

The net shown in Fig. 2.11 represents a producers-consumers system with priority, i.e., consumer A has priority over consumer B in the sense that A can consume as long as buffer A has items (tokens), but B can consume only if buffer A is empty and buffer B has items (tokens). It has been shown [173] that this system can not be modeled without introducing a new kind of arc called an inhibitor arc. An inhibitor arc connects a place to a transition and is represented by a dashed line terminating with a small circle instead of an arrowhead at the transition, like the arc from  $p_3$  to  $t_7$  in Fig. 2.11. The inhibitor arc disables the transition when the input place has a token and enables the transition when the input place has no token and other (normal) input places have at least one token per arc weight. No tokens are moved through an inhibitor arc when the transition fires. A class of Petri nets with inhibitor arcs is referred to as extended Petri nets. The introduction of inhibitor arcs adds the ability to test "zero" (i.e., absence of tokens in a place) and increases the modeling power of Petri nets to the level of Turing machines [10].