3–8 Integrated circuit logic and troubleshooting applications

Many of the rules of Boolean algebra introduced in this chapter can be (and have been) applied to the construction of IC logic circuits and the troubleshooting of logic gates and circuits.

For example, in Figure 3–64a we can test the operation of an *AND* gate by applying the identity law ($A \cdot 1 = A$). One input of the *AND* gate is tied high while the other input is pulsed low. If the output pulses low, then the gate is functioning properly. But if the output indicates a permanent high or a low (shorted output) or if there is no logic level detected (open output), then the gate is defective. Similarly in Figure 3–64b we can test the operation of the *OR* gate by applying the identity

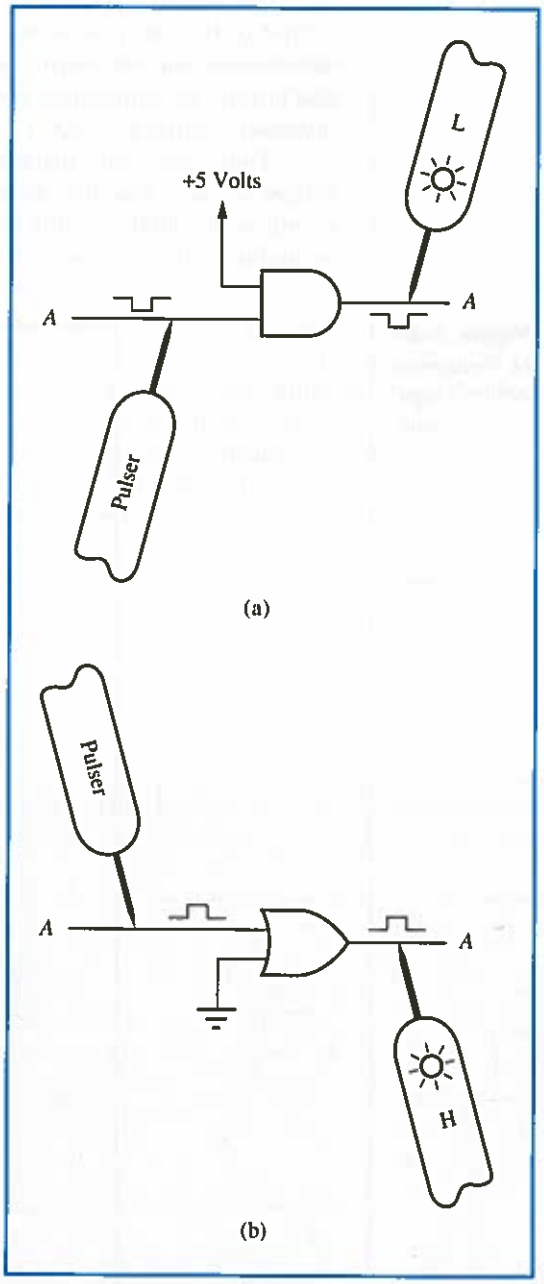

Figure 3–64
Application of the identity law in troubleshooting a logic circuit.