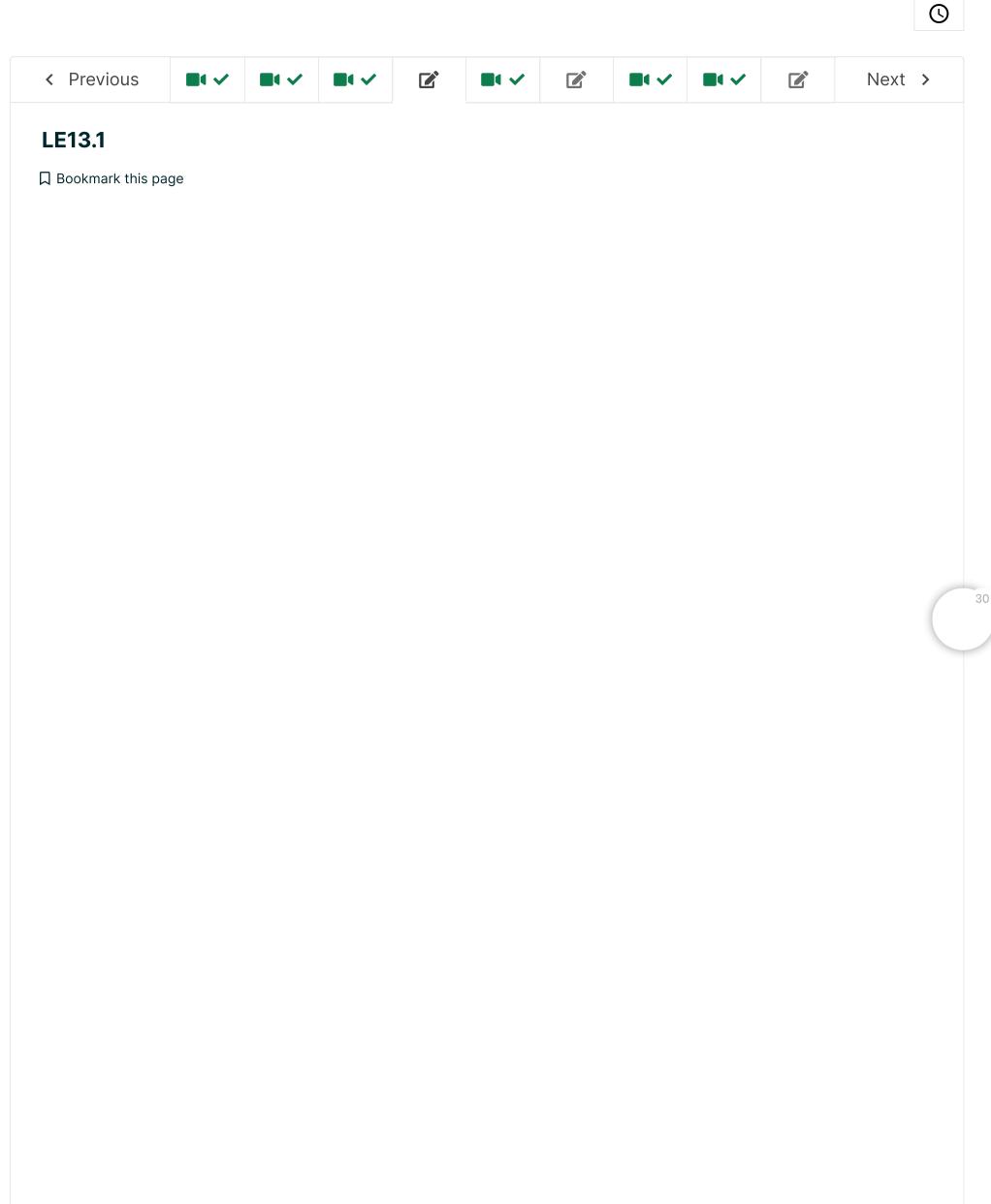
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as shown at the end of the previous video. Please choose "do not care" if the value of control signal doesn't matter when executing the instruction.

(A) Swap register contents with memory location

Usage: MSWP (Ra, literal, Rc)

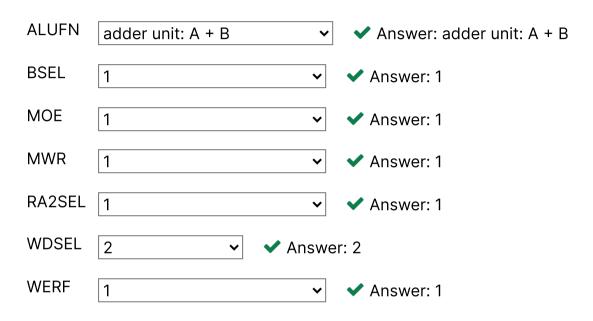
Operation: PC ← PC + 4

EA ← Reg[Ra] + SEXT(literal)

tmp ← Mem[EA]

Mem[EA] ← Reg[Rc]

Reg[Rc] ← tmp

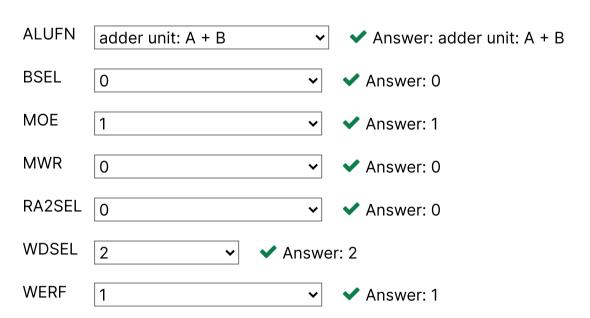


Explanation

MSWP is a combination of LD and ST. Start with the control signals for LD and then add the ST signals: RA2SEL=1 (read Rc) and MWR=1 (write main memory).

(B) Load indexed

Usage: LDX (Ra, Rb, Rc)
Operation: PC ← PC + 4
Reg[Rc] ← Mem[Reg[Ra] + Reg[Rb]]

