**Ripple Counter**

**Lab no #11**

** Fall 2019**

**Fall 2021**

**CSE202L Digital logic and computer design**

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Class Section: **B**

“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

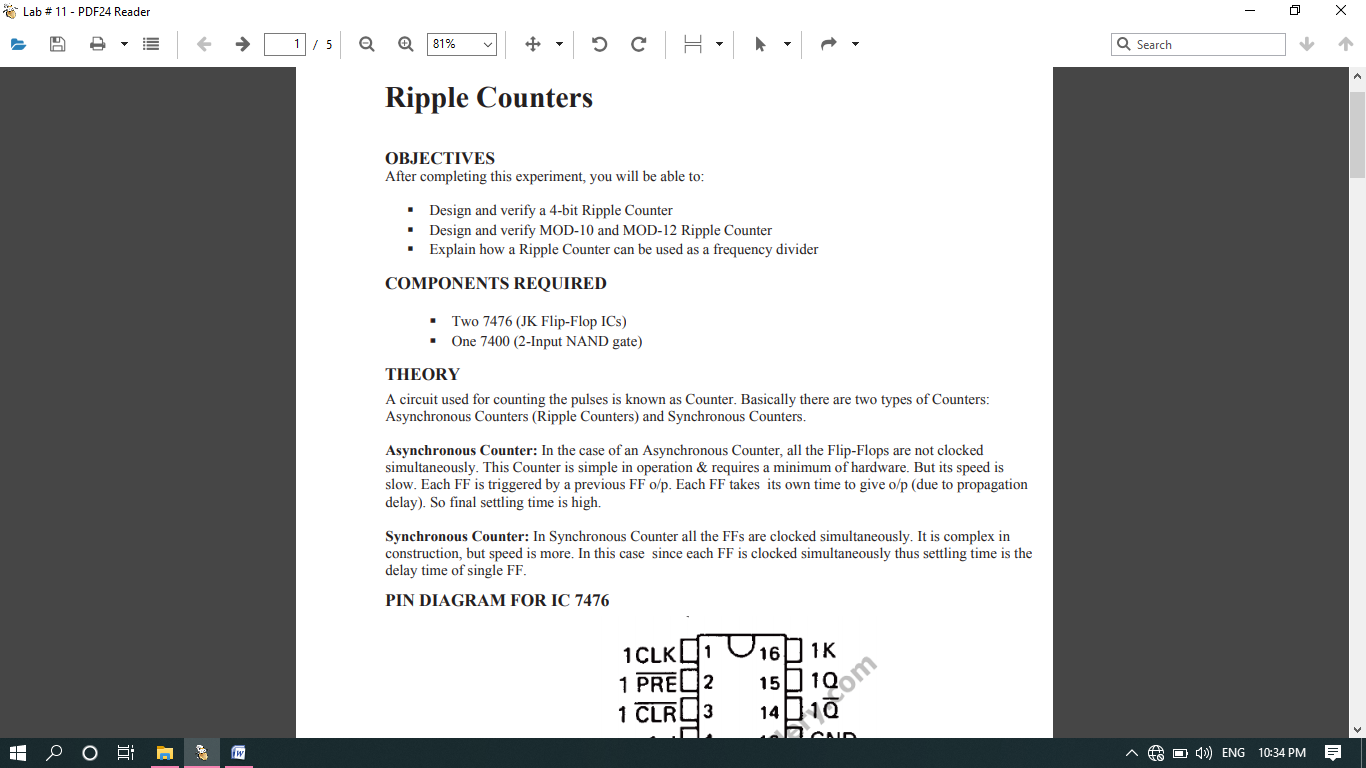
