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

Consider the following statements regarding D to A converter characteristics: 1. R-2R ladder DAC provides better accuracy and simplicity compared

A 1 and 2 only

B 2 and 3 only

C **1 and 3 only** Correct

D 1, 2 and 3

Correct Answer: C

Full Detailed Explanation

Correct Answer: C - 1 and 3 only Quick Concept Explanation A DAC converts a digital code into a proportional analog voltage or current. The R-2R ladder uses only two resistor values, making matching and fabrication easier than a wide binary-weighted resistor range. Key relation: Ideal unipolar DAC: V_o V_ref (digital code/2^n).Exam focus: R-2R needs only R and 2R. Common trap: Reference voltage directly affects full-scale output. Statement-wise Verification Statement 1 - Correct.R-2R ladder DAC provides better accuracy and simplicity compared to binary weighted resistor DAC.The R-2R ladder uses only two resistor values, making matching and fabrication easier than a wide binary-weighted resistor range. Statement 2 - Incorrect.DAC output is independent of reference voltage used in the circuit.DAC output scale is proportional to its reference voltage Statement 3 - Correct.A Digital-to-Analog Converter converts discrete digital values into corresponding analog voltage or current signals for real-world interfacing.A DAC converts a digital code into a proportional analog voltage or current. Core Concept A DAC converts a digital code into a proportional analog voltage or current. The R-2R ladder uses only two resistor values, making matching and fabrication easier than a wide binary-weighted resistor range. Output scale is set by the reference voltage, so the output is not independent of Vref