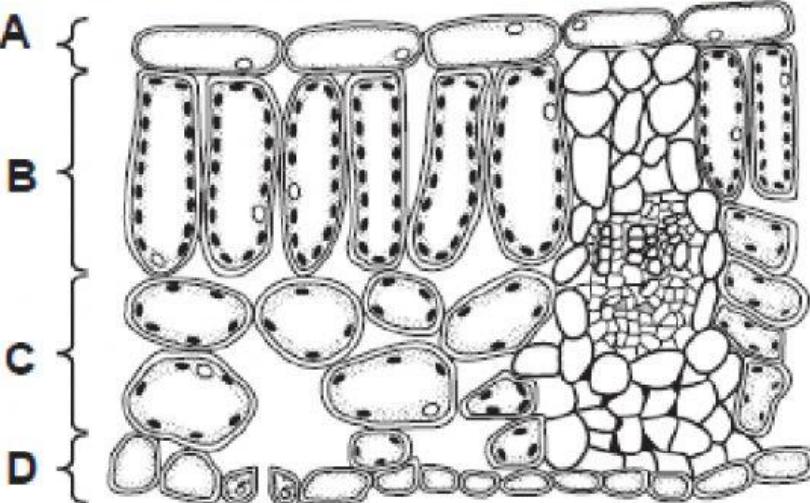


## **TOPIC 3: PLANT NUTRITION & TRANSPORT**

### **EXERCISE 1**

1. The diagram shows the arrangement of cells in the leaf of a green plant. In which region do the cells contain the greatest number of chloroplasts?

**A**



2. What is the function of chlorophyll in plants?

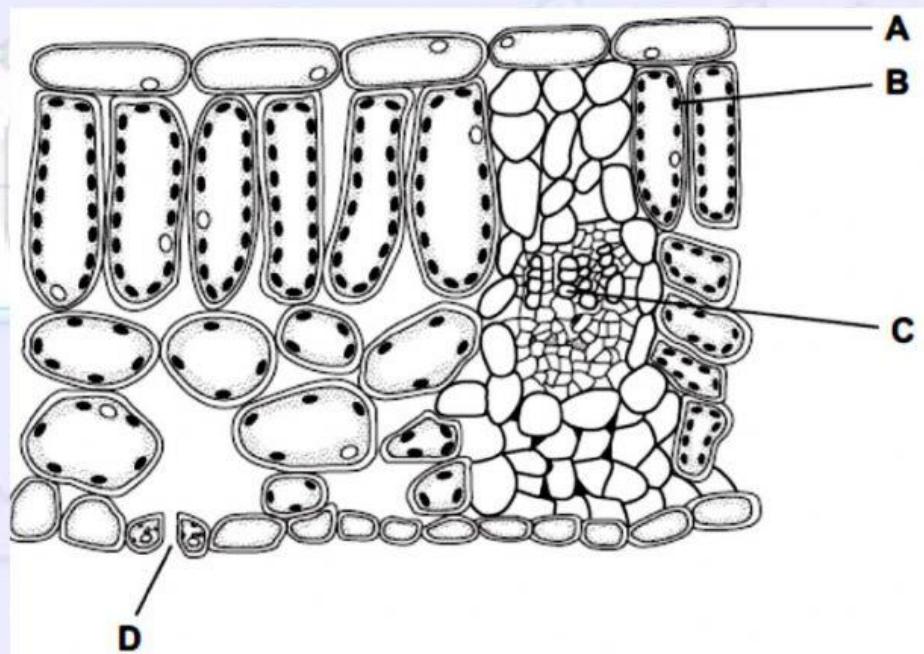
- A to absorb carbon dioxide
- B to absorb light
- C to absorb oxygen
- D to absorb water

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

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

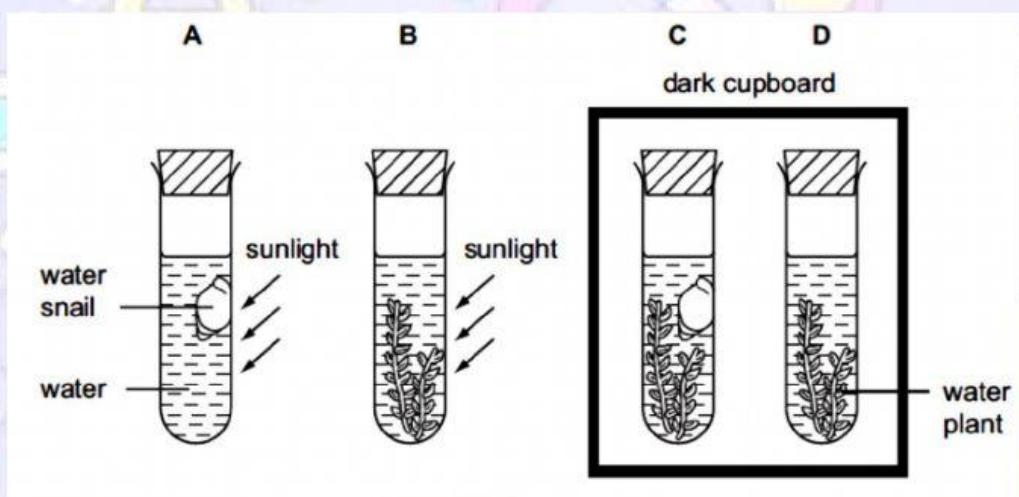
4. The diagram shows a cross section of a leaf under the microscope.

