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Q25

In the context of mitigating the impending global warming due to anthropogenic emissions of carbon dioxide, which of the following can be potential sites for carbon sequestration? 1. Abandoned and uneconomic coal seams 2. Depleted oil and gas reservoirs 3. Subterranean deep saline formations Select the correct answer using the code given below: (a) 1 and 2 only (b) 3 only (c) 1 and 3 only (d) 1, 2 and 3 Official key: D.

UPSC Civil Services Prelims 2017 · General Studies · 2 marks · Economy

Indian economy, budget, schemes - Prelims GS Paper I.

Explanation**(a)**

(a) 1 and 2 only. Abandoned coal seams and depleted hydrocarbon reservoirs are valid CO₂ sinks, but deep saline formations are also standard sequestration geology. Omitting 3 is incomplete.

(b)

(b) 3 only. Saline aquifers work, but they are not the only class. Not the key.

(c)

(c) 1 and 3 only. Oil and gas reservoirs are a major enhanced-oil-recovery / storage option. Dropping 2 is wrong.

(d) Official key

(d) 1, 2 and 3. Uneconomic coal seams, depleted oil and gas fields, and deep saline formations are all recognised geological stores for captured CO₂. This is the official key.

Summary

Official key is (d) 1, 2 and 3. Geological carbon sequestration injects compressed CO₂ into porous rock isolated by **caprock**. Unmineable coal can adsorb CO₂; depleted oil and gas reservoirs have known seals and may yield extra hydrocarbons; deep saline formations offer the largest pore volume. Forests and soils are biological sinks, not asked here. All three listed sites count.

Related possible facts

These can be asked in a future Prelims paper.

CCS

Carbon capture and storage

IPCC sinks

Geological, oceanic, terrestrial

EOR

CO₂-enhanced oil recovery

Caprock

Impermeable seal above the store

India coal seams

Researched for ECBM / storage

Article 6 Paris

Neighbour: cooperative mitigation

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