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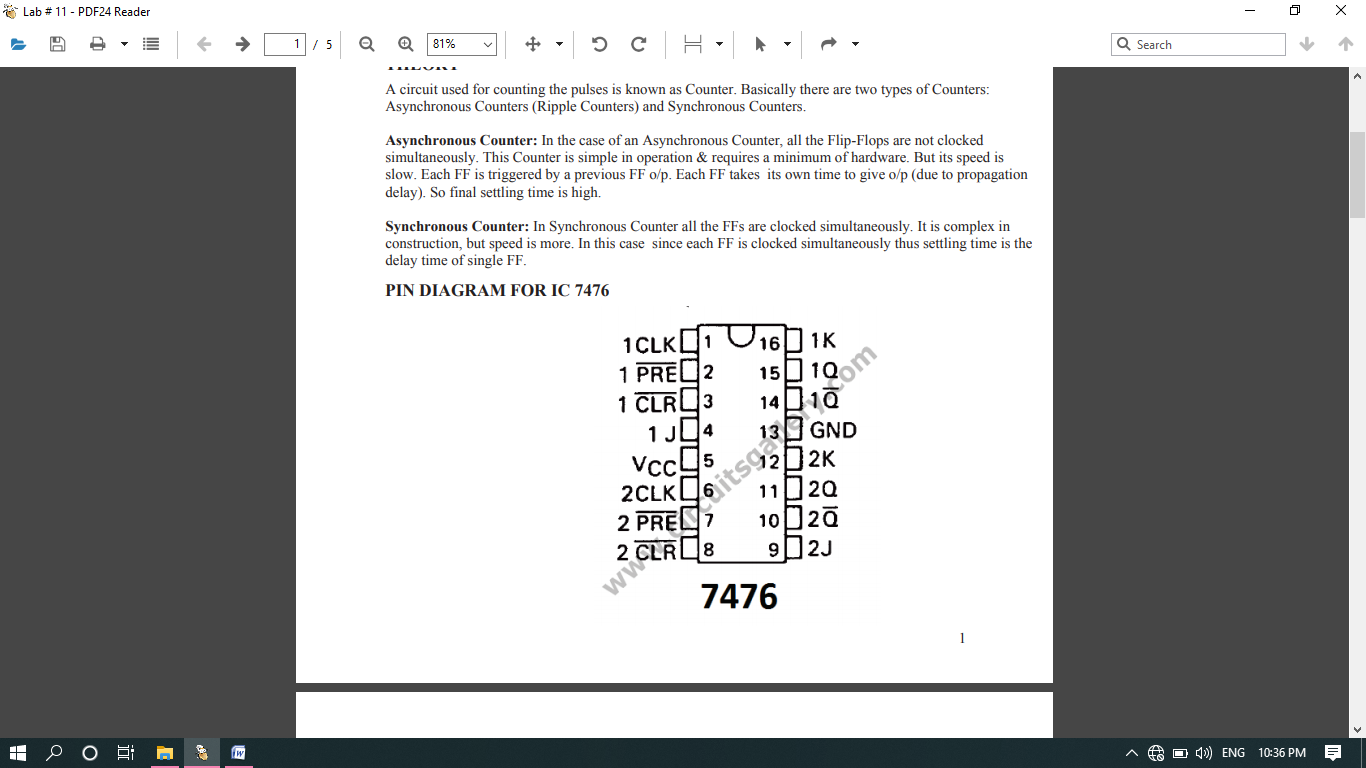
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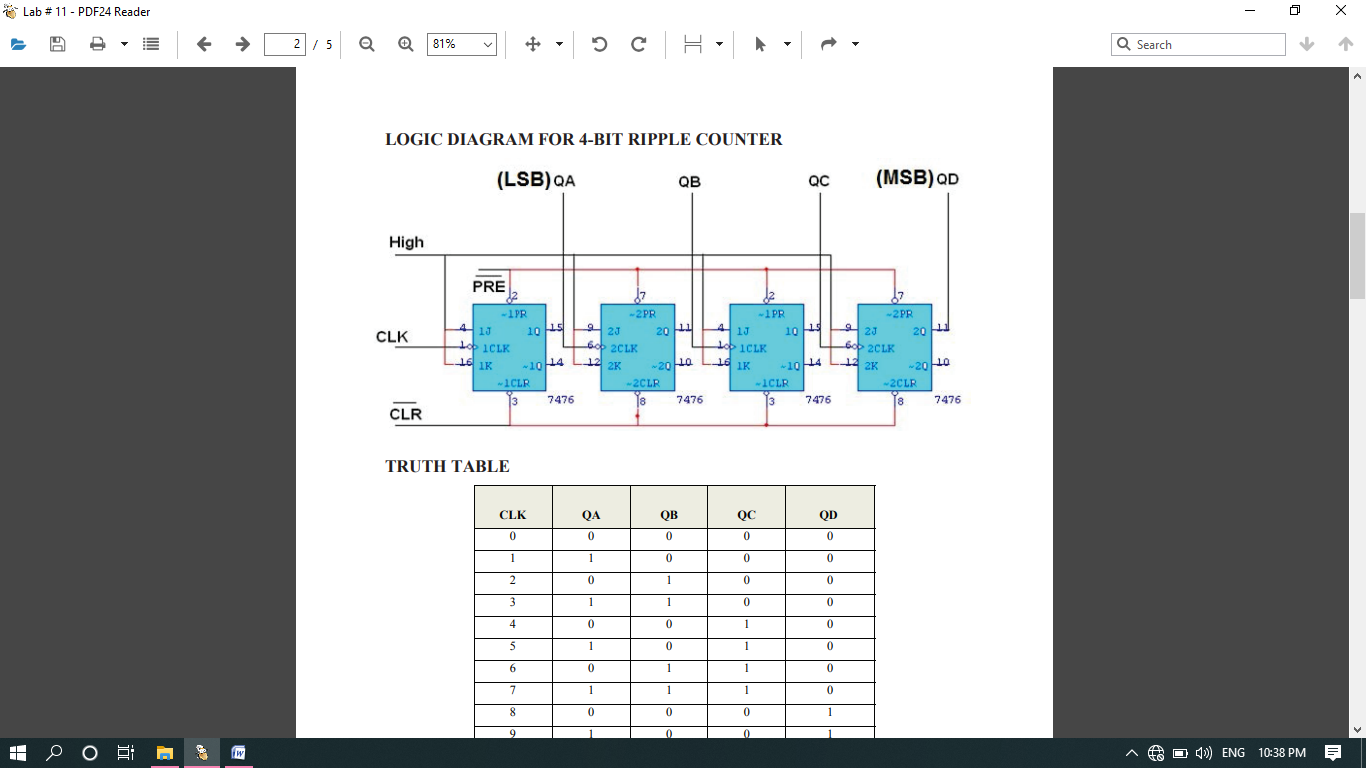
