Cpr E 281 LAB08
ELECTRICAL AND COMPUTER ENGINEERING
IOWA STATE UNIVERSITY

Lab 8 Answer Sheet

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PRELAB:

Q1. Read section 2.2 and write the Verilog code for a 4-to-1 multiplexer.

```
module mux 4 to1 (W0, W1, W2, W3, S, F);
  input W0, W1, W2, W3;
  input [1:0]S;
  output F;
assign F= S[1]? (S[0]? W3:W2): (S[0]? W1:W0);
  end module
```

Q2. Design a 4-bit shifter as described in Section 3.1 of the lab description. Sketch the block diagram for your design showing the multiplexers, the inputs, outputs and the selectors to each multiplexer.

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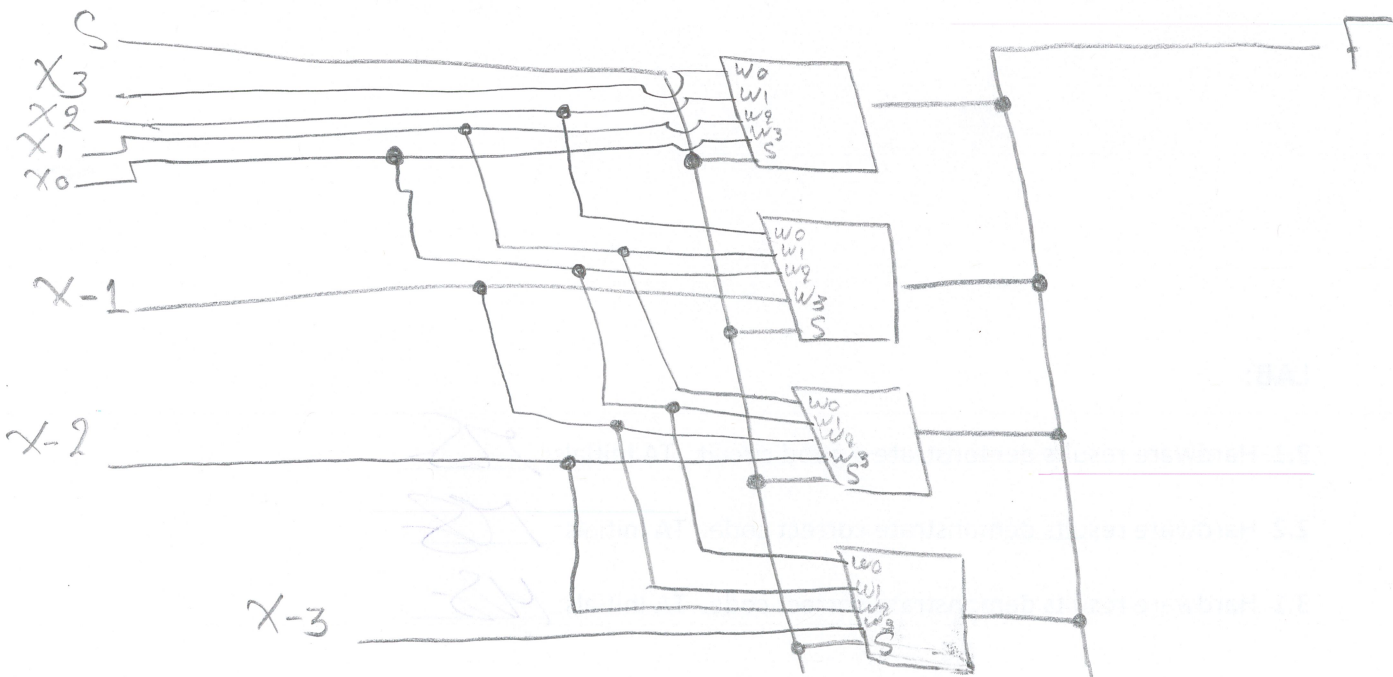
Q3. Refer to Section 3.1 of the lab description and complete the following table before you come to the lab:

X3	X2	X1	X0	X-1	X-2	X-3	S1	S0	F3	F2	F1	F0
1	0	0	1	1	1	0	0	1	0	0	1	1
1	1	1	0	0	0	0	1	1	0	0	0	0
1	1	1	0	0	1	1	0	0	1	1	1	0
1	1	0	1	0	1	0	1	0	0	1	0	1
1	0	1	1	0	1	1	0	1	0	1	1	0

TA Initials: _____

LAB:

2.1 Hardware results demonstrate a good circuit. TA Initials: _____

2.2 Hardware results demonstrate correct code. TA Initials: _____

3.1 Hardware results demonstrate correct code. TA Initials: _____

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