

2.6 Adaptations

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

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

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

Now apply the methods above.

2.1 Name the three types of adaptation. [3]

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

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

3 Exam-style questions

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]
