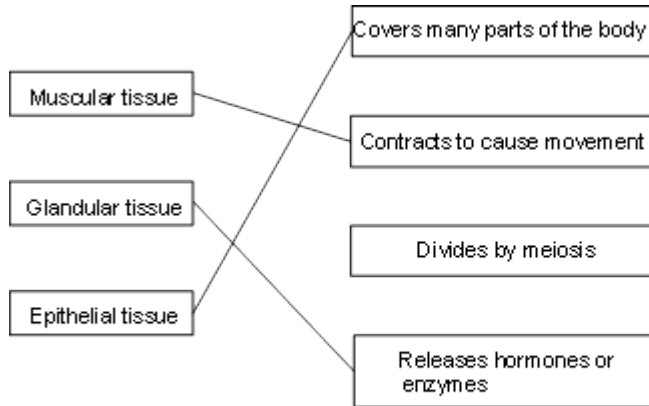
2 = tissue(s)

3 = organ(s)

4 = system(s)

1

(b)



*1 mark for each correct line  
extra line(s) from one tissue cancel*

3

[4]

2.

(a) (i) a catalyst

1

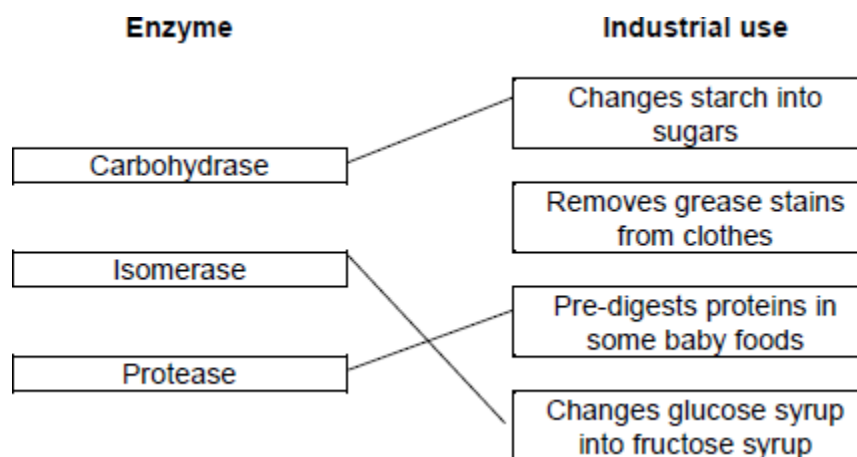
(ii) protein

1

(iii) salivary glands

1

(b)



extra lines from any enzyme cancels that mark

3

[6]

3.

(a) (i) wind

1

temperature

*answers in either order*

*ignore weather*

1

(ii) different plants have different sizes / different numbers of leaves / different sizes of leaves / different plants take up different amounts of water

*ignore reference to validity*

*allow different plants need*

*different amounts of water*

1

(b) in table, in sequence:

C

*all 3 correct = 2 marks*

B

A

*all 3 correct = 2 marks*

*2 correct = 1 mark*

*0 or 1 correct = 0 mark*

2

(c) transpiration

1

[6]

<b>4.</b>	<p>(a) (i) alveoli / alveolus <i>allow air sacs</i> <i>allow phonetic spelling</i></p>	1
	<p>(ii) any <b>one</b> from:</p> <ul style="list-style-type: none"> <li>• protection (of lungs / heart)</li> <li>• help you breathe / inflate lungs.</li> </ul>	1
	<p>(b) (i) diffusion</p>	1
	<p>(ii) capillaries</p>	1
	<p>(iii) any <b>two</b> from:</p> <ul style="list-style-type: none"> <li>• (have many) alveoli <i>allow air sacs</i></li> <li>• large surface / area</li> <li>• thin (exchange) surface <b>or</b> short diffusion pathway <i>accept only one / two cell(s) thick</i></li> <li>• good blood supply / many capillaries <i>allow (kept) ventilated or maintained concentration gradient.</i></li> </ul>	2
		<b>[6]</b>
<b>5.</b>	<p>(a) (i) wind <i>answers in either order</i></p>	1
	<p>temperature <i>ignore weather</i></p>	1
	<p>(ii) different plants have different sizes <i>ignore reference to validity</i></p> <p>/ different numbers of leaves / different sizes of leaves / different plants take up different amounts of water / different number of stomata / different surface area <i>allow different plants need different amounts of water</i></p>	1

(b) in table, in sequence:

C  
B  
A

*all 3 correct = 2 marks*  
*2 correct = 1 mark*  
*0 or 1 correct = 0 marks*

max 2

(c) transpiration

1

[6]

6.

