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Q2

Consider the following statements : Statement-I Thickness of the troposphere at the equator is much greater as compared to poles. Statement-II : At the equator, heat is transported to great heights by strong convectional currents. Which one of the following is correct in respect of the above statements ? (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I (c) Statement-I is correct, but Statement-II is incorrect (d) Statement-I is incorrect, but Statement-II is correct Official key: **A.**

UPSC Civil Services Prelims 2024 · General Studies · 2 marks · Geography

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

Explanation**(a) Official key**

Both correct and II explains I. Equatorial convection stacks a thicker troposphere than at the poles.

(b)

Both correct but II does not explain I. Convection is why the **tropopause** is higher at the equator.

(c)

I correct, II incorrect. Strong equatorial convection is real.

(d)

I incorrect, II correct. The **tropopause** is higher in the tropics.

Summary

Official key is (a). The troposphere is much thicker at the equator (~16-18 km) than at the poles (~8 km). Intense heating drives deep convection that carries heat to great heights, lifting the **tropopause**. Statement-II therefore explains Statement-I.

Related possible facts

These can be asked in a future Prelims paper.

Tropopause

Boundary between troposphere and stratosphere; higher in the tropics.

Hadley cell

Tropical overturning circulation driven by equatorial heating.

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