

6.5 Fossil Fuels

Name: _____ Class: _____ Date: _____

Total: 10 marks

KEY WORDS fossil fuels 化石燃料 • dam 大坝

Objective

Build the skills to answer exam questions on **fossil fuels**.

You must be able to:

- describe how **fossil fuels** 化石燃料 form and are used
- explain their environmental impacts (CO₂, pollution, extraction)
- state advantages and disadvantages

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.

■ Formation and use

Fossil fuels (coal, oil, natural gas) formed from ancient organisms buried and compressed over millions of years. They are burned to release energy — the world's main energy source.

■ Advantages

- **High energy density** (a lot of energy per unit).
- **Cheap** and reliable with existing infrastructure.

■ Disadvantages

- Burning releases **CO₂** (climate change) and pollutants (SO₂, particulates → acid rain, smog).
- **Extraction** damages land and water (mining, oil spills, fracking).
- **Nonrenewable** — will run out.

■ A worked judgement

Coal is cheap and energy-dense but produces the most CO₂ and air pollution of the fossil fuels, so it has the greatest climate impact.

2 Practice

Now apply the methods above.

2.1 How do fossil fuels form? [1]

2.2 State one advantage of fossil fuels. [1]

2.3 State one environmental disadvantage. [1]

3 Exam-style questions

3.1 Burning fossil fuels contributes to climate change mainly by releasing [1]

- **A** oxygen
 - **B** carbon dioxide
 - **C** water only
 - **D** nitrogen gas
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3.2 A country generates most of its electricity from coal.

(a) State two environmental impacts. [2]

(b) Explain one reason it still relies on coal despite these impacts. [2]

3.3 Explain why fossil fuels are described as a finite resource. [2]

Solutions

2.1 From ancient organisms buried and compressed over millions of years.

2.2 Any one: high energy density, cheap, reliable, existing infrastructure.

2.3 Any one: CO₂/climate change, air pollution, extraction damage.

3.1 B — carbon dioxide.

3.2 (a) Any two: CO₂ emissions, air pollution/acid rain, land/water damage from mining.

(b) It is cheap, energy-dense, reliable, and the infrastructure already exists.

3.3 They form over millions of years — far slower than we use them — so the supply is limited and cannot be replaced on a human timescale.