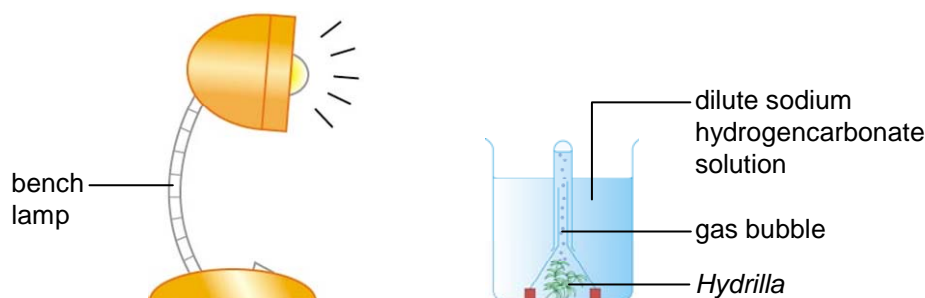


-- Question --

The diagram below shows a set-up for measuring the rate of photosynthesis of *Hydrilla* at 20 °C. *Hydrilla* was exposed to different light intensities and the rate of photosynthesis was estimated by counting the number of gas bubbles released per minute.



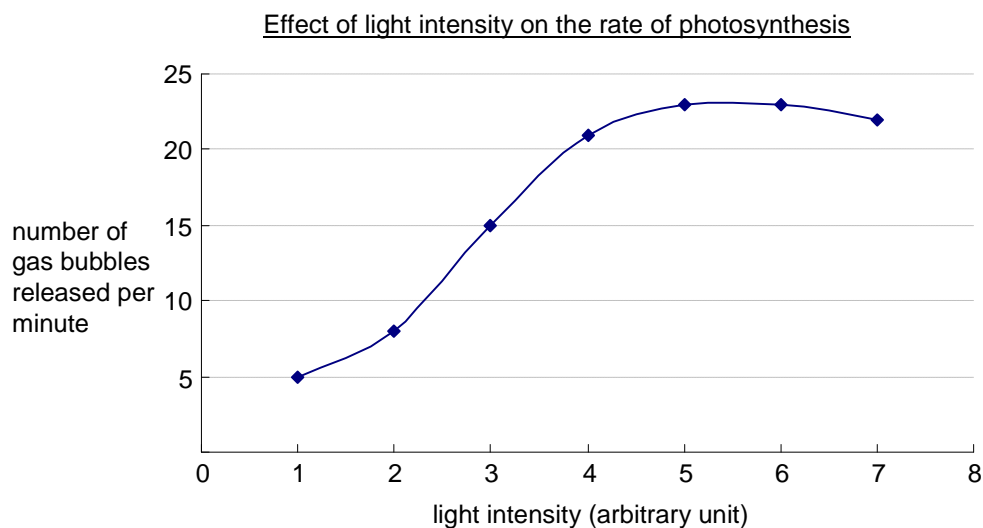
The results are summarized in the table below.

Light intensity (arbitrary unit)	1	2	3	4	5	6	7
Number of gas bubbles released per minute	5	8	15	21	23	23	22

- Plot the results on a graph. (4 marks)
- Describe and explain the results. (2 marks)
- Suggest a method for measuring the rate of photosynthesis that is more reliable than counting the number of gas bubbles. (1 mark)
- How would the rate of photosynthesis differ if the above experiment was carried out at 4 °C, 30 °C and 60 °C respectively? (3 marks)

-- Answer --

a



Correct title 1m

Choice of axes 1m

With labels and units 1m

Correct plotting and joining of line 1m

b At first, the rate of photosynthesis increased with light intensity because more energy was supplied to the photochemical reactions. 1m

Then the rate of photosynthesis was limited by other factors such as carbon dioxide concentration or temperature, therefore the rate became constant. 1m

c Collect the gas released using a graduated tube and record the volume of gas collected per unit time. 1m

d At 4 °C, the rate of photosynthesis would be lower. 1m

At 30 °C, the rate of photosynthesis would be higher. 1m

At 60 °C, the rate of photosynthesis would become zero. 1m