99

Cpr E 281 LAB10
ELECTRICAL AND COMPUTER ENGINEERING
IOWA STATE UNIVERSITY

Lab 10 Answer Sheet

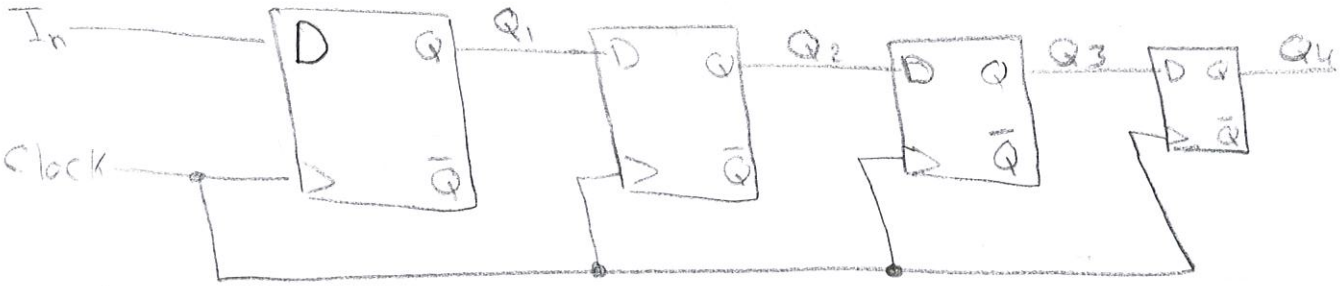
Name & Std No.: Hosam Abdellawab, 838973172 **Lab Section:** K

Date: Novemb

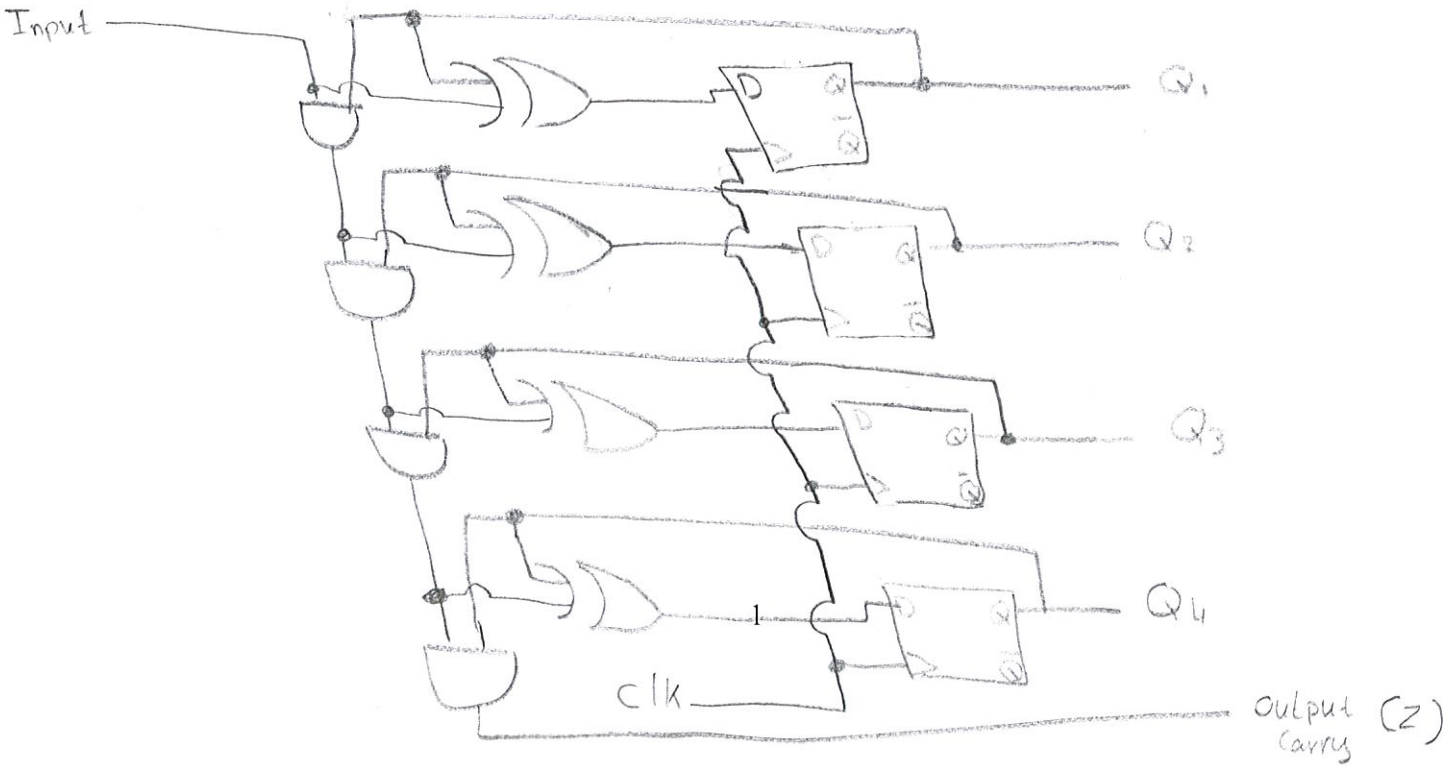
PRELAB:

