

4.6 Watersheds

Name: _____ Class: _____ Date: _____

Total: 9 marks

KEY WORDS watershed 流域 • soil 土壤

Objective

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

You must be able to:

- define a **watershed** 流域 (drainage basin)
- explain how land use affects water quality in a watershed
- describe runoff collecting into rivers

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.

■ What a watershed is

A **watershed** (drainage basin) is all the land that drains into a **common body of water** (a river, lake, or ocean). Rain that falls anywhere in it flows toward that water.

■ Runoff collects

Water runs downhill, collecting into streams that join into rivers. Everything on the land — soil, fertilizer, pollutants — can be carried along with it.

■ Land use affects water quality

Because runoff carries whatever is on the land, **agriculture** (fertilizer, pesticides), **cities** (oil, sewage), and **construction** (sediment) all affect the quality of the water downstream.

■ A worked link

Fertilizer applied anywhere in a river's watershed can wash into the river, raising nutrient levels and causing eutrophication downstream.

2 Practice

Now apply the methods above.

2.1 Define a watershed. [1]

2.2 How does water move within a watershed? [1]

2.3 Name one land use that can pollute a watershed. [1]

3 Exam-style questions

3.1 A watershed is best described as the land that [1]

- **A** contains no water
- **B** drains into a common body of water
- **C** is always a desert
- **D** cannot be polluted

3.2 A farm sits within a river's watershed.

(a) Explain how fertilizer from the farm can reach the river. [2]

(b) State one effect on the river. [1]

3.3 Explain why protecting an entire watershed, not just the river itself, is important for water quality. [2]

Solutions

2.1 All the land that drains into a common body of water.

2.2 It runs downhill, collecting into streams and rivers.

2.3 Any one: agriculture, urban/city runoff, construction.

3.1 B — drains into a common body of water.

3.2 (a) Rain washes fertilizer off the fields as runoff, which flows downhill through the watershed into the river. (b) Eutrophication / algal blooms (or nutrient pollution).

3.3 All land in the watershed drains to the same water, so pollution anywhere in it can reach the water; protecting the whole basin prevents that.