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Q98

Consider the following statements: 1. Other than those made by humans, nanoparticles do not exist in nature. 2. Nanoparticles of some metallic oxides are used in the manufacture of some cosmetics. 3. Nanoparticles of some commercial products which enter the environment are unsafe for humans. Which of the statements given above is/are correct? (a) 1 only (b) 3 only (c) 1 and 2 (d) 2 and 3 Official key: D.

UPSC Civil Services Prelims 2022 · General Studies · 2 marks · Environment and Ecology
Environment, ecology, climate, biodiversity - Prelims GS Paper I.

Explanation

(a)

1 only. Nature makes nanoparticles (volcanic ash, sea spray, viruses as nanoscale).

(b)

3 only. Metallic-oxide nanoparticles in cosmetics also hold.

(c)

1 and 2. Statement 1 is false.

(d) Official key

2 and 3. TiO₂/ZnO in sunscreens; commercial nanoparticles can be unsafe if they enter the environment. They also exist in nature.

Summary

Official key is (d) 2 and 3. Nanoparticles occur naturally. Engineered metal-oxide particles are used in cosmetics, and some commercial nanoparticles are an environmental/health concern.

Related possible facts

These can be asked in a future Prelims paper.

TiO₂ / ZnO

Sunscreen mineral nanoparticles.

Incidental NP

Combustion soot; a natural/anthropogenic mix.

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