Medium | Deputy Executive Engineer (Electric | 2026 | orts Authority of Gujarat / Assistant Engineer (El

# Consider the following statements regarding HVDC Control: 1. Constant current control is used in rectifier station. 2. Constant extinction angle control

A. 1 and 2 only — Correct

B. 2 only

C. 1 only

D. 1, 2 and 3

## Correct Answer: A

### Full Detailed Explanation

Correct Answer: A - 1 and 2 only Quick Concept Explanation Line-commutated HVDC uses thyristors and depends on the AC system voltage for commutation, so adequate short-circuit strength and reactive-power support are important. AC voltage disturbances can produce commutation failure, particularly at the inverter. Key relation: LCC reactive demand is a significant fraction of transmitted power and is compensated locally.Exam focus: Strong AC system and commutation margin matter for LCC. Common trap: LCC cannot normally operate a passive AC network without a voltage source. Statement-wise Verification Statement 1 - Correct.Constant current control is used in rectifier station.Strong AC system and commutation margin matter for LCC. Statement 2 - Correct.Constant extinction angle control is used in inverter station.AC voltage disturbances can produce commutation failure, particularly at the inverter. Statement 3 - Incorrect.Both stations operate under constant voltage control simultaneously.Typical LCC-HVDC control coordinates current control at one terminal with extinction-angle/current-margin control at the inverter; both are not simply constant-voltage controllers Core Concept Line-commutated HVDC uses thyristors and depends on the AC system voltage for commutation, so adequate short-circuit strength and reactive-power support are important. AC voltage disturbances can produce