1. The simulation output below is from the basic processor running a program. The boxes outline selected instructions. Identify each of these instructions that are being executed. Note that parts of the simulation output have been obscured to make the problem more interesting. For each instruction, give the name of the instruction and its numerical value (for example, 1023 for a direct load from location 023). In some cases, there may be more than one possibility. Identify the different possibilities, when this is the case. The instruction set for the basic processor is on the reverse side of this page.
0000  halt execution
0001  negate the value in the ACC
1xxx  change the value of the ACC to xxx
2xxx  load the contents of memory location xxx into the ACC
3xxx  load the ACC from the memory location whose address is stored in memory location xxx
4xxx  store the value in the ACC in memory location xxx
5xxx  store the value in the ACC in the memory location whose address is stored in memory location xxx
6xxx  change the value of the PC to xxx
7xxx  change the value of the PC to xxx if ACC = 0
8xxx  change the value of the PC to xxx if ACC > 0
9xxx  change the value of the PC to xxx if ACC < 0
axxx  add the value in memory location xxx to the ACC