

Name of the Student: \_\_\_\_\_

Max. Marks : 20 Marks

Time : 20 Minutes

Q1.

This question is about photosynthesis.

(a) What are the **two** products of photosynthesis?

Tick **two** boxes.

Carbon dioxide

☐

Chlorophyll

☐

Glucose

☐

Oxygen

☐

Water

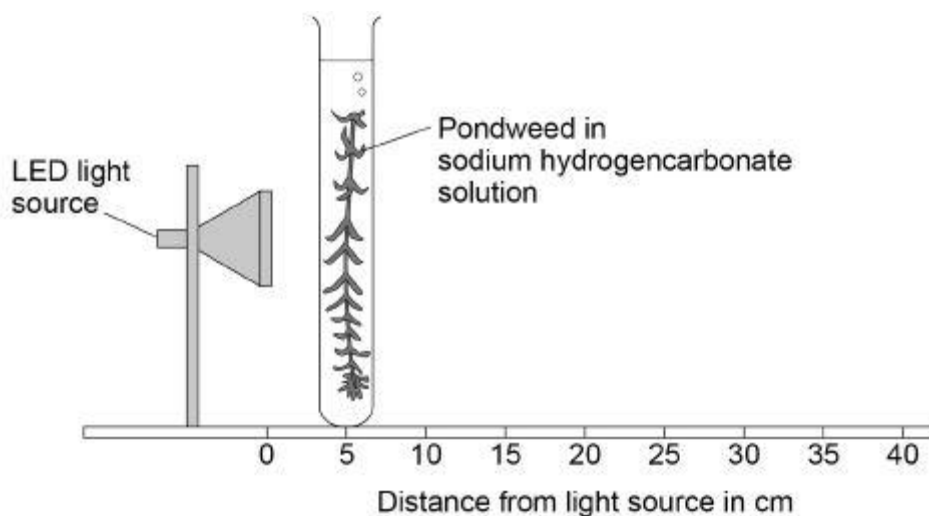
☐

(2)

A student investigated the effect of light intensity on the rate of photosynthesis.

**Figure 1** shows the apparatus.

**Figure 1**



This is the method used.

1. Place the pondweed at 5 cm from the light source.
2. Measure the rate of photosynthesis by counting the number of bubbles produced in 30 seconds.
3. Repeat the investigation with the pondweed at different distances from the light source.

(b) How could the student measure the rate of photosynthesis more accurately?

Tick **two** boxes.

Count the number of bubbles produced in 1 minute

☐

Measure the change in mass of the pondweed in 30 seconds

☐

Measure the volume of gas produced in 30 seconds

☐

Place the pondweed further from the light source

☐

Use water instead of sodium hydrogencarbonate solution

☐

(2)

(c) The LED light source does **not** get hot.

Why is this important?

---

---

---

(1)

The table below shows the student's results.

| Distance of light source from pondweed in cm | Number of bubbles produced in 30 seconds |
|----------------------------------------------|------------------------------------------|
| 5                                            | 40                                       |
| 10                                           | 13                                       |
| 15                                           | 5                                        |
| 20                                           | 2                                        |
| 25                                           | 1                                        |
| 30                                           | 0                                        |

(d) Calculate the number of bubbles produced in 2 minutes when the light source was 10 cm from the pondweed.

---

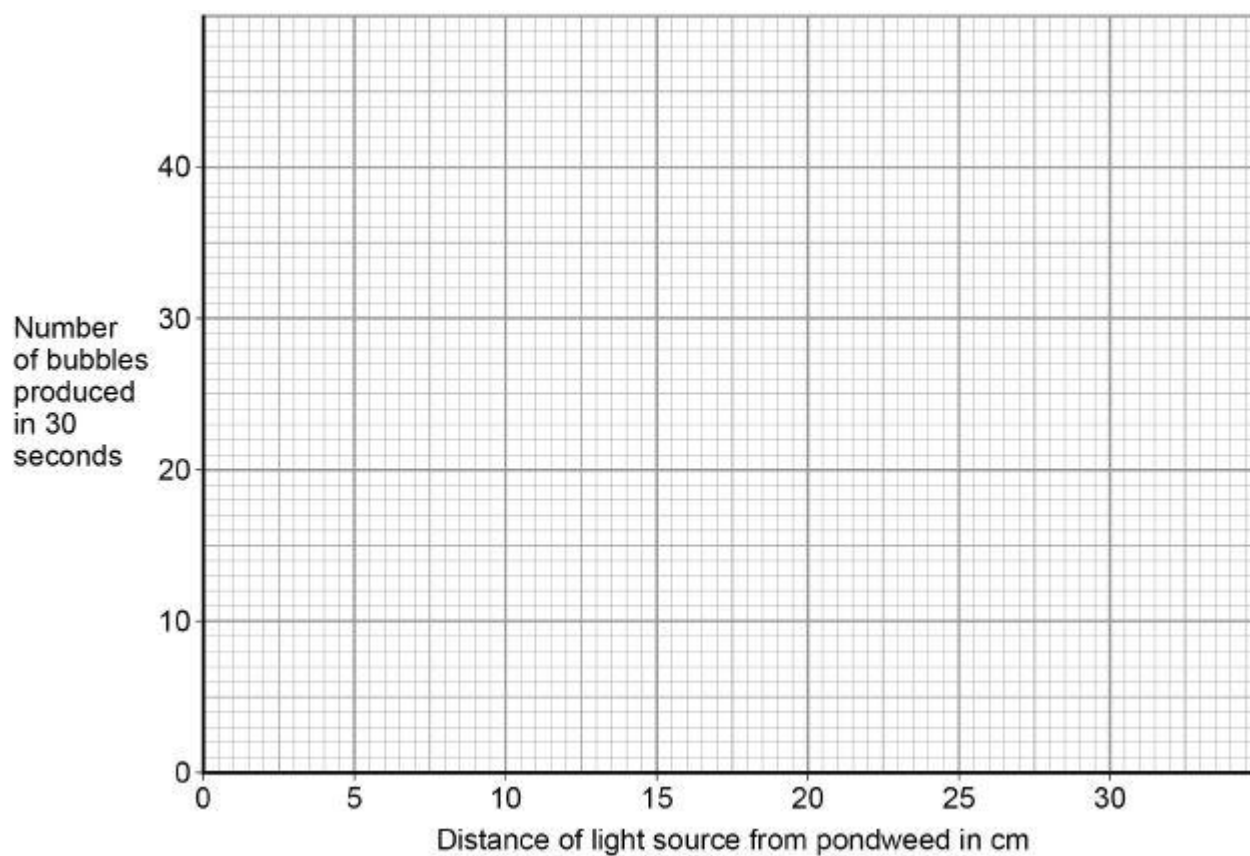
Number of bubbles produced in 2 minutes = \_\_\_\_\_

