Design of Asynchronous Sequential Circuit:1. Obtain a primitive flow table from the given design specifications2. Reduce the flow table by merging rows in the primitive flow table. This is also called as Statereduction technique.3. Assign binary state variables to each row of the reduced flow to obtain the transition table.This is also called as state assignment.4. Assign output values to the dashes associated with the unstable states to obtain the output map5. Simplify the Boolean functions of the excitation and output variables and draw the logicdiagram.State Reduction Techniques:

„

Two states are equivalent if they have the same output and go to the same (equivalent) next statesfor each possible input.PresentState Next State Outputx=0 x=1 x=0 x=1a c b 0 1 b d a 0 1c a d 1 0d b d 1 0Ex: (a,b) are equivalent (c,d) are equivalent.State reduction procedure is similar in both sync. & async. sequential circuits.For completely specified state tables: -> use implication table

„

 For incompletely specified state tables:-> use compatible pairsImplication table method:

„

 Step 1: build the implication chartStep 2: delete the node with unsatisfied conditions

„

 Step 3: repeat Step 2 until equivalent states found

