

The MIC-1 bit format is shown below. You should be familiar with all the fields and how they are used. Also below are 4 MAL instructions. Indicate if a given MAL is valid or invalid for MIC-1, and, if valid, fill in the **DECIMAL** (i.e. bits 1101 are filled as 13) values for each field **in the space provided**. **If invalid, write below the figure why not, but in case you are wrong fill in as many of the fields as you can.**

Register designations are as follows: pc=0 (prog counter) ac=1 (accumulator) sp=2 (stack ptr) ir=3 (instr reg) tir=4 (tmp inst reg) zr=5 (fixed zero) po=6 (plus 1) no=7 (minus 1) amask=8 (addr msk) smask=9 (stack msk) a=10(a scratch) b=11(b scratch) c=12(c scratch) d=13(d scratch) e=14(e scratch) f=15(f scratch)

VALID?	A M U X	C O N D	A L U	S H	M B R	M A R	R D	W R	E N C	C	B	A	ADDR

AMUX  
0=A latch  
1=MBR

COND  
0 = no jmp  
1 = jmp if n=1  
2 = jmp if z=1  
3 = always jmp

ALU  
0 = A + B  
1 = A and B  
2 = A  
3 = not A

SH  
0 = no shift  
1 = shift rt  
2 = shift lt

MBR,MAR,RD,WR,ENC  
0 = no  
1 = yes