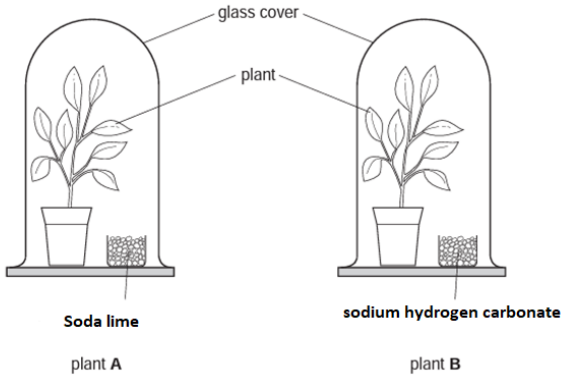
Kindly find the answers for the 1st month exam , pay attention to the command words and their meanings mentioned under each question .

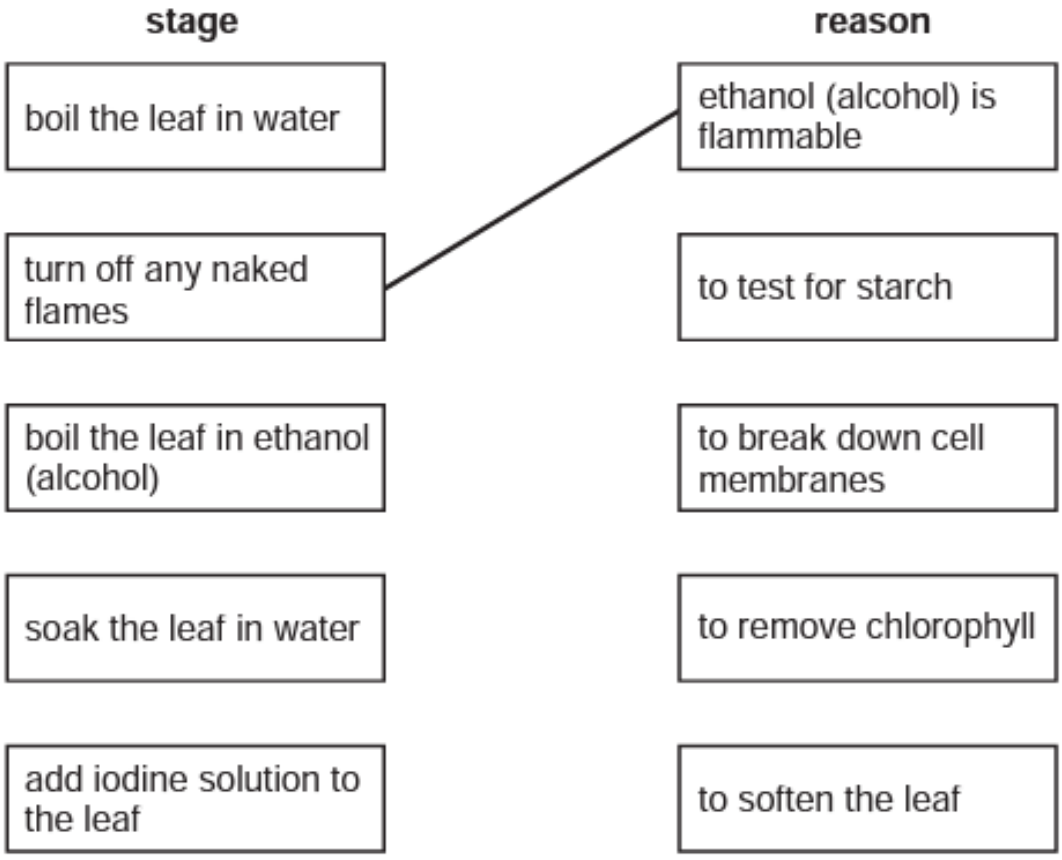
Question 1 *:* *(8 marks)*

An experiment was carried out to find out if carbon dioxide is needed for photosynthesis.

Stage 1	*Two plants, A and B, of the same size and species were kept in a dark place for 48 hours.*
Stage 2	*A leaf from each plant was then tested for the presence of starch using iodine solution, to show that destarching was complete.*
Stage 3	*Both plants were placed in sealed glass containers, for 24 hours, as shown in the figure below.* • *Plant A was in the presence of soda lime.* • *Plant B was in the presence of sodium hydrogen carbonate.* *All other conditions needed for photosynthesis were provided for both plants.*
Stage 4	*After 24 hours a leaf from each plant was* ***tested for the presence of starch .***



a. The stages involved in testing a leaf for starch are shown below. The stages are in the correct sequence, but the reasons are in the wrong order. Use straight lines to match the stages with the correct reasons. One has been done for you.



