

CSM51A/EE 16 Fall 2018: Quiz 1

Duration: 30 minutes

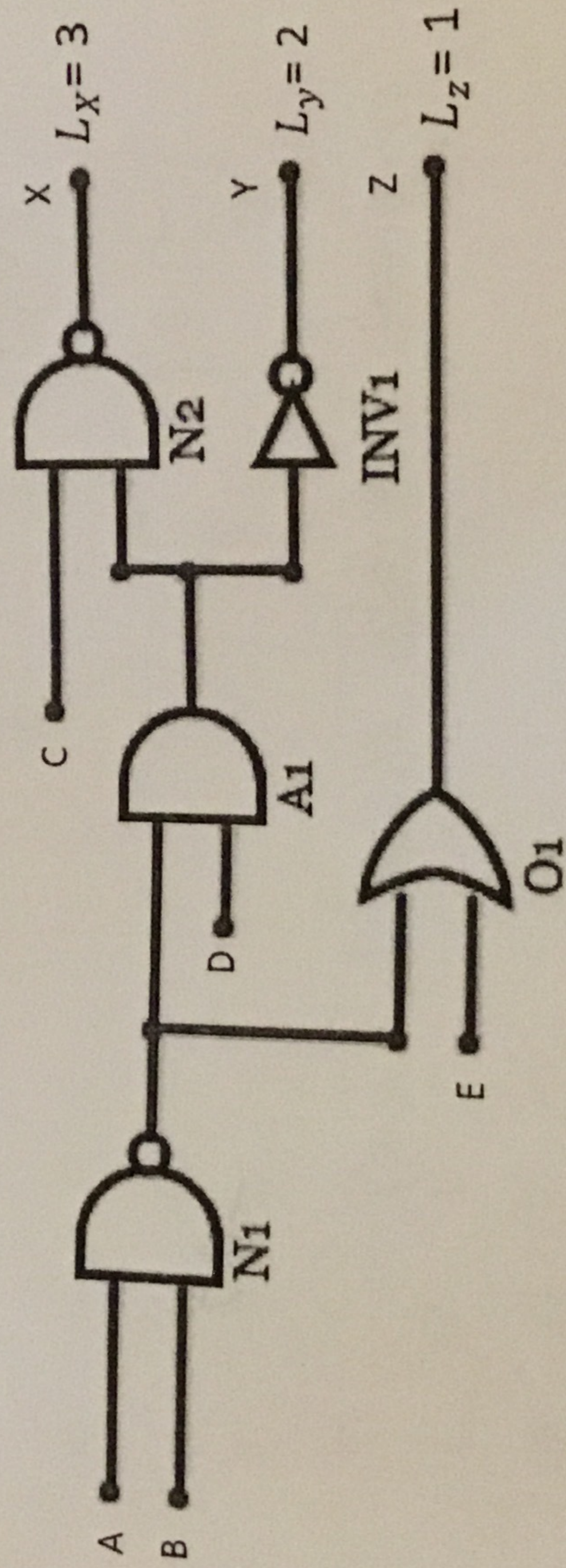
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Problem 1

(5 points)

Given the circuit shown below:



Determine the critical delay of the circuit in terms of tp_{LH} and tp_{HL} . Provide all the necessary calculations. The necessary gate characteristics are given below:

Gate	Fan-In	tp_{LH}	tp_{HL}	Load Factor
AND	2	$0.2 + 0.04L$	$0.2 + 0.02L$	1
NOT	1	$0.03 + 0.04L$	$0.05 + 0.02L$	1
NAND	2	$0.05 + 0.04L$	$0.08 + 0.02L$	1