4-7\_dDB\_version (This problem is essentially similar to Problem 4-7 in your textbook with , , and .)

\*A sequential circuit has three D-flip-flops named instances FF2, FF1, and FF0. It also has one input labeled and three outputs labeled , and .  
  
Flip-flop instance FF2 has its input connected to a wire labeled . It also has its output connected to a wire labeled and its output connected to a wire labeled . Instances FF1 and FF0 are connected similarly to wires labeled to correspond to the number in the instance’s name. The present state variable is defined as . All three flip-flops have their (or “clock”) inputs connected to a wire labeled which is driven by an external clock generator that provides a periodic square-wave clock signal similar to the signal shown in Figure 4-25 on page 234 of your textbook.

The combinational portion of the sequential circuit is described by the following six equations:

(a) Derive the state table (in binary-coded format) for this state machine.

(b) Derive a flowchart for this state table.

.