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; 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

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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]

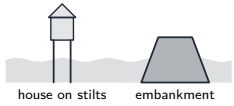


(b) Outline **two** reasons why some people oppose a carbon tax. [2]

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

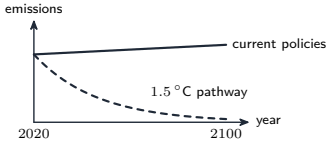
(a) Suggest **two** adaptation strategies for people in the delta. [2]

(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]



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