

5.5 Technology of the Industrial Age

Name: _____ Class: _____ Date: _____ **Total: 13 marks**

KEY WORDS second industrial revolution 第二次工业革命 • railroads 铁路 • steamships 蒸汽船
• telegraph 电报 • internal combustion engine 内燃机

Objective

Build the skills to explain **industrial technology** 工业技术.

You must be able to:

- state what the new machines made possible
- state the CED's claim about energy
- name the four products of the second industrial revolution
- state what railroads, steamships and the telegraph made possible

1 Worked examples

Study these first. Each one shows the method for a task used later.

■ Machines

The development of machines, **including steam engines and the internal combustion engine**, made it possible to take advantage of **both existing and vast newly discovered resources of energy stored in fossil fuels, specifically coal and oil**.

■ Energy

The fossil fuels revolution greatly increased the energy available to human societies. This is the CED's most sweeping single sentence in the unit: not a new product but a new quantity of power.

■ Second industrial revolution

New methods in the production of **steel, chemicals, electricity and precision machinery** during the second half of the 19th century.

■ Transport and communication

Railroads, steamships and the telegraph **made exploration, development and communication possible in interior regions globally, which led to increased trade and migration.** Interiors, not coasts, is the point.

2 Practice

2.1 State the CED's claim about fossil fuels and energy. [2]

2.2 Name the four products of the second industrial revolution. [2]

2.3 Railroads, steamships and the telegraph reached interiors.

(a) State the three things they made possible there. [3]

(b) State the two consequences. [1]

3 Exam-style questions

3.1 The CED's sweeping claim is that the fossil fuels revolution [1]

- **A** reduced available energy
- **B** greatly increased the energy available to human societies
- **C** had no effect on energy
- **D** applied only to Europe

3.2 The transport and communication technologies mattered especially for [1]

- **A** coastlines
- **B** interior regions
- **C** islands only
- **D** deserts only

3.3 A railway reaches a region that had been three weeks from the coast.

(a) State what becomes possible. [1]

(b) Explain the connection to migration. [2]

Solutions

2.1 machines made it possible to use energy stored in coal and oil; the fossil fuels revolution greatly increased the energy available to human societies.

2.2 steel; chemicals; electricity; precision machinery.

2.3 (a) exploration; development; communication. (b) increased trade and migration.

3.1 B. the CED's own sentence.

3.2 B. interior regions.

3.3 (a) bulk goods can be moved to and from the region economically. (b) people can move there and return, so labour follows the route as goods do.