(a) A artery

*allow aorta*

1

B ventricle

*ignore references to left and right*

1

C atrium

*ignore references to left and right*  
*allow atria*

1

D vein

*allow vena cava*

1

(b) (i) stent

1

(ii) keeps (artery) open

1

so (more) blood can flow through

*allow blood can flow (more) easily*  
*ignore ref to blood clots*

1

[7]

7.

(a) to show the experiment was more repeatable

1

(b) (circle) 0.0 at 20 °C

1

(c) ignored it / did not use it

*ignore repeated it*

1

- (d) increases the rate of reaction up to 30 °C 1
- (e) 60 °C 1
- (f) do the experiment at 30 °C, 35 °C and 40 °C 1

(g) **Level 2 (3–4 marks):**

A detailed and coherent plan covering all the major steps is provided. The method is set out logically taking into account control variable and appropriate measurements. The plan could be repeated by another person to determine the effect of pH on breakdown of starch by amylase.

**Level 1 (1–2 marks):**

Simple statements relating to relevant apparatus or steps are made but they may not be in a logical order. The plan would not allow another person to determine the effect of pH on breakdown of starch by amylase.

**0 marks:**

No relevant content.

**Indicative content**

- range of at least 3 pH values / use of buffer solutions
- control variables / keep amount or concentration of starch and amylase the same
- keep temperature the same using water bath / electric heater
- use iodine test to make qualitative observations
- observe colour changes at different temperatures
- do repeats at each pH

4

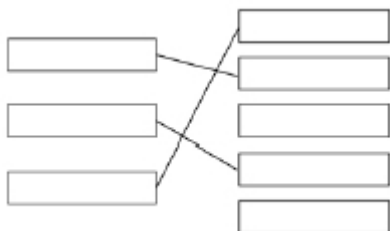
[10]

8.

- (a) (A) bronchus 1  
*allow bronchi*  
*allow bronchiole*
- (B) trachea 1  
*allow windpipe*
- (C) alveolus 1  
*allow alveoli*  
*ignore air sac*
- (b) circulatory system 1
- (c) Q 1
- (d) guard cell 1

(e) a group of cells with a similar structure / function

1



(f)

1 mark for each correct line

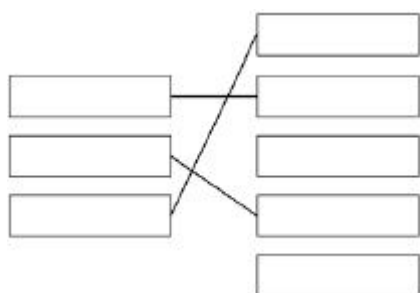
extra line from a tissue negates the mark for that tissue

3

[10]

9.

(a)



additional line from a blood component negates the mark for that component

1  
1  
1

(b) C

1

(c) (vessel) B

thick walls **or** thick muscle / elastic tissue

do **not** accept ref to 'cell walls'

1

**or**

lumen is small / narrow

allow description of 'lumen'

1

(d) 95

1

(e) (because coronary) arteries / they are narrower

allow (because the coronary) arteries are blocked / clogged (with fat)

1

(f)  $250 \times 60 (= 15\,000)$

**or**

15 000

*allow  $0.25 \times 60$*

1

15

*allow  $\frac{\text{answer to marking point 1}}{1000}$*

*an incorrect conversion to  $\text{dm}^3$  in calculation does not negate marking point 1*

1

*an answer of 15 scores 2 marks*

(g) any **two** from:

- no need to stay as long in hospital (after procedure) **or** can go home sooner / same day

*allow only need to stay 2–3 hours in hospital (after procedure)*

*allow less scarring*

*allow less chance of infection*

*allow only a small cut needed*

- not as / less invasive **or** no need for a major operation **or** no need for general anaesthetic
- shorter recovery time **or** can get back to normal lifestyle quicker **or** less time needed off work

*allow only 7 days recovery*

- lower risk of a heart attack (during procedure)

*ignore reference to cost*

*ignore idea that it takes less time overall*

2

(h) lower chance of failure (within one year)

*allow only a 5% chance of failure*

1

only need one operation to treat multiple blockages **or** can treat multiple blockages at one time

*ignore ref to anaesthetic or CABG being a long-term treatment*

1

[14]