**TOPIC**  
Chemistry

**QUESTION**  
Limestone (CaCO₃) decomposes to CaO and CO₂. The number of grams of limestone needed to produce 100 grams of CO₂ most nearly is  
(A) 36  
(B) 152  
(C) 200  
(D) 227

**HINT**  
Consider the stoichiometry of the decomposition reaction.

**SOLUTION**  
Basis: 100 gr of CO₂  
Mols of CO₂ = \( \frac{100\, \text{gr}}{44\, \text{gr/mol}} \)  
= 2.27 mols of CO₂  
1 mol of limestone produces 1 mol of CO₂. Therefore 2.27 moles of CaCO₃ are needed.  
Mass of CaCO₃ = 2.27 mols × 100 gr/mol  
= 227 gr

**ANSWER**  
(D)

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