

2.2 Ecosystem Services

Name: _____ Class: _____ Date: _____

Total: 11 marks

KEY WORDS ecosystem services 生态系统服务

Objective

Build the skills to answer exam questions on **ecosystem services**.

You must be able to:

- classify **ecosystem services** 生态系统服务 (provisioning, regulating, supporting, cultural)
- give examples of each
- explain their value to humans

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.

■ Four types of ecosystem service

- **Provisioning** — products: food, water, timber, medicine.
- **Regulating** — control: climate regulation, water purification, pollination, flood control.
- **Supporting** — underlying processes: nutrient cycling, soil formation.
- **Cultural** — non-material: recreation, tourism, spiritual value.

■ Classifying a service

Ask what the ecosystem provides. Clean water = **regulating** (purification) or **provisioning** (the water itself); nutrient cycling = **supporting**; a national park visit = **cultural**.

■ Value to humans

Ecosystem services are worth trillions of dollars — replacing them artificially (e.g. water treatment for lost wetlands) is expensive, so protecting ecosystems is cost-effective.

■ A worked example

Bees pollinating crops is a **regulating** service worth billions to agriculture; losing pollinators would raise food costs sharply.

2 Practice

Now apply the methods above.

2.1 Name the four types of ecosystem service. [2]

2.2 Classify “pollination of crops”. [1]

2.3 Give one provisioning service. [1]

3 Exam-style questions

3.1 Water purification by a wetland is which type of service? [1]

- **A** provisioning
- **B** regulating
- **C** supporting
- **D** cultural

3.2 A forest provides timber, stores carbon, and is used for hiking.

(a) Classify each of these three services. [3]

(b) Explain why ecosystem services have economic value. [1]

3.3 Explain why protecting a wetland can be cheaper than replacing its services artificially. [2]

Solutions

2.1 Provisioning, regulating, supporting, cultural.

2.2 Regulating.

2.3 Any one: food, water, timber, medicine.

3.1 B — regulating.

3.2 (a) Timber = provisioning; carbon storage = regulating; hiking = cultural. (b) They provide things people would otherwise have to pay to produce or replace.

3.3 The wetland naturally purifies water for free; replacing it with a treatment plant costs money to build and run, so conserving it is cheaper.