# 6.3 Climate change: mitigation and adaptation

Name: _____ Class: _____ Date: _____ **Total: 19 marks**

**KEY WORDS** mitigation • adaptation • carbon tax • cap and trade • carbon capture and storage • climate justice

## Objective

Build the skills to answer exam questions on responses to climate change: **mitigation**, **adaptation**, policy tools such as a **carbon tax**, and international agreements.

**You must be able to:**

- distinguish between mitigation and adaptation, with examples
- explain how carbon pricing and other policies reduce emissions
- evaluate adaptation strategies for a named place
- discuss the strengths and limits of international climate agreements

## 1 Key knowledge and worked examples

### ■ Responding to climate change

| | **mitigation** | **adaptation** |
|---|---|---|
| aim | reduce the **cause**: cut emissions or remove greenhouse gases | reduce the **harm** of changes that happen anyway |
| examples | renewable energy, energy efficiency, electric transport, reforestation, carbon capture and storage (CCS), less meat | sea walls, drought-resistant crops, flood warnings, houses on stilts, water storage, moving away from coasts |

**Policy tools**

- **Carbon tax:** a price per tonne of $CO_2$ emitted. Polluting becomes more expensive, so firms and people switch to cleaner options.
- **Cap and trade:** the government sets a total limit (cap) and sells or gives permits;



exercises.lol exercises.com.cn

firms that cut emissions can sell spare permits (e.g. the EU Emissions Trading System).

- **Regulation and subsidies:** efficiency standards, bans on new coal plants, grants for solar panels.
- **Geoengineering:** large-scale methods such as reflecting sunlight; untested and risky.

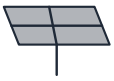
**Agreements:** the **Paris Agreement** (2015): keep warming **well below** 2 °**C** and try for 1.5 °C. Each country sets its own targets (**nationally determined contributions**) and should raise them every five years. Targets are not legally enforced. Current pledges lead to roughly 2.5–3 °C by 2100.

**Climate justice:** rich countries emitted most of the $CO_2$ so far; poor countries often suffer most and have least money to adapt.

**Answer shapes:** say whether a strategy is mitigation or adaptation, then give one strength and one limitation.

## 2 Practice

**2.1** Distinguish between climate change mitigation and adaptation, giving **one** example of each. [2]



solar panels



sea wall

**2.2** Classify each action as mitigation (M) or adaptation (A): sea wall; solar farm; drought-resistant maize; carbon tax; planting forests; flood early-warning system. [3]

sea wall | solar farm | drought maize | carbon tax | planting forests | flood warning



exercises.lol exercises.com.cn

## 3 Exam-style questions

**3.1** A government introduces a carbon tax of \$50 per tonne of $CO_2$.

(a) Explain how a carbon tax reduces emissions. [2]

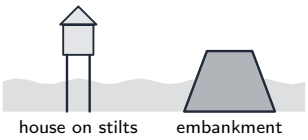



(b) Outline **two** reasons why some people oppose a carbon tax. [2]

**3.2** Bangladesh has a large, low-lying delta with many people living near the coast.

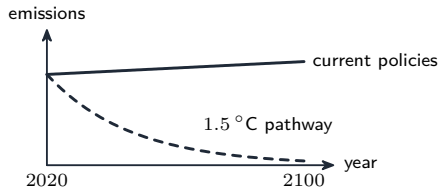
(a) Suggest **two** adaptation strategies for people in the delta. [2]

(b) Explain why adaptation alone is not enough to deal with climate change. [3]




**3.3** In 2015 almost every country signed the Paris Agreement.

Discuss the effectiveness of the Paris Agreement. [5]






exercises.lol exercises.com.cn