

Name:

MSU PID:

a) Give the sequence derived from your MSU PID:

b) Complete the following truth tables to describe the Boolean functions which form the basis for your circuits. For each function, replace the hyphens with the appropriate entry (0, 1 or d), where 'd' represents the "don't care" condition.

Current				Next			
w	x	y	z	W()	X()	Y()	Z()
0	0	0	0	-	-	-	-
0	0	0	1	-	-	-	-
0	0	1	0	-	-	-	-
0	0	1	1	-	-	-	-
0	1	0	0	-	-	-	-
0	1	0	1	-	-	-	-
0	1	1	0	-	-	-	-
0	1	1	1	-	-	-	-
1	0	0	0	-	-	-	-
1	0	0	1	-	-	-	-
1	0	1	0	-	-	-	-
1	0	1	1	-	-	-	-
1	1	0	0	-	-	-	-
1	1	0	1	-	-	-	-
1	1	1	0	-	-	-	-
1	1	1	1	-	-	-	-

c) Complete the following Karnaugh maps for your Boolean functions. For each input combination, replace the hyphen with the appropriate entry (0, 1 or d).

W()		y'z'		y'z		yz		yz'	
-----+									
w'x'		-		-		-		-	
+-----+									
w'x		-		-		-		-	
+-----+									
wx		-		-		-		-	
+-----+									
wx'		-		-		-		-	
+-----+									

X()		y'z'		y'z		yz		yz'	
-----+									
w'x'		-		-		-		-	
+-----+									
w'x		-		-		-		-	
+-----+									
wx		-		-		-		-	
+-----+									
wx'		-		-		-		-	
+-----+									

Y()		y'z'		y'z		yz		yz'	
-----+									
w'x'		-		-		-		-	
+-----+									
w'x		-		-		-		-	
+-----+									
wx		-		-		-		-	
+-----+									
wx'		-		-		-		-	
+-----+									

Z()		y'z'		y'z		yz		yz'	
-----+									
w'x'		-		-		-		-	
+-----+									
w'x		-		-		-		-	
+-----+									
wx		-		-		-		-	
+-----+									
wx'		-		-		-		-	
+-----+									

d) Give the minimized (simplified) expression for each of the Boolean functions.

$$W(w,x,y,z) =$$

$$X(w,x,y,z) =$$

$$Y(w,x,y,z) =$$

$$Z(w,x,y,z) =$$