

Moderate

Assistant Engineer (Electrical), Class

2025

Building Department

HVDC LCCs have _____

A

1 degree of freedom

Correct

B

2 degrees of freedom

C

5 degrees of freedom

D

Many degrees of freedom

Correct Answer: A

Full Detailed Explanation

Concept & Reasoning In a thyristor LCC, turn-on is controlled by firing delay angle, while turn-off relies on the AC system commutation voltage. Changing firing angle changes average DC voltage and consequently DC current/power through the link control hierarchy. Reactive power consumption is coupled to active power and firing angle, which is why the converter is described as having one main steady-state control degree of freedom. How to Solve It in the Exam LCC firing angle control; VSC more independent P/Q control. Important Exam Point Keep converter technology in mind before answering 'degrees of freedom'. Related Revision Path This question sits in the revision path Power System HVDC Transmission Line-Commutated Converters.

Open live question on website:

<https://sarkariresultout.com/pyq/question/gpsc-ae-electrical-q226-degrees-of-freedom-in-lcc-hvdc/>