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Q81

Consider the following statements: 1. High clouds primarily reflect solar radiation and cool the surface of the Earth. 2. Low clouds have a high absorption of infrared radiation emanating from the Earth's surface and thus cause warming effect. Which of the statements given above is/are correct? (a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2 Official key: D.

UPSC Civil Services Prelims 2022 · General Studies · 2 marks · Geography

Physical, Indian and world geography - Prelims GS Paper I.

Explanation**(a)**

1 only. High clouds are not primarily a cooling reflector in the keyed physics.

(b)

2 only. Low clouds are the stronger reflectors (cooling), not IR absorbers that warm as stated.

(c)

Both. Each sentence swaps the usual high/low cloud radiative roles.

(d) Official key

Neither. High clouds tend to trap outgoing IR (warming); low clouds raise albedo (cooling). The statements reverse that.

Summary

Official key is (d) neither. High, thin clouds are better at trapping long-wave radiation; low, thick clouds reflect solar radiation and cool the surface. Statement 1 and statement 2 swap those roles.

Related possible facts

These can be asked in a future Prelims paper.

Cloud albedo

Low stratocumulus - a cooling lid.

Cirrus greenhouse

High ice clouds - a warming lid.

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