function VITERBI(*observations* of len *T*,*state-graph*) **returns** *best-path*

   num-states ← NUM-OF-STATES(*state-graph*)
   Create a path probability matrix *viterbi[num-states+2,T+2]*
   viterbi[0,0] ← 1.0
   for each time step *t* **from** 0 **to** *T* **do**
     for each state *s* **from** 0 **to** *num-states* **do**
       for each transition s' from s specified by *state-graph*
         new-score ← *viterbi*[s, t] * $a[s,s']$ * $b_{s'}(o_t)$
         if ((*viterbi*[s',$t+1$] = 0) || (*new-score* > *viterbi*[s', $t+1$]))
            then
               viterbi[s', $t+1$] ← *new-score*
               back-pointer[s', $t+1$] ← s
   Backtrace from highest probability state in the final column of *viterbi[]* and
return path