

 Virtual U	CS402- Theory of Automata ASSIGNMN-2 JUNAID MALIK	
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Question No: 1

a) Consider the following sequential circuit.



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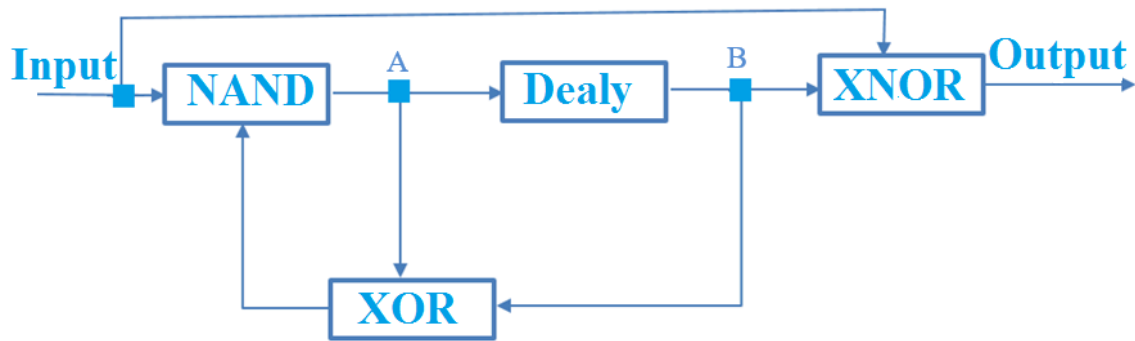
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If

Input=0

Old A= 1

Old B= 0

Then find:

1. New Value of A
2. New Value of B
3. Value of Output

Solution:

New B = old A = 1

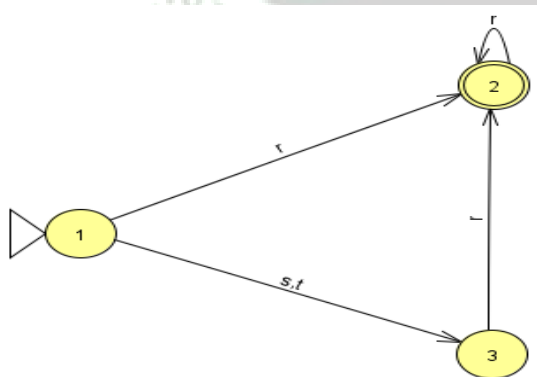
New A = (input) NAND (old A XOR old B)

New A = 0 NAND (1 XOR 0) = 0 NAND 1 = 1

Output = (input) XNOR (old B) = 0 XNOR 0 = 1

- a) Consider the following TG_1 and TG_2 and find the resultant TG_r which is equal to the Union of TG_1 and TG_2 .

TG_1 :



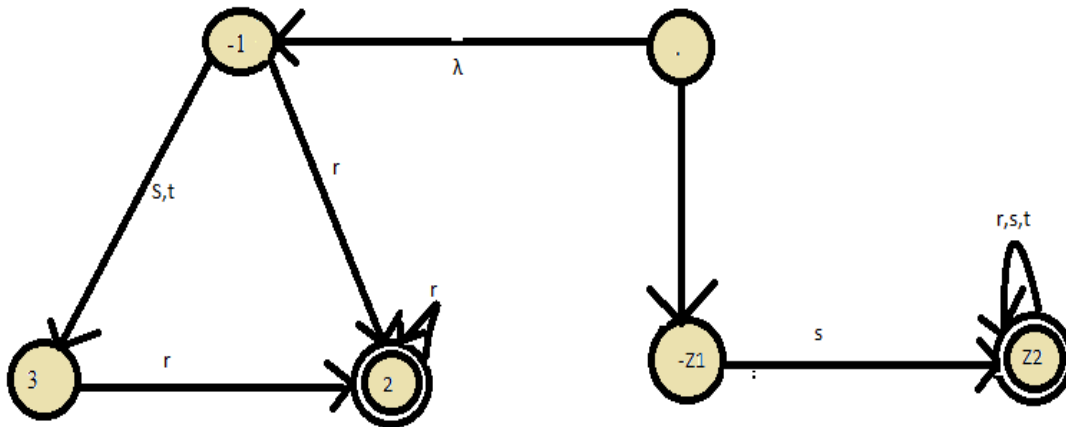
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TG2:



Solution:

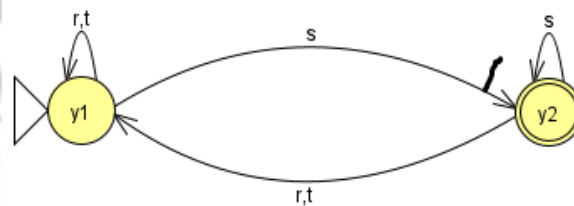
TGr



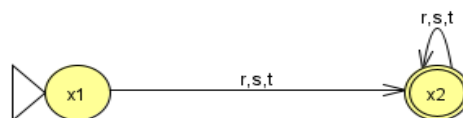
Question No: 2

- a) Find the intersection of the following FAs by short method. Also provide transition table and Transition diagram as well.

FA1:



FA2:

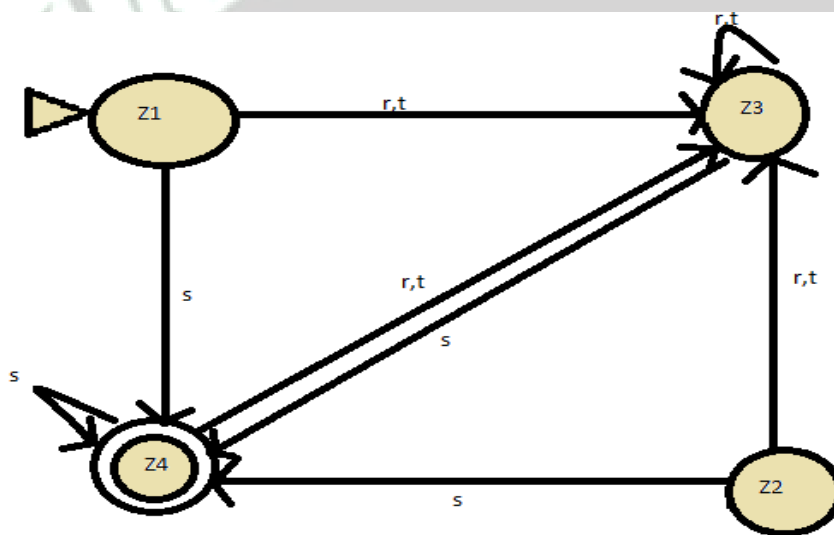


Transition Table:

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	R	S	T
$-z1 = (x1,y1)$	$Z3 = (x2,y1)$	$Z4 = (x2,y2)$	$Z3 = (x2,y1)$
	$Z3 = (x2,y1)$	$Z4 = (x2,y2)$	$Z3 = (x2,y1)$
	$Z3 = (x2,y1)$	$Z4 = (x2,y2)$	$Z3 = (x2,y1)$
	$Z3 = (x2,y1)$	$Z4 = (x2,y2)$	$Z3 = (x2,y1)$

Transition diagram:



b) Find the complement of the FA obtained in Part(a):

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