1. (5 points) Complete the timing diagram shown below for the given circuit.
2. (5 points) The simulation output below shows selected signals from the processor introduced in section 1 of the course notes. Label each of the arrows at the bottom of the simulation output with the letter for the best matching description from the list below.

A. Add 5 to the accumulator.
B. Fetch a direct load instruction.
C. Store the value 4 in memory location 0023.
D. Fetch an immediate load instruction.
E. Branch to location 0006.

0000  halt – halt execution
0001  negate – $ACC := -ACC$
1xxx  immediate load – if sign bit of xxx is 0 then $ACC := 0xxx$ else $ACC := fxxx$
2xxx  direct load – $ACC := M[0xxx]$
3xxx  indirect load – $ACC := M[M[0xxx]]$
4xxx  direct store – $M[0xxx] := ACC$
5xxx  indirect store – $M[M[0xxx]] := ACC$
6xxx  branch – $PC := 0xxx$
7xxx  branch if zero – if $ACC = 0$ then $PC := 0xxx$
8xxx  branch if positive – if $ACC > 0$ then $PC := 0xxx$
9xxx  branch if negative – if $ACC < 0$ then $PC := 0xxx$
axxx  add – $ACC := ACC + M[0xxx]$