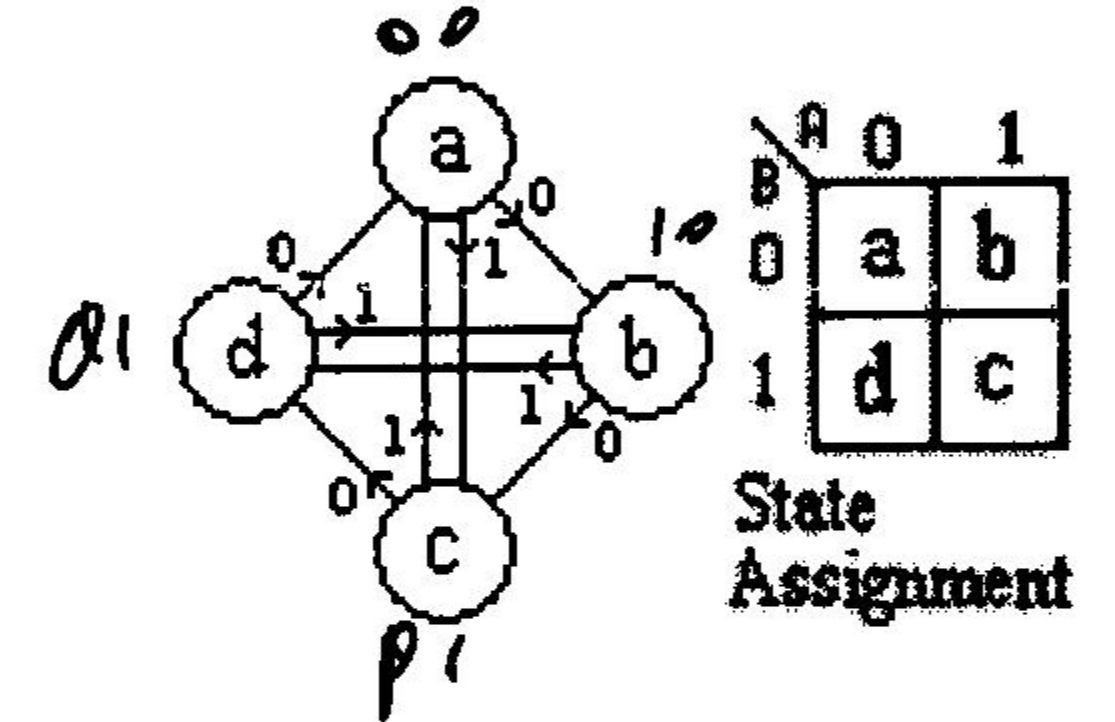
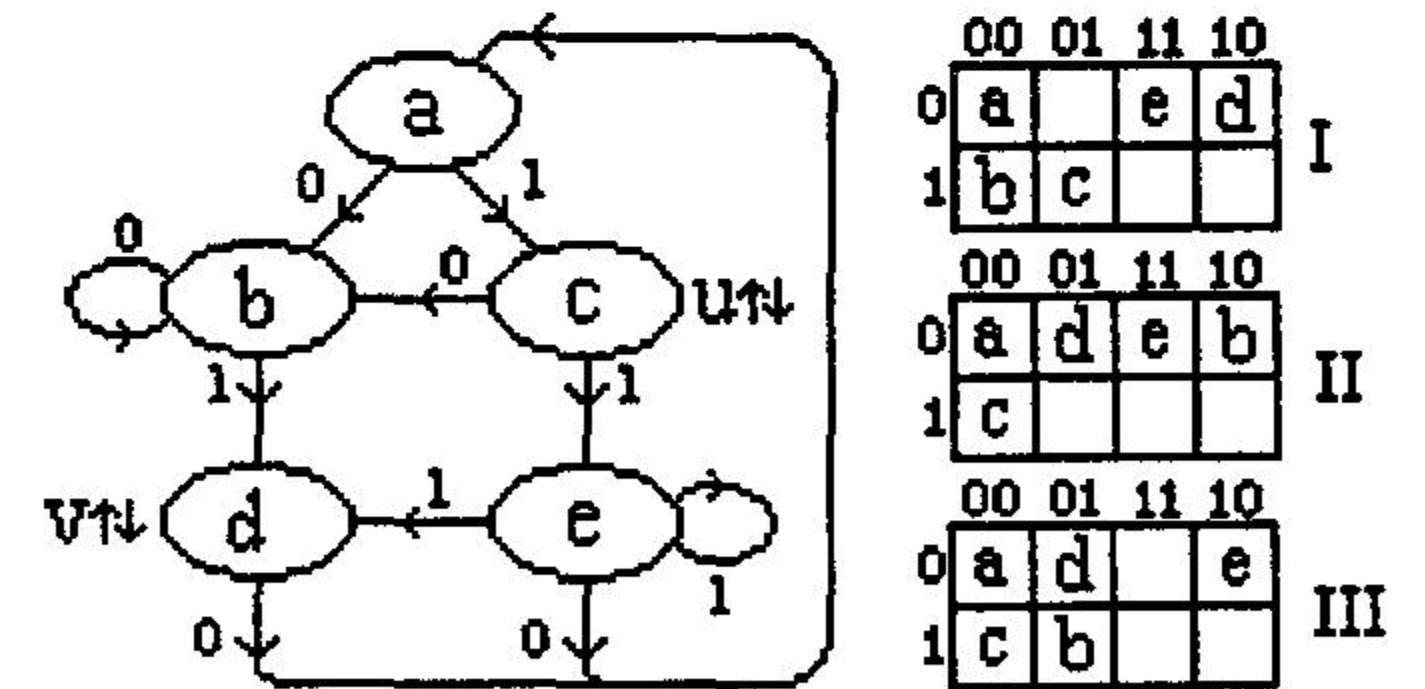