(1)

(e) Plot the data from the table above on **Figure 2**

Draw a line of best fit.

**Figure 2**



(3)

(f) Give **one** conclusion that can be made from these results.

---

---

(1)

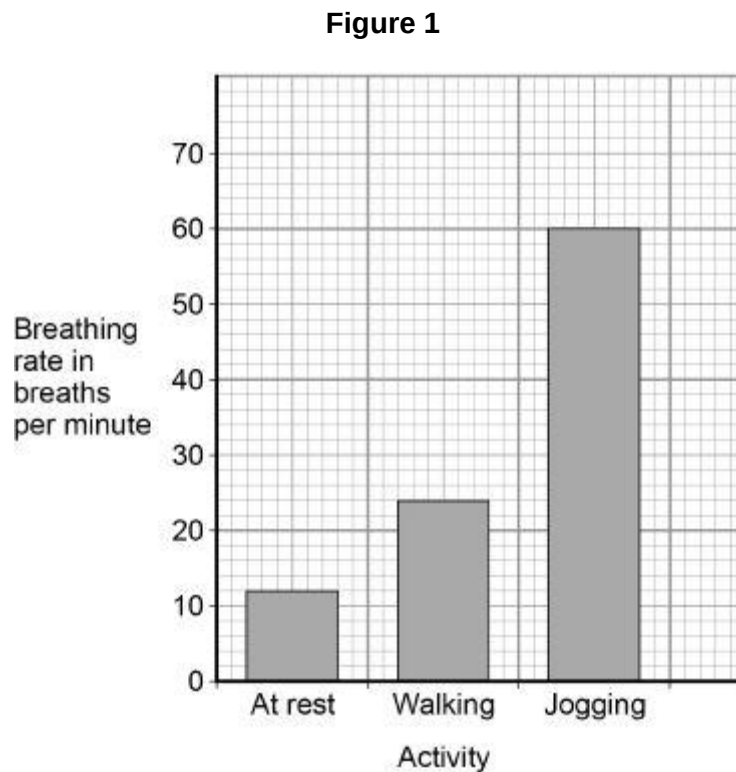
(Total 10 marks)

Q2.

Exercise can improve health.

A student measured her breathing rate at rest, when walking and when jogging.

**Figure 1** shows her results.



- (a) Compare the breathing rates when doing the **three** different activities.

Use values from **Figure 1** in your answer.

---

---

---

---

---

---

(3)

- (b) Explain why the breathing rate changes when doing different activities.

---

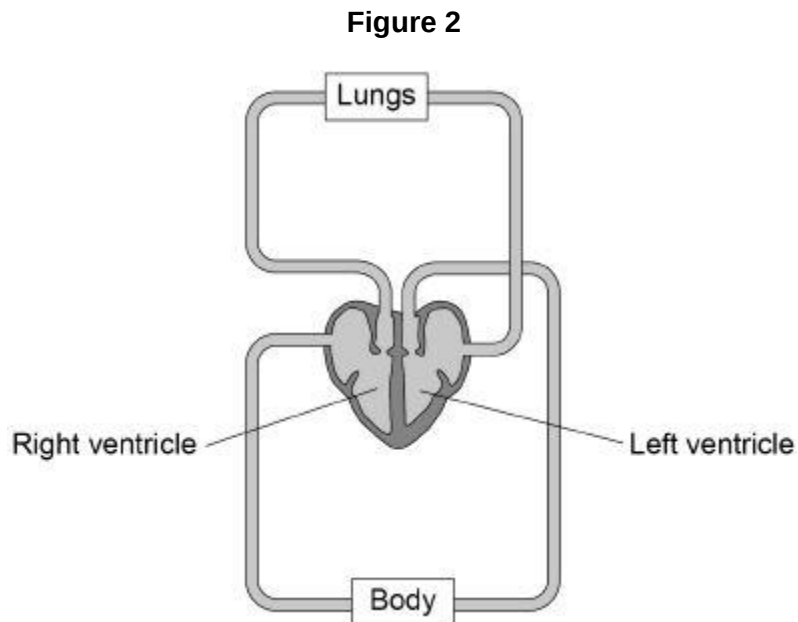
---

---

---

---

**Figure 2** shows the heart in the circulatory system.



- (c) The heart is a double pump.

Describe what this means.

Use **Figure 2** to help you.

---

---

---

---

(2)

- (d) The wall of the left ventricle is much thicker than the wall of the right ventricle.

Suggest **one** reason for this.

---

---

---

(1)

- (e) People are encouraged to exercise after recovering from a heart attack.

Suggest **one** reason why.

---

---

(1)

**(Total 10 marks)**