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1: procedure BEAMPRUNE( $Q, j, b$ )
2:    $cands \leftarrow \text{hash}()$        $\triangleright$  hash table: from candidates  $i$  to score
3:   for each key  $(i, j)$  in  $Q$  do
4:      $cands(i) \leftarrow Q(0, i) \cdot Q(i, j)$        $\triangleright Q(0, i)$  as prefix score
5:    $cands \leftarrow \text{SELECTTOPB}(\text{CANDS}, b)$        $\triangleright$  select top- $b$  by score
6:   for each key  $(i, j)$  in  $Q$  do
7:     if key  $i$  not in  $cands$  then
8:       delete  $(i, j)$  in  $Q$        $\triangleright$  prune out low-scoring states

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