

7.6 Reduction of Air Pollutants

Name: _____ Class: _____ Date: _____

Total: 10 marks

KEY WORDS scrubbers 洗涤器 • catalytic converters 催化转化器
• electrostatic precipitators 静电除尘器

Objective

Build the skills to answer exam questions on **reducing air pollutants**.

You must be able to:

- describe control technologies (**catalytic converters** 催化转化器, **scrubbers** 洗涤器, filters)
- explain regulation (**Clean Air Act**, emission standards)
- link each method to the pollutant it targets

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.

■ Control technologies

- Catalytic converters** (cars) — convert CO, NO_x, and unburned fuel into less harmful gases.
- Scrubbers** (smokestacks) — spray a liquid to remove SO₂.
- Electrostatic precipitators / filters** — remove **particulates** from exhaust.

■ Regulation

Laws like the **Clean Air Act** set **emission standards** limiting how much pollution sources may release, forcing cleaner technology.

■ Prevention vs cleanup

Reducing the source (efficiency, renewables, less driving) prevents pollution; control devices clean it up after it forms. Prevention is often better.

■ A worked match

A coal plant uses **scrubbers** for SO₂ and **precipitators** for particulates; a car uses a **catalytic converter** for CO/NO_x.

2 Practice

Now apply the methods above.

2.1 What does a catalytic converter reduce? [1]

2.2 What does a scrubber remove from smokestack gases? [1]

2.3 What is the purpose of emission standards? [1]

3 Exam-style questions

3.1 A device that removes SO₂ from a smokestack is a [1]

A	B
C	D

A catalytic converter

B scrubber

C wind turbine

D solar panel

3.2 A coal power plant must reduce its emissions.

(a) Name one technology to remove particulates and one to remove SO₂. [2]

(b) Explain how emission standards force cleaner operation. [2]

3.3 Explain why preventing pollution at the source is often better than cleaning it up afterward. [2]