Refer to Chapter 5 in your textbook and the lab instructions to complete your pre-lab. Please read all the material and complete the circuit diagrams before you come to the lab.

Q1. Draw the circuit diagram for the 4-bit **Shift Register** using D flip-flops in the space below.

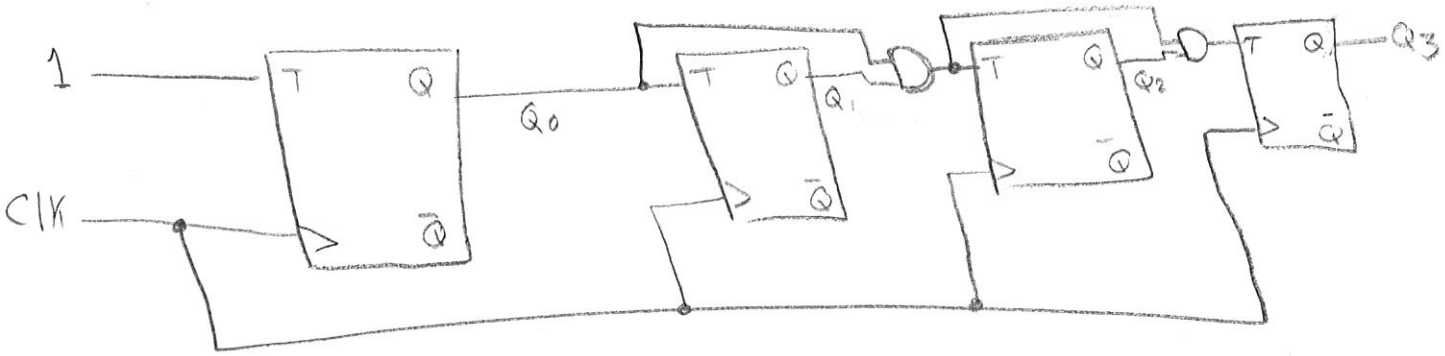


Q2. Draw the circuit diagram for the 4-bit **Synchronous Up-Counter** using **D flip-flops** in the space below.