PHY 233
Quiz II

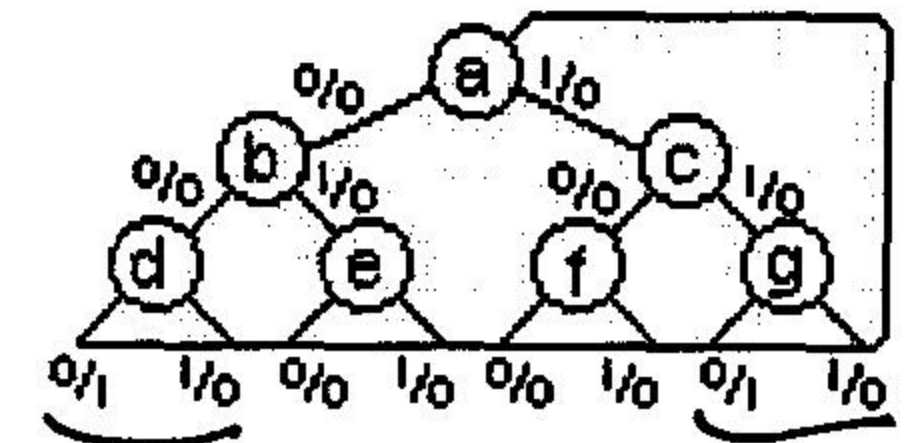
1. The figure shows a flow chart and its state assignment. The input is \bar{x}
- Prepare the present state-next state charts (3 pts.)
 - Prepare the Karnaugh Maps for D_A and D_B (6 pts.)
 - Convert the D_B map to JK maps (6 pts.)
 - Realize the circuit by Mux implementation (6 pts.)



2. In the state transition diagram u & v are outputs
- What are the priorities in the state assignment map I? (6 pts.)
 - What are the priorities in the state assignment map II? (6 pts.)
 - What are the priorities in the state assignment map III? (6 pts.)



3. For the state transition diagram shown
- Reduce the number of states by the method of grouping. (12 pts.)
 - Draw the reduced state transition diagram. (5 pts.)