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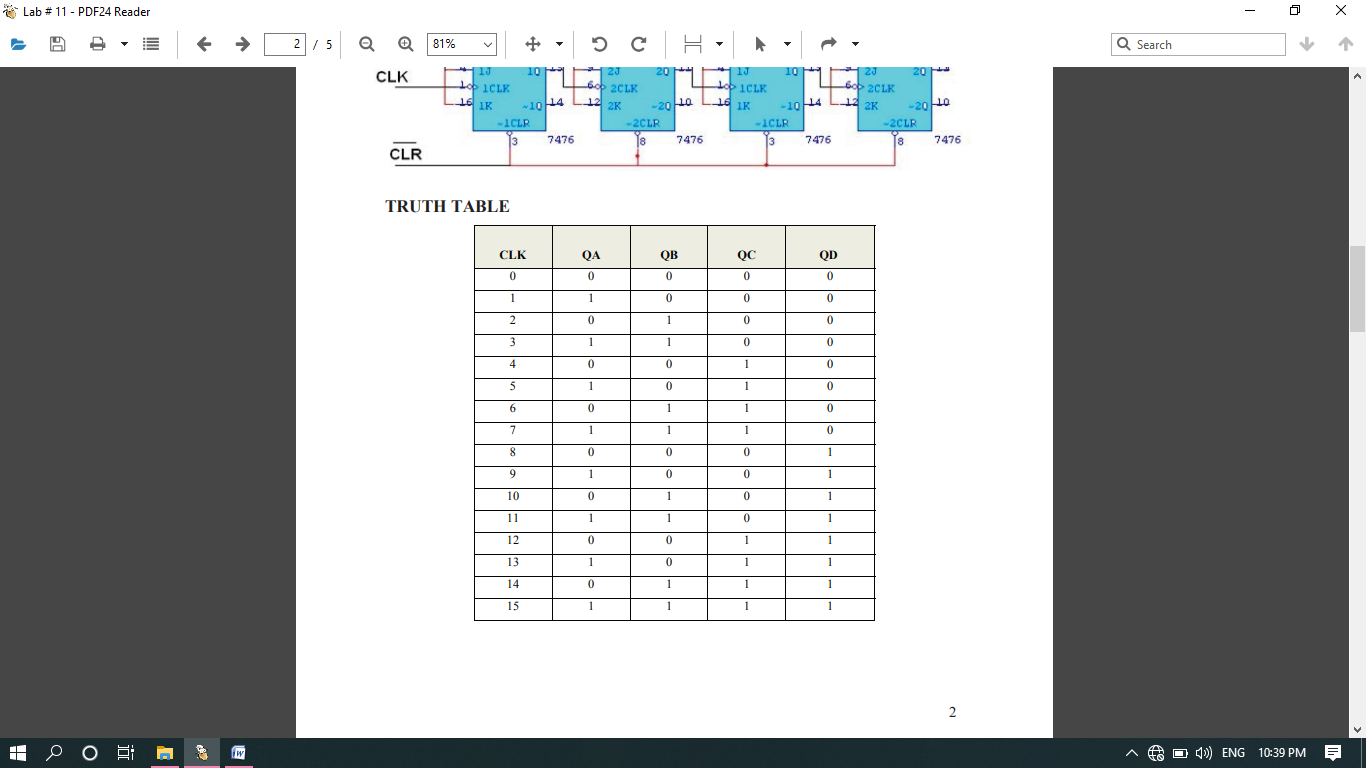
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