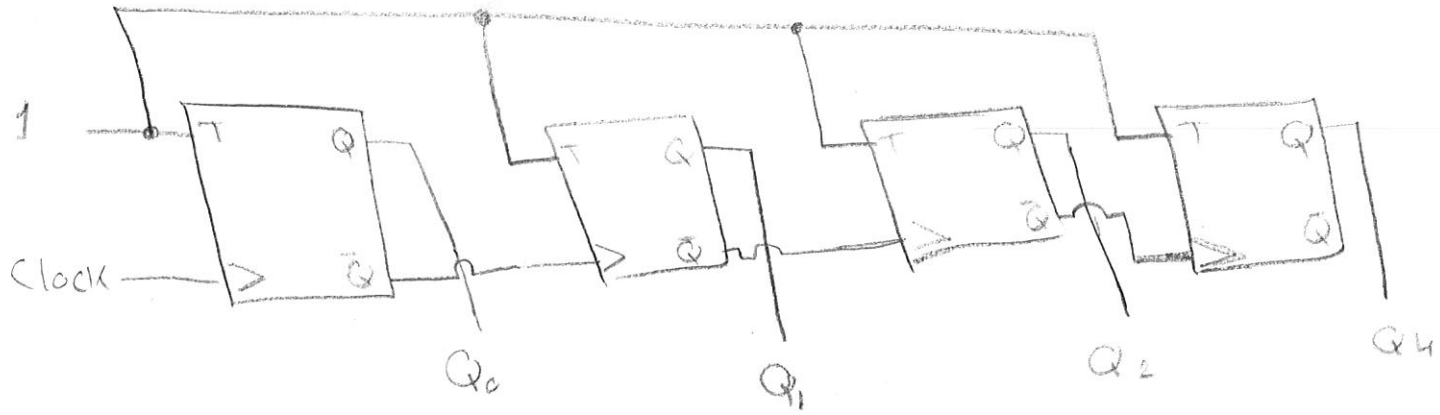


Lab 10 Answer Sheet

Q3. Draw the circuit diagram for the 4-bit **Synchronous Up-Counter** using **T flip-flops** in the space below.



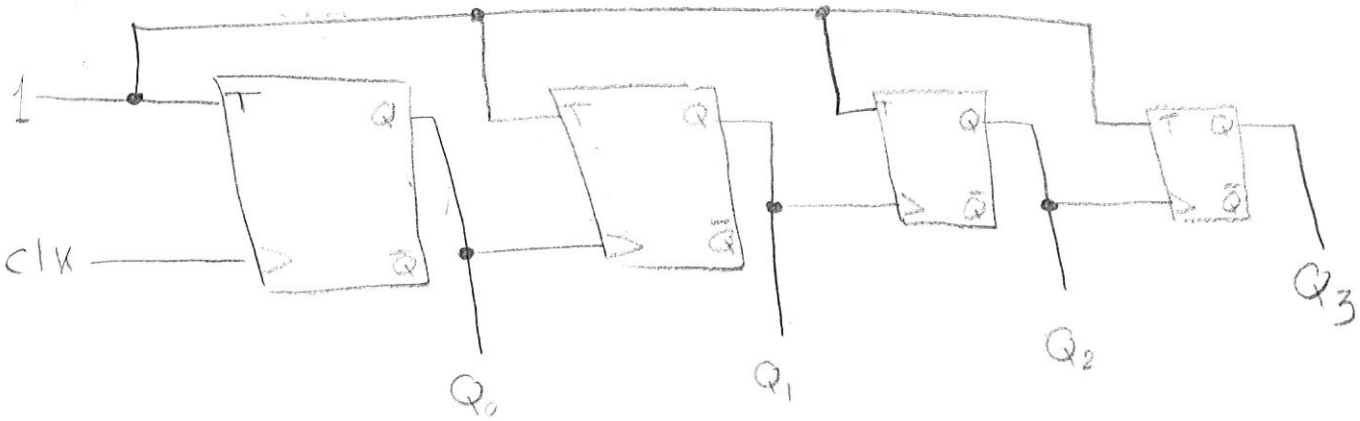
Q4. Draw the circuit diagram for the 4-bit **Asynchronous Up-Counter** using T flip-flops in the space below.



Cpr E 281 LAB10
ELECTRICAL AND COMPUTER ENGINEERING
IOWA STATE UNIVERSITY

Lab 10 Answer Sheet

Q5. Draw the circuit diagram for the 4-bit **Asynchronous Down-Counter** using T flip-flops in the space below.



LAB: MS.

2.0 Fill in the sequence table below. *Watch out for switch bouncing!*

In	Q1	Q2	Q3	Q4
t0 = 1	1	0	0	0
t1 = 0	0	1	0	0
t2 = 1	1	0	1	0
t3 = 1	1	1	1	0
t4 = 1	1	1	1	1
t5 = 0	0	1	1	1
t6 = 0	0	0	1	1
t7 = 0	0	0	0	1

Shift down one ↓ -1

Lab 10 Answer Sheet

Hardware results demonstrate a good circuit. TA Initials: MS

3.1 Hardware results demonstrate a good circuit. (D flip-flops) TA Initials: MS

Hardware results demonstrate a good circuit. (T flip-flops) TA Initials: AL

3.2 Seven segment shows 0 to F. (UP) TA Initials: AL

Seven-segment display shows F to 0. (DOWN) TA Initials: AL