ECE-223, Assignment #5

1. Write a dataflow VHDL code for the full-adder.

2. Write a behavioural VHDL code for a 2-to-4 binary decoder. 309

3. Write a behavioural VHDL code for a 2-to1 multiplexer using if-then-else statement.

4. Write a behavioural VHDL code for a 2-to1 multiplexer case statement.

5. Write a behavioural VHDL code for a 3-bit ALU. Functionality of the ALU is shown in Table-1 also A and B are data inputs.

Operation	Control Input	Output
Clear	000	0000
B-A	001	B-A
A-B	010	A-B
ADD	011	A+B
XOR	100	A XOR B
OR	101	A OR B
AND	110	A AND B
Preset	111	1111

A

B

C

ALU

Output