Where is light energy converted into chemical energy?



5. An experiment is set up as shown, and left for one hour.

In which test-tube does the concentration of carbon dioxide decrease?



6. How does most carbon dioxide reach the photosynthesising cells of a leaf?

- A through the cuticle
- B through the epidermis
- C through the stomata
- D through the xylem

7. Four types of cell found in the leaf of a green plant are listed below.

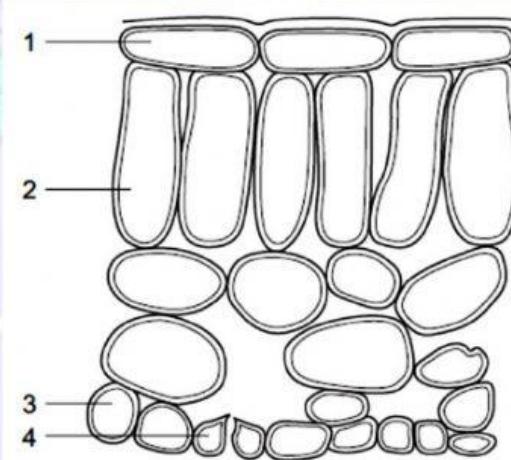
- 1 epidermal cell (not including guard cells)
- 2 guard cells
- 3 palisade mesophyll cells
- 4 spongy mesophyll cells

Which cells contain chloroplasts?

- A 1 and 2 only
- B 2 and 3 only
- C 2, 3 and 4 only
- D 1, 2, 3 and 4

8. The diagram shows the arrangement of cells inside the leaf of a green plant.

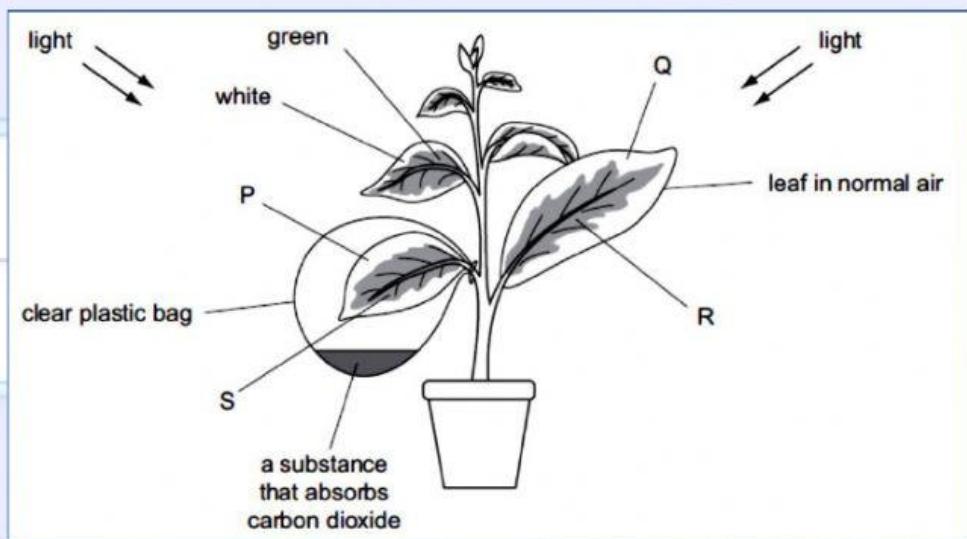
(No cell contents are shown.)



Which cells normally contain chloroplasts?

- A 1 and 2
- B 1 and 4
- C 2 and 3
- D 2 and 4

9. The diagram shows a photosynthesis investigation. The plant has leaves that are green in the middle and white round the edges.



Which leaf areas lack only one factor needed for photosynthesis?

A P and Q      B P and R      C Q and S      D R and S

10. Some organisms live in the dark at the bottom of the seas and, to synthesise glucose, use energy from chemicals in the very hot water that comes out of volcanoes.

What is a distinguishing feature of these organisms?

A Their enzymes are easily denatured by heat.  
B They do not need carbon dioxide.  
C They do not need to be green.  
D They obtain energy only as carnivores.