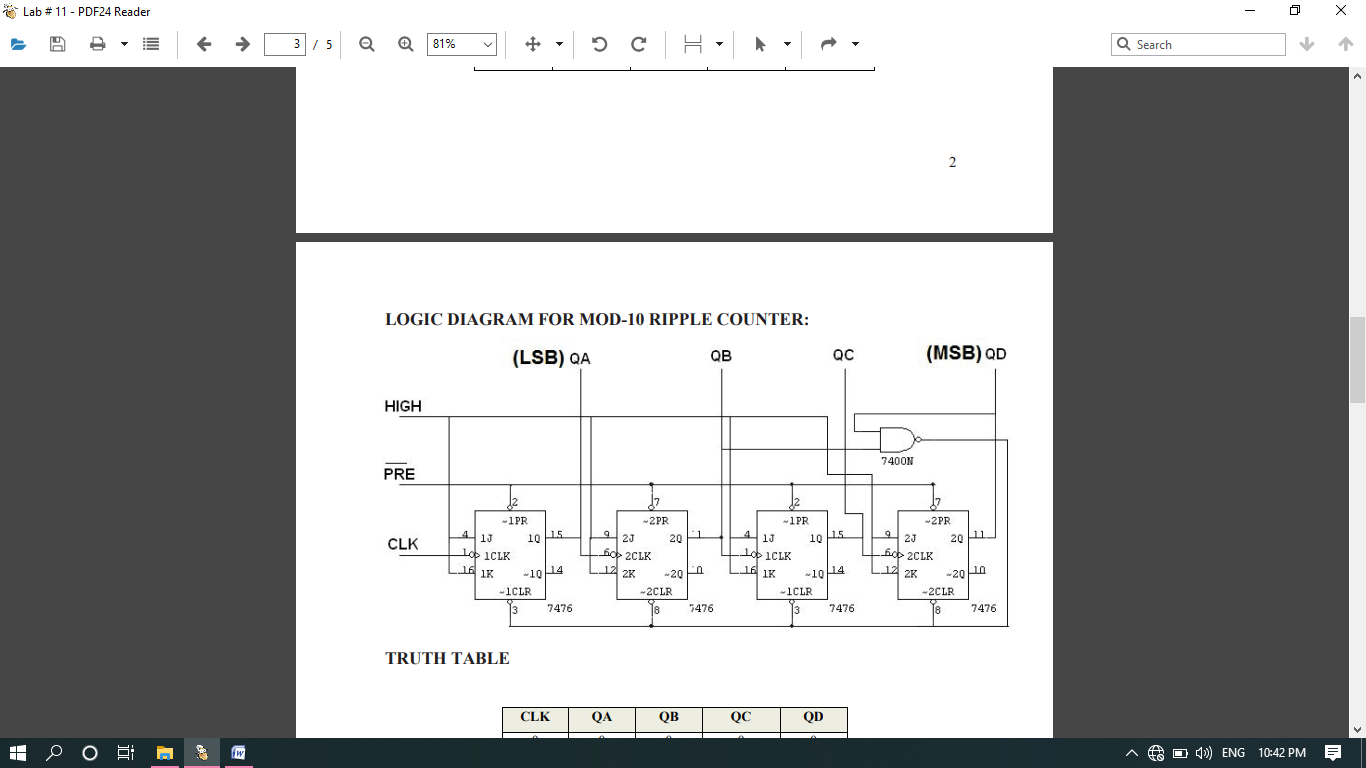
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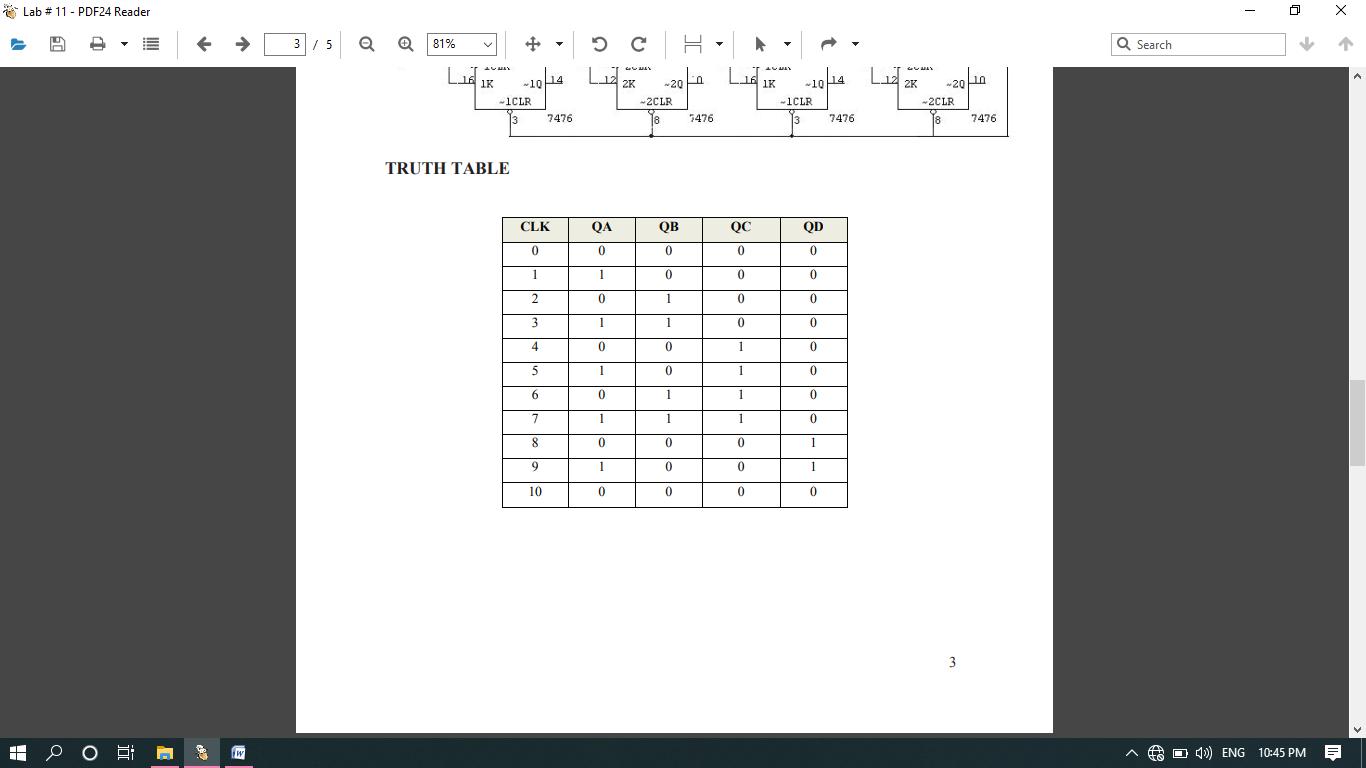


