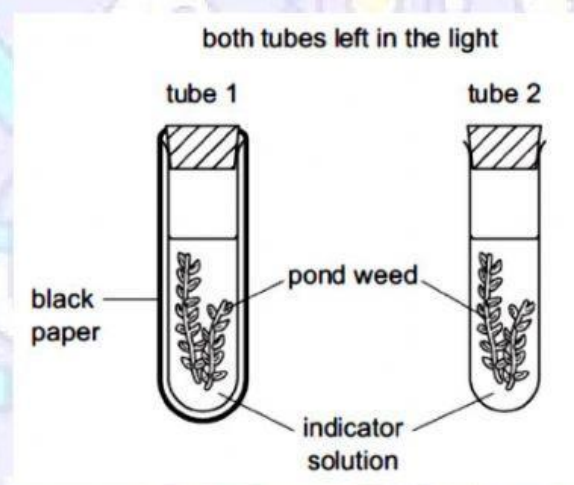


# TOPIC 3: PLANT NUTRITION & TRANSPORT

## EXERCISE 2

1. An indicator solution shows the following colour changes –
- normal carbon dioxide concentration : orange
  - high carbon dioxide concentration : yellow
  - low carbon dioxide concentration : purple

Consider the experiment represented by the diagram below. The indicator was orange in both tubes at the beginning of the experiment.

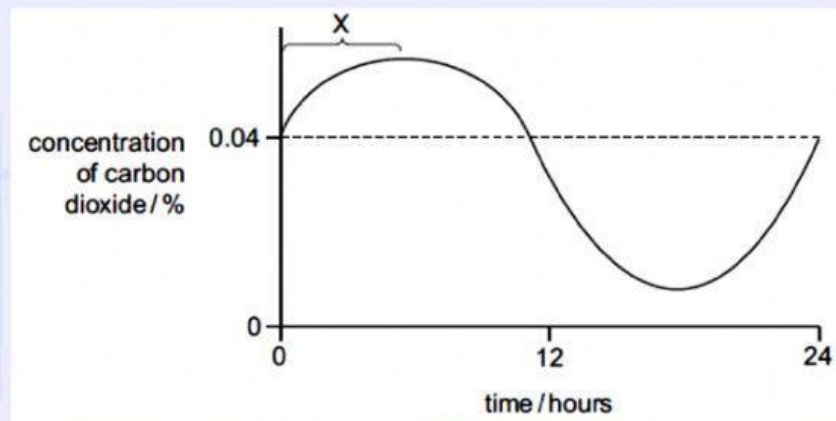


Which colours would the indicators be after three hours?

|          | tube 1 | tube 2 |
|----------|--------|--------|
| <b>A</b> | orange | yellow |
| <b>B</b> | purple | orange |
| <b>C</b> | purple | yellow |
| <b>D</b> | yellow | purple |



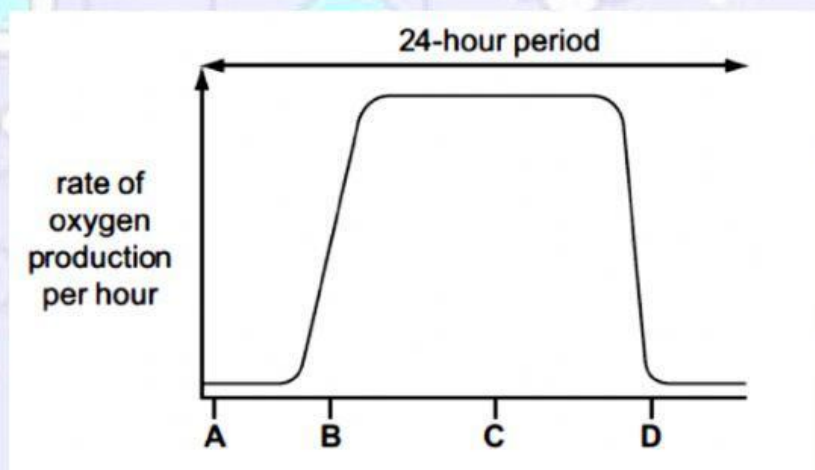
2. The graph shows the concentration of carbon dioxide in the air surrounding a plant measured over 24 hours.



What explains the change in carbon dioxide concentration at X?

|   | light intensity | plant process  |
|---|-----------------|----------------|
| A | darkness        | respiration    |
| B | darkness        | transpiration  |
| C | daylight        | photosynthesis |
| D | daylight        | respiration    |

3. The graph shows the rate of oxygen production by a green plant during a 24-hour period. Which letter represents midnight?



