Student Id:
Name Surname:
Signature:

25.02.2016

BLG311E – FORMAL LANGUAGES AND AUTOMATA

2016 SPRING

QUIZ 1

Reduce the state machine whose transition table is given on the right using complete cover and draw the transition table for the reduced machine.
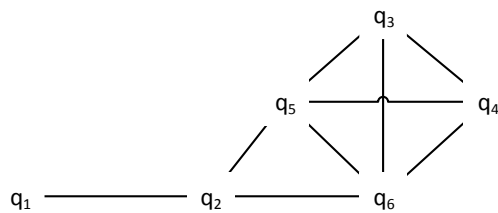
	a	b
q_1	$q_1/0$	$q_5/1$
q_2	$q_1/0$	-/-
q_3	$q_3/0$	$q_1/0$
q_4	$q_4/0$	$q_1/0$
q_5	-/-	$q_1/0$
q_6	-/-	$q_2/0$

Duration: 20 mins

Solution:

q_1					
√	q_2				
X	(q_1,q_3) X	q_3			
X	(q_1,q_4) X	√	q_4		
X	√	√	√	q_5	
X	√	(q_1,q_2) √	(q_1,q_2) √	(q_1,q_2) √	q_6

Dependency Graph:

Complete Cover:

$s_1 = \{q_1,q_2\}$
$s_2 = \{q_2,q_5,q_6\}$
$s_3 = \{q_3,q_4,q_5,q_6\}$

Reduced State Transition Table:

	a	b
s_1	$s_1/0$	$s_2,s_3/1$
s_2	$s_1/0$	$s_1/0$
s_3	$s_3/0$	$s_1/0$