

# 18.2 Adaptive features

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_ **Total: 21 marks**

**KEY WORDS** adapted 适应 • adaptive feature 适应特征 • xerophytes 旱生植物  
• hydrophytes 水生植物 • survive 生存

## Objective

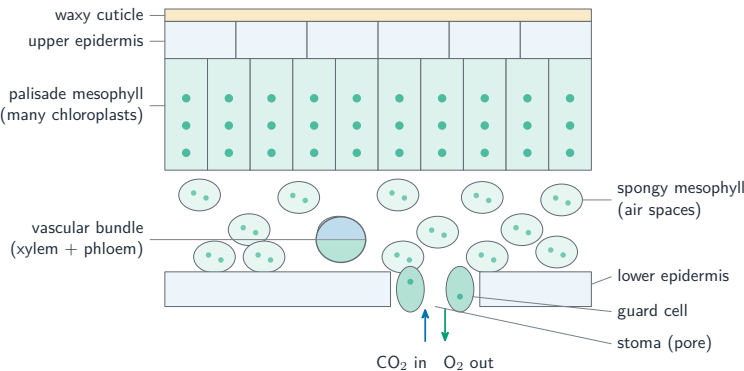
Build the skills to answer exam questions on **adaptive features** 适应特征 — what they are, and the features of **xerophytes** 旱生植物 and **hydrophytes** 水生植物.

**You must be able to:**

- define an adaptive feature
- describe the adaptive features of a xerophyte (desert plant)
- describe the adaptive features of a hydrophyte (water plant)

## 1 Worked examples

### ■ Adaptations



*An adaptive feature is an inherited feature that helps an organism survive and reproduce in its environment*



over many generations the population becomes better adapted

*Adaptive features arise through natural selection*

- **xerophyte (desert):** thick waxy cuticle, few small stomata, water storage → reduce water loss.
- **hydrophyte (water):** air spaces to float; stomata on the upper surface.

## 2 Practice

**2.1** Define an adaptive feature. [1]

**2.2** State one adaptive feature of a desert plant. [1]

## 3 Exam-style questions

**3.1** A thick waxy cuticle helps a desert plant by: [1]

- |   |   |
|---|---|
| A | B |
| C | D |
- A increasing water loss
  - B reducing water loss
  - C trapping more light
  - D attracting insects

**3.2** Xerophytes live where water is scarce.

(a) Describe two adaptive features that reduce water loss, and how each helps. [4]

**3.3** Marram grass grows on dry sand dunes. Water lily grows with its roots in mud and its leaves floating on the surface.

(a) State what is meant by an *adaptive feature*. [2]

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(b) Describe **three** adaptive features of a xerophyte such as marram grass, and explain how each reduces water loss. [6]

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(c) Describe **two** adaptive features of a hydrophyte such as water lily, and explain each. [4]

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(d) Explain why a xerophyte would not survive if planted in a pond. [2]

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