

- (b) (4 points) In the table below, give the settings of the control bits to implement the new **LSL** ARM instruction. Use Don't Cares where appropriate. If you need an extra control line to implement this instruction or if you need to increase the number of bits in a control line, add additional columns to the table for the new control line, split a column to increase the number of bits in a control line, and in either case include a note below explaining the effect of the new/increased control line(s) on the datapath and what its setting should be for other instructions. Make sure you do not break any other instructions. You should be able to determine the purpose and effects of each of the control signals from the datapath diagram on the previous page.

Type	Reg2 Loc	ALU Src	Mem ToReg	Reg Write	Mem Read	Mem Write	Brch	ALU Op1	ALU Op0	LSL
LSL	x	x	0	1	0	0	0	x	x	1

State the value of any new control signal(s) for all other ARM instructions: