

**DSD LAB Section A**  
ALU Specification Group 5

$S_2$	$S_1$	$S_0$	Operation
0	0	0	$B - A$
0	0	1	$B - 1$
0	1	0	$B + 1$
0	1	1	$A + B$
1	0	0	$A \cdot B$
1	0	1	$B'$
1	1	0	$A \text{ or } B$
1	1	1	$A \oplus B$

**Full Specification**

$S_2$	$S_1$	$S_0$	$C_{in}$	Operation	Type
0	0	0	0	$B - A - 1$	Arithmetic
0	0	0	1	$B - A$	Arithmetic
0	0	1	0	$B - 1$	Arithmetic
0	0	1	1	$B$	Arithmetic
0	1	0	0	$B$	Arithmetic
0	1	0	1	$B + 1$	Arithmetic
0	1	1	0	$B + A$	Arithmetic
0	1	1	1	$B + A + 1$	Arithmetic
1	0	0	X	$B \cdot A$	Logical
1	0	1	X	$B'$	Logical
1	1	0	X	$B \text{ or } A$	Logical
1	1	1	X	$B \text{ xor } A$	Logical