- Explain why the plants were destarched.

  Not to affect the results .

- Explain why chlorophyll is removed from the leaf before testing it for starch.
  To observe any change in color .

Explain	set out purposes or reasons / make the relationships between things evident / provide why and/or how and support with relevant evidence

- State two factors, other than carbon dioxide, that both plants would need in order to photosynthesize.

  Light / Chlorophyll / water

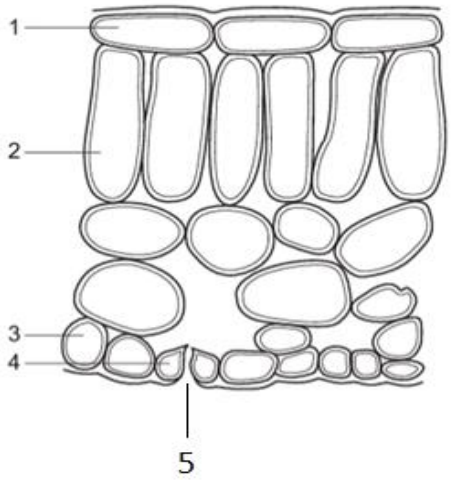
State	express in clear terms

Question 2 : *(7 marks)*

a. The diagram shows cells in a section through a leaf .

- Name parts :
  1: upper epidermis

  4 : guard cells



- In which cell most photosynthesis takes place.
  (choose the correct number)

  ……2……..

- Through which part does most of the water evaporates during transpiration .
  (choose the correct number)

……5……

- How do carbon dioxide and water enter the leaf .

  Carbon dioxide : through stomata

  Water: absorbed by the roots then transported through the stem .

b. Explain why plants can't photosynthesize at night.

There is no light , plants need light for photosynthesis .

c. How do plants store excess glucose .

Excess glucose is stored as starch .

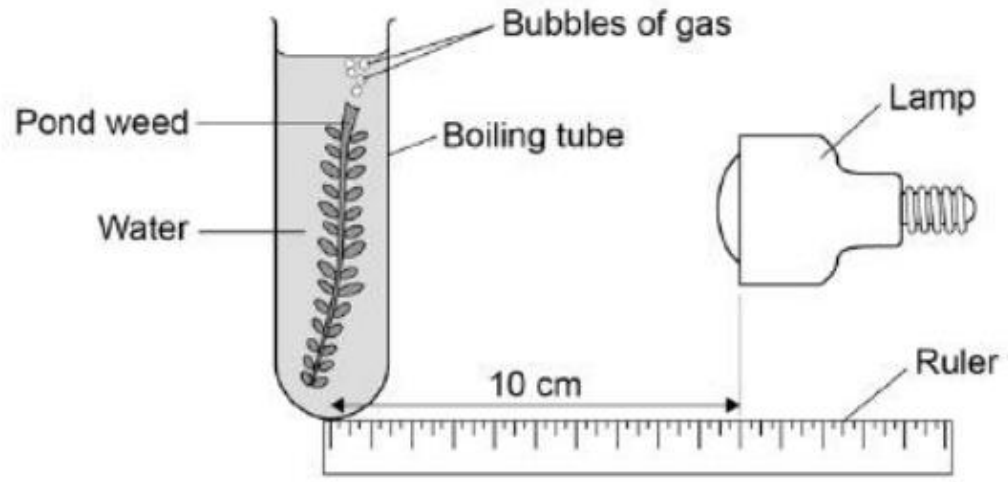
Question 3 : *(2 marks)*

Tick the correct boxes in the table below to compare between photosynthesis and respiration .(The first one has been done for you) .

	Photosynthesis	**Respiration**
Glucose is produced	✓	
Energy is stores	✓	
Light is needed	✓	
An exothermic reaction		✓

Question 4 : *(3 marks)*

A student investigated the effect of light intensity on the rate of photosynthesis. The diagram shows the apparatus the student used.



This is the method used.

1. Set up the apparatus as shown in the diagram above.

2. Place the lamp 10 cm from the pondweed.

3. Turn the lamp on and count the number of bubbles produced in one minute.

4. Repeat with the lamp at different distances from the pondweed.

a. Identify the gas being collected in the measuring cylinder which shows that pond weed is photosynthesizing.

Oxygen gas

Identify	name/select/recognise

b. Describe how the amount of carbon dioxide in the water was affected by the light intensity .

Amount of carbon dioxide will decrease with increasing light intensity .

c. Describe how this investigation could be changed to find the effect of temperature on the rate of photosynthesis.

By changing the temperature .

Describe	state the points of a topic / give characteristics and main features

Good Luck