

## 2.6 Adaptations

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

**Total: 12 marks**

**KEY WORDS** adaptation 适应 • structural 结构 • behavioral 行为 • physiological 生理  
• natural selection 自然选择

### Objective

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Build the skills to answer exam questions on **adaptations**.

**You must be able to:**

- distinguish **structural** 结构, **physiological** 生理, and **behavioral** 行为 adaptations
- explain how adaptations arise by **natural selection**
- link an adaptation to survival in an environment

### 1 Worked examples

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Study these first. Each one shows the method for a question type used later — follow the steps and you can do the Practice and Exam-style questions yourself.

#### ■ Types of adaptation

- **Structural** — a physical feature (thick fur, sharp claws).
- **Physiological** — an internal process (venom, water conservation).
- **Behavioral** — an action (migration, hibernation).

#### ■ Adaptations arise by selection

Adaptations are heritable traits that improve survival/reproduction. They spread through a population by **natural selection** over generations, matching the species to its environment.

#### ■ A worked classification

A camel's hump (fat store) is **structural**; its ability to go without water is **physiological**; a desert lizard being active at night is **behavioral**.

#### ■ Adaptation and environment

Each adaptation suits a specific challenge — cold, drought, predators — so an organism is well matched to where it lives.

## 2 Practice

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Now apply the methods above.

**2.1** Name the three types of adaptation. [3]

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**2.2** Classify thick fur on an arctic fox. [1]

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**2.3** How do adaptations spread through a population? [1]

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## 3 Exam-style questions

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**3.1** Hibernating through winter is a [1]

|   |   |
|---|---|
| A | B |
| C | D |

**A** structural adaptation

**B** physiological adaptation

**C** behavioral adaptation

**D** learned habit only

**3.2** A desert plant has a thick waxy coating and stores water in its stem.

(a) Classify each of these two features. [2]

(b) Explain how these adaptations help it survive. [2]

**3.3** Explain how a beneficial adaptation becomes common in a population over time. [2]