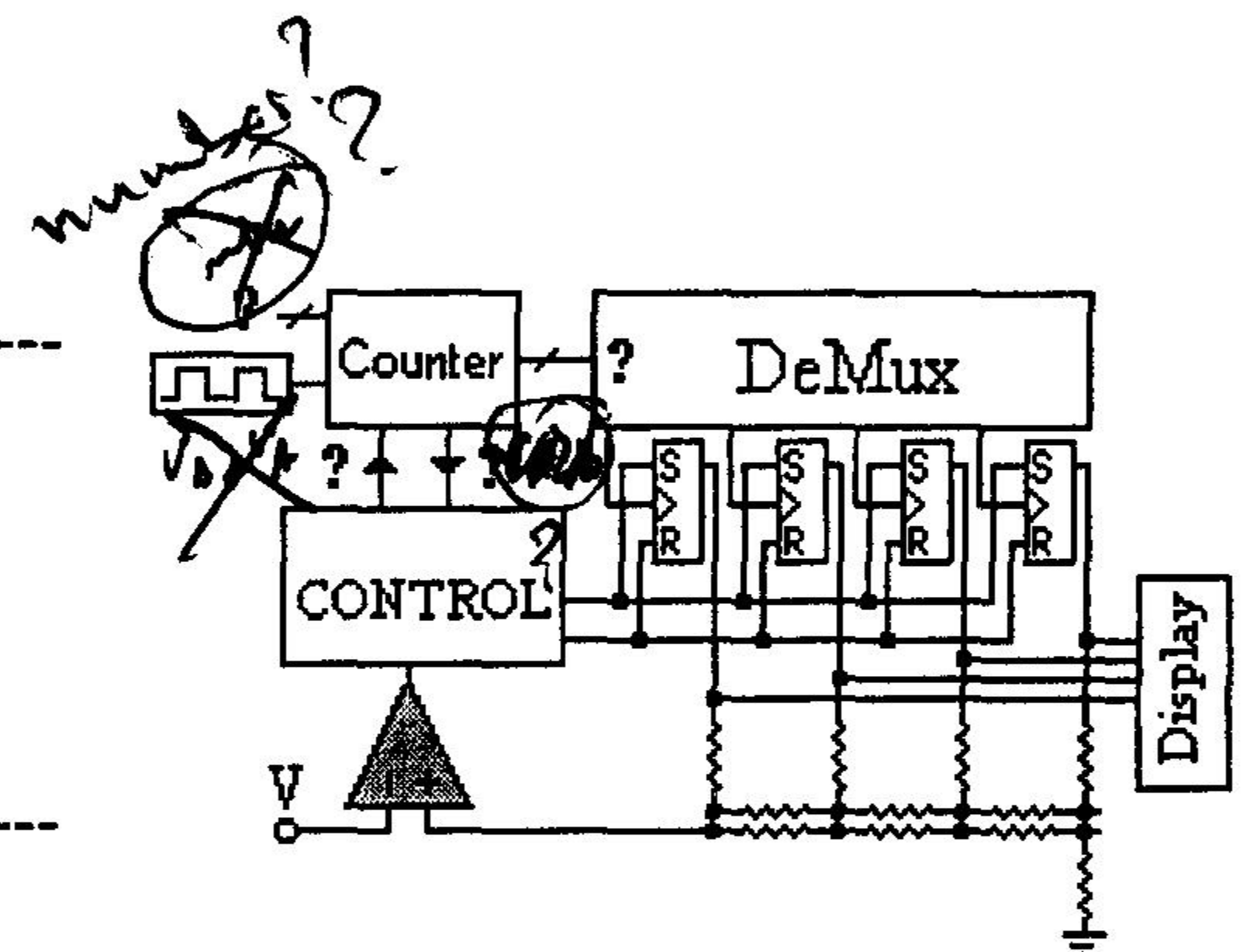


4. Answer 5 of the following 8 questions briefly:

(5x3 = 36 pts.)

- Why is clock suppression used?
- Why are Multiplexers used at the input of ADC's?
- Why is the Implication Chart method less useful than the grouping method?
- Why is the IFL of a Decade counter more complicated than that of a 4-bit MOD 16 Binary counter?
- What is the number of distinct state assignments for the ASM in Question 1?
- Why is it unwise to branch on >1 asynchronous input?
- How do registers help to remove glitches at the output?
- Define "reduced input dependency"

5. The figure shows an ADC
- Identify the 4 question marks (5 pts.)
 - Describe the operation of the circuit (5 pts.)



Good Luck

$21 + 18 + 17 + 36 + 10 = 102$