CHAPTER 5: PART II

Design Procedure of Sequential circuit

i. Problem is stated
ii. Obtain the state table
iii. State reduction
iv. Assign binary values to each state
v. Determine the number of FFs needed (from the number of states) and assign a letter symbol to each
vi. Choose the type of FF to be used (suggestions: for general application use JK FF, requiring transfer of data use SR/D FF, involving complementation use T FF)
vii. Derive the excitation map
viii. Derive the circuit output function and the FF input function
ix. Draw the logic diagram

Analysis of Clocked Sequential Circuits: Terminology

- *State Equation:* A state equation (transition equation) specifies the next state as a function of the present state and inputs.
- *State Table:* A state table (transition table) consists of: present state, input, next state and output.
- *State Diagram:* The information in a state table can be represented graphically in a state diagram. The state is represented by a circle and the transitions between states are indicated by directed lines connecting the circles.