EngineeringRise

Logic gates

Formulas and units, JEE Main. Status: Reviewed on 2026-11-20.

Result	Formula	Units or note
AND	Y = A.B; table 0 0 0 1	none (logic)
OR	Y = A + B; table 0 1 1 1	none (logic)
NOT	Y = A-bar; 0 to 1, 1 to 0	none (logic)
NAND	Y = (A.B)-bar; table 1 1 1 0	none (logic)
NOR	Y = (A + B)-bar; table 1 0 0 0	none (logic)
De Morgan laws	(A.B)-bar = A-bar + B-bar; (A + B)-bar = A-bar . B-bar	none (logic)
NOT from NAND or NOR	join the two inputs Valid when: NAND or NOR with both inputs tied together	none (logic)
OR from NAND	NAND(A-bar, B-bar) = A + B (three NAND gates)	none (logic)
Number of table rows	2^n for n inputs	rows

Full lesson with worked examples:
https://www.engineeringrise.in/learn/learn/jee-main/physics/electronic-devices/logic-gates

EngineeringRise is an unofficial study site. It is not affiliated with NTA, the IITs, BITS, VIT, SRM or any exam body.