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Q26

In the context of which one of the following are the terms 'pyrolysis and plasma gasification' mentioned? (a) Extraction of rare earth elements (b) Natural gas extraction technologies (c) Hydrogen fuel-based automobiles (d) Waste-to-energy technologies Official key: D.

UPSC Civil Services Prelims 2019 · General Studies · 2 marks · Environment and Ecology
Environment, ecology, climate, biodiversity - Prelims GS Paper I.

Explanation**(a)**

(a) Extraction of rare earth elements. REE processing uses other chemical routes; **pyrolysis** and **plasma gasification** are not the usual REE tags, so this is not the key.

(b)

(b) Natural gas extraction. Those terms are not fracking or CBM vocabulary, so this is not the key.

(c)

(c) Hydrogen fuel-based automobiles. Hydrogen cars are a different file; **pyrolysis/plasma gasification** are waste-treatment terms, so this is not the key.

(d) Official key

(d) Waste-to-energy technologies. **Pyrolysis** thermally decomposes waste without full combustion; **plasma gasification** uses a plasma torch to syngas-ify residues. Both appear in municipal and hazardous waste-to-energy literature. That context is the official key.

Summary

Official key is (d) waste-to-energy technologies. **Pyrolysis** and **plasma gasification** convert solid waste to oil, char or syngas rather than only dumping or simple incineration. They are not rare-earth, natural-gas or hydrogen-car processes. Honour the stored letter (d).

Related possible facts

These can be asked in a future Prelims paper.

Pyrolysis

Heating in limited oxygen

Plasma gasification

Ultra-high temperature syngas route

Product

Syngas, slag, sometimes oils

Askable twin

Incineration versus gasification

Indian context

Swachh and WtE plants debate

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