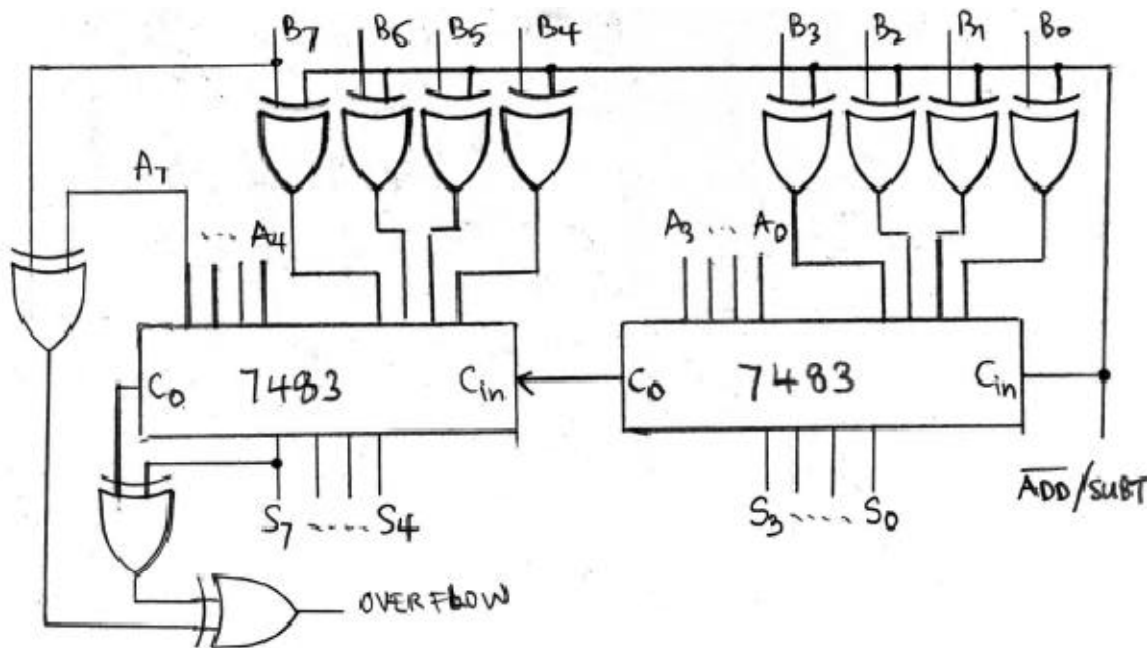


1. Build an 8 bit adder using single bit full adders.

(15 points)

2. Study 7483 datasheet. Build an equivalent logic-m model (4 bit Binary adder). Then extend model to 8-bit adder/subtractor with overflow detection(basic structure is shown).

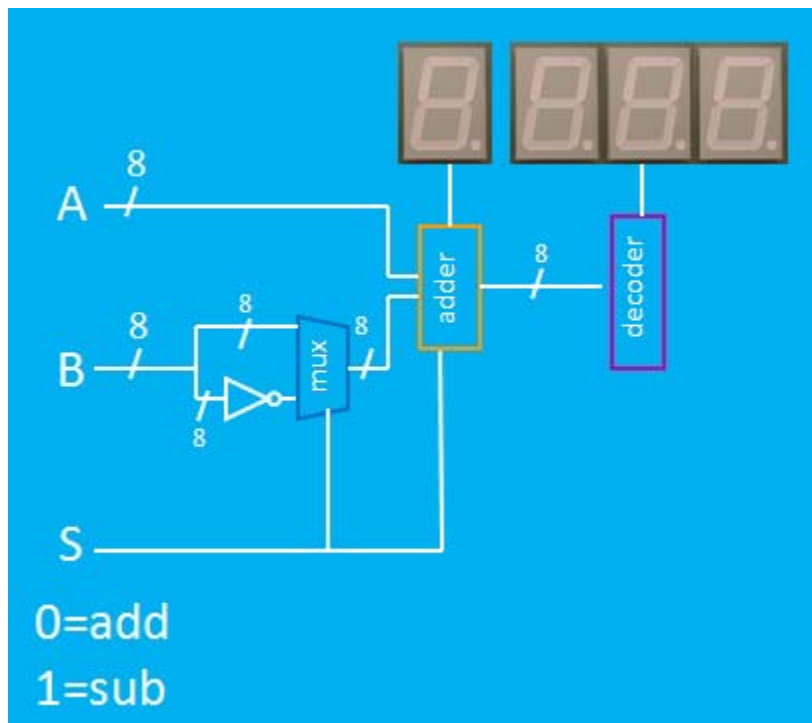


(25 points)

3. Design a 4 bit ALU which implements the following functionality (Addition, subtraction, AND & OR operating) . Use 4 bit adder/subtractor from basic problem 2. Assume: A: $a_3 a_2 a_1 a_0$; B: $b_3 b_2 b_1 b_0$.

(30 points)

4. Using the above relevant blocks, simulate the following.



(30 points)

Submission:

<https://u.pcloud.com/#page=puplink&code=Qzv7ZT0TJ1AtunJhkvdoQH42qBffGTm4y>

Submit your .circ file containing your various transistor-level/logic level implementations.

- The simulation files p1.circ, p2.circ, p3.circ, p4.circ,c
- Zip the above five files. Zip file name is your role number.

Due on : 9th Feb 2021, 11 PM