

Easy

Assistant Engineer (Electrical), Class 2025

Building Department

When can one logic gate drive many other logic gates in Digital Electronics?

A

When its output impedance is low and the input impedance is low

B

When its output impedance is high and the input impedance is high

C

When its output impedance is high and the input impedance is low

D

When its output impedance is low and the input impedance is high **Correct**

Correct Answer: D

Full Detailed Explanation

Concept & Reasoning Fan-out is limited by the current a logic output can source/sink compared with the input current demanded by each load. A low output impedance behaves like a stiff voltage source, while high input impedance means each receiving gate draws little current. That is the desirable combination for driving multiple gates. How to Solve It in the Exam Driver: low Z_{out} ; loads: high Z_{in} . Important Exam Point Connect fan-out questions with loading and valid logic-level margins, not only resistance words. Related Revision Path This question sits in the revision path Digital Electronics Logic Families Fan-Out and Loading .

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