

18.3 Conservation

Name: _____ Class: _____ Date: _____

Total: 12 marks

KEY WORDS conservation 保护 • extinct 灭绝 • endangered species 濒危物种 • invasive species 入侵物种
• seed bank 种子库

Objective

Build the skills to answer exam questions on **conservation** — why species become **extinct** 灭绝, ways to conserve them, **assisted reproduction** 辅助生殖, **invasive species** 入侵物种, and the roles of **IUCN** and **CITES**.

You must be able to:

- explain the causes of extinction and reasons to maintain biodiversity
- outline conservation methods (in-situ and ex-situ) and assisted reproduction
- explain the control of invasive species and the roles of IUCN and CITES

1 Worked examples

■ Extinction and conserving species

Species become **extinct** through **climate change** 气候变化, competition (often from invasive species), hunting by humans, and habitat loss. We maintain biodiversity because species give food, medicines and materials, keep ecosystems stable, and have value in themselves.

two ways to conserve a species

in-situ (in the wild)
national parks,
marine reserves

ex-situ (away from the wild)
zoos, botanic gardens,
seed banks, frozen zoos

Conservation is in-situ (protect in the wild habitat) or ex-situ (keep and breed away from the wild)



Conservation protects biodiversity at every level

- **in-situ** 就地: protected areas — national parks, marine parks.
- **ex-situ** 迁地: **zoos** 动物园, **botanic gardens** 植物园, **seed banks** 种子库, 'frozen zoos'.

■ Assisted reproduction and invasive species

For rare mammals: **IVF** 体外受精, **embryo transfer** 胚胎移植, **surrogacy** 代孕. **Invasive species** are controlled because they out-compete native species. **IUCN** lists how threatened each species is; **CITES** controls international trade in endangered species.

2 Practice

2.1 State **two** causes of extinction.

[2]

2.2 State the difference between in-situ and ex-situ conservation.

[2]

3 Exam-style questions

3.1 Which is an example of **ex-situ** conservation? [1]

- **A** a national park
 - **B** a marine reserve
 - **C** a seed bank
 - **D** a protected wetland
-

3.2 What is the role of CITES? [1]

- **A** to list how threatened each species is
 - **B** to control the international trade in endangered species
 - **C** to run IVF programmes
 - **D** to remove invasive species
-

3.3 (a) Explain why invasive species are controlled in conservation. [2]

(b) Outline how a seed bank helps to conserve plant species. [2]

3.4 Explain **two** reasons why maintaining biodiversity is important. [2]

Solutions

2.1 any two: climate change; competition / invasive species; hunting by humans; habitat loss/degradation.

2.2 in-situ — conserving a species in its natural habitat; ex-situ — keeping and breeding it away from the wild.

3.1 C. A seed bank keeps species away from the wild — ex-situ.

3.2 B. CITES controls international trade in endangered species.

3.3 (a) invasive species out-compete native species for resources, reducing native populations / biodiversity.

(b) seeds are stored (frozen/dry) for the long term; they can be grown later to restore a species if it is lost from the wild.

3.4 any two reasons explained: species provide food/medicines/materials; they keep ecosystems stable; they have intrinsic value.