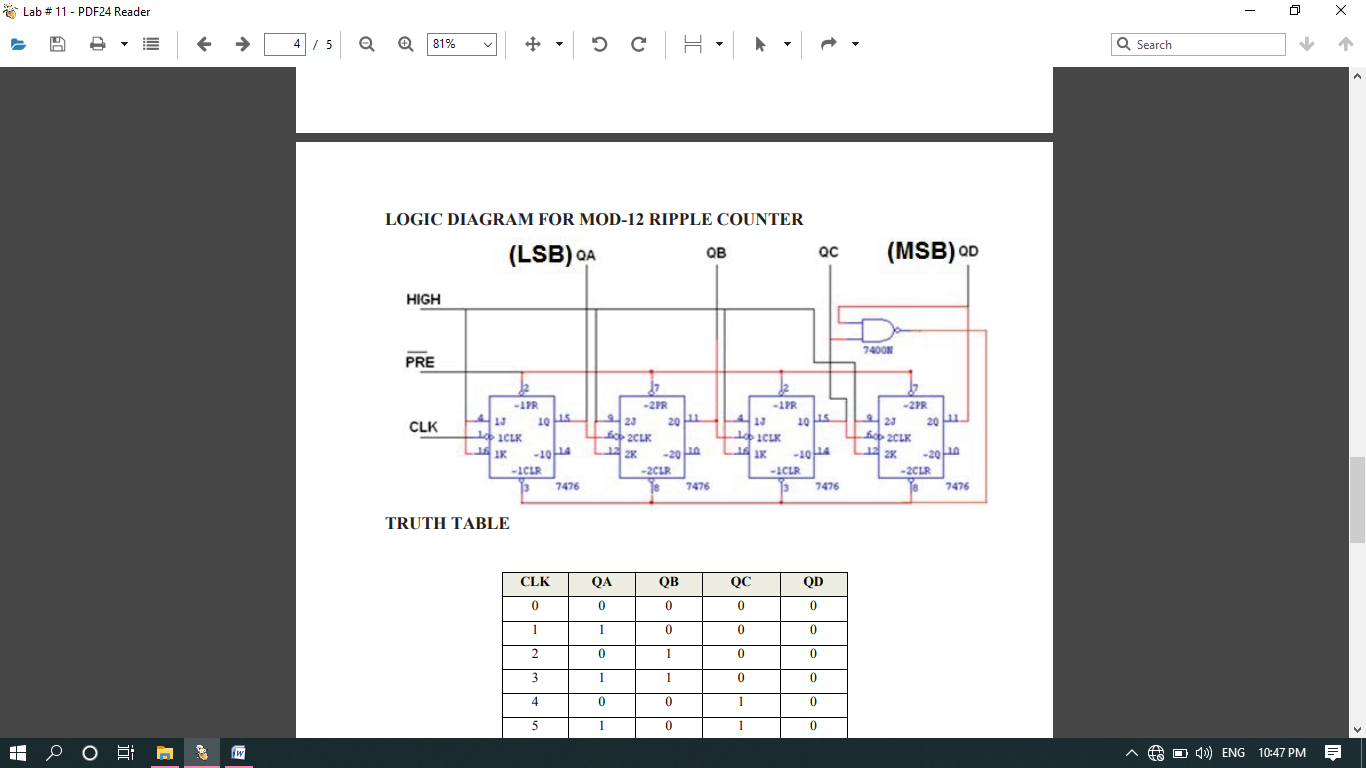
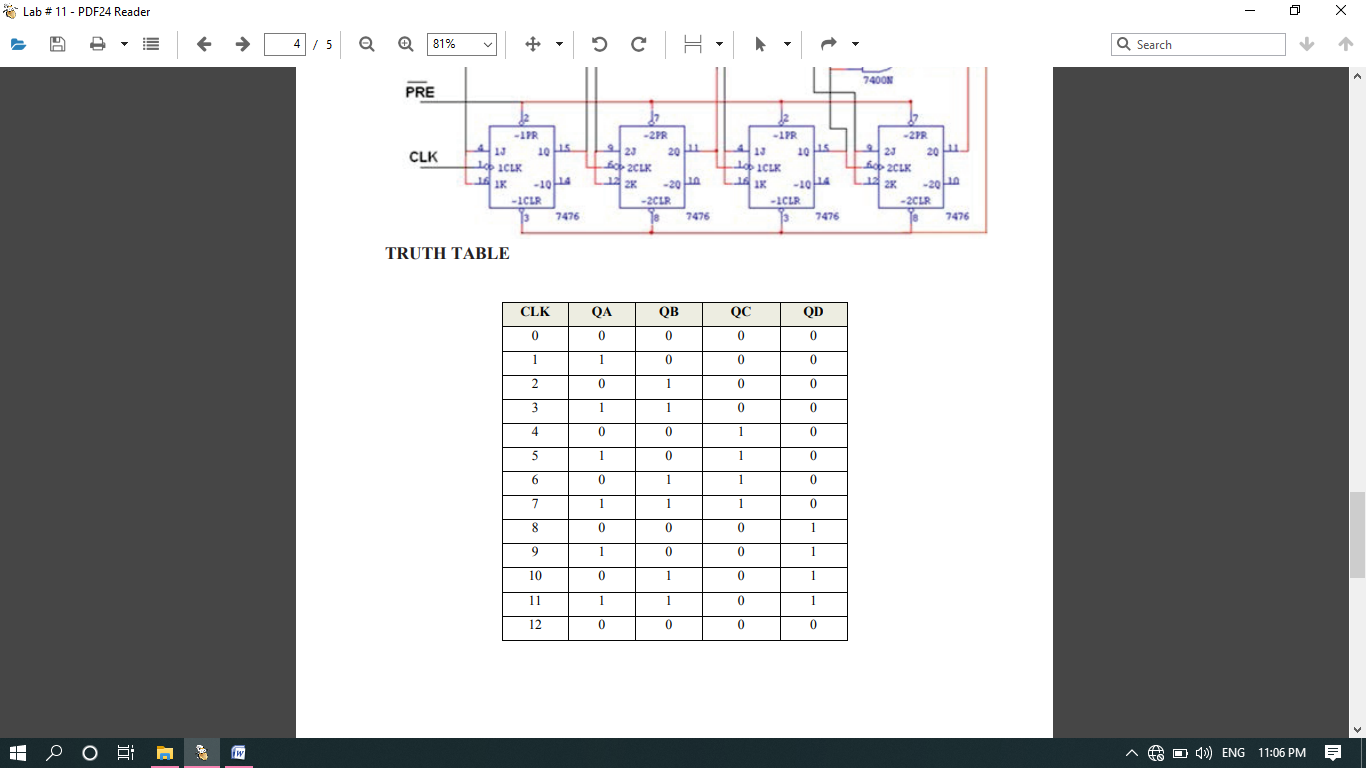










PROCEDUR:

Connections are given as per circuit diagram.

 Logical inputs are given as per circuit diagram.

 Observe the output and verify the truth table.

REVIEW QUESTIONS

1. Counters can be used as frequency dividers. When the clock frequency in the 4-bit ripple counter given above is 1 kHz , what would the output frequency of Flip Flop A and Flip Flop B?

Answer:

fA= \_\_Half of the input frequency\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

fB= \_\_one fourth of the input frequency\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Would inverters on the clock inputs change the count direction of a 5 ripple counter?

Answer:

As synchronous counter circuit is dependent of the input clock so in case of synchronous inverter on clock input change the count direction of a 5 ripple counter while asynchronous is independent of the input clock so inverters on the clock inputs does not change the count direction of a 5 ripple counter.

1. How many Flip-Flops are needed to build a MOD-5 Counter?

Answer: 3 filp-flop needed to build a MOD-5 Counter.

***THE END***