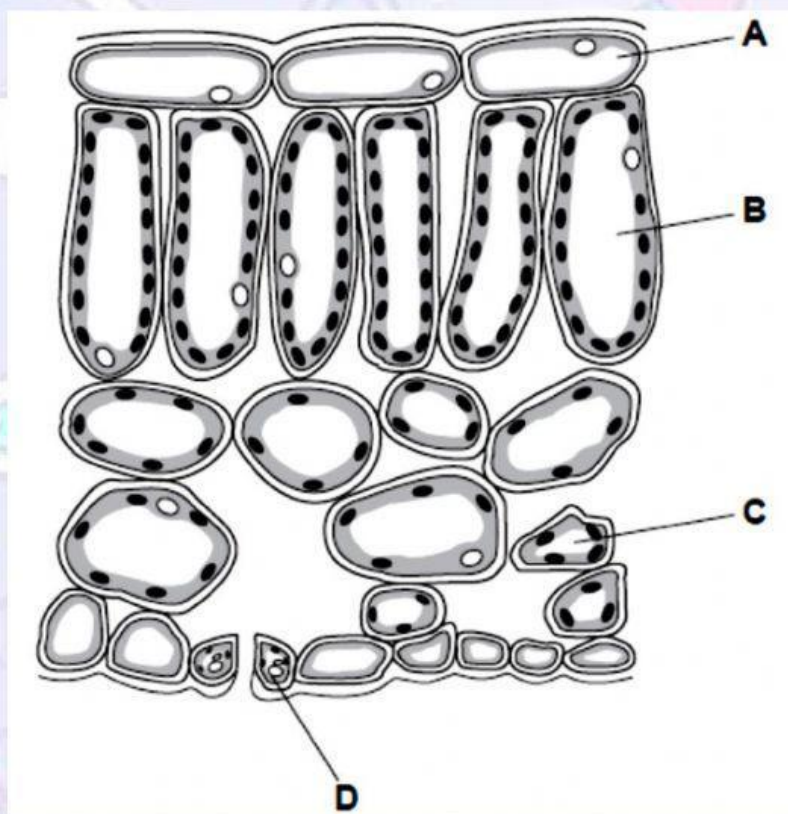
4. Where and how does carbon dioxide enter a plant?

|          | where           | how       |
|----------|-----------------|-----------|
| <b>A</b> | root hair cells | osmosis   |
| <b>B</b> | root hair cells | diffusion |
| <b>C</b> | stomata         | osmosis   |
| <b>D</b> | stomata         | diffusion |

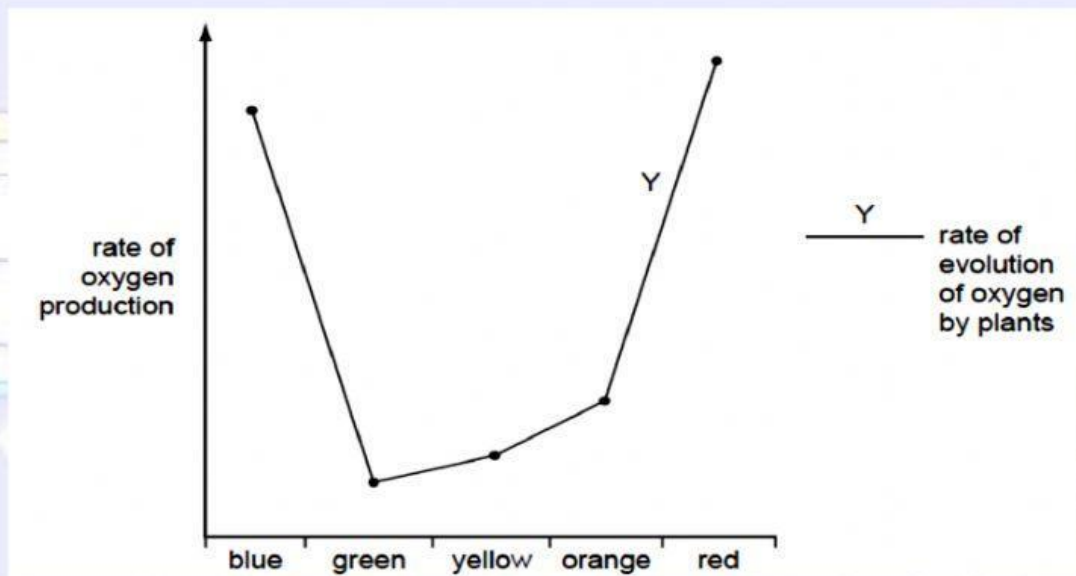


5. The diagram shows the cross-section of part of a leaf.

In which cell does most photosynthesis take place?



6. The graph shows the effect of different colours of light on the rate of oxygen production by green plants.



What can be deduced from the graph?

- A Photosynthesis is least active in green light.
- B Photosynthesis is most active in green light.
- C Respiration is least active in green light.
- D Respiration is most active in green light.

7. Where does most photosynthesis occur in a typical leaf?

- A epidermis
- B guard cells
- C palisade mesophyll
- D spongy mesophyll

8. What is caused by the lack of nitrate ions in plant leaves?

- A all leaves very dark green
- B leaves yellow between the veins
- C pale leaves with poor growth
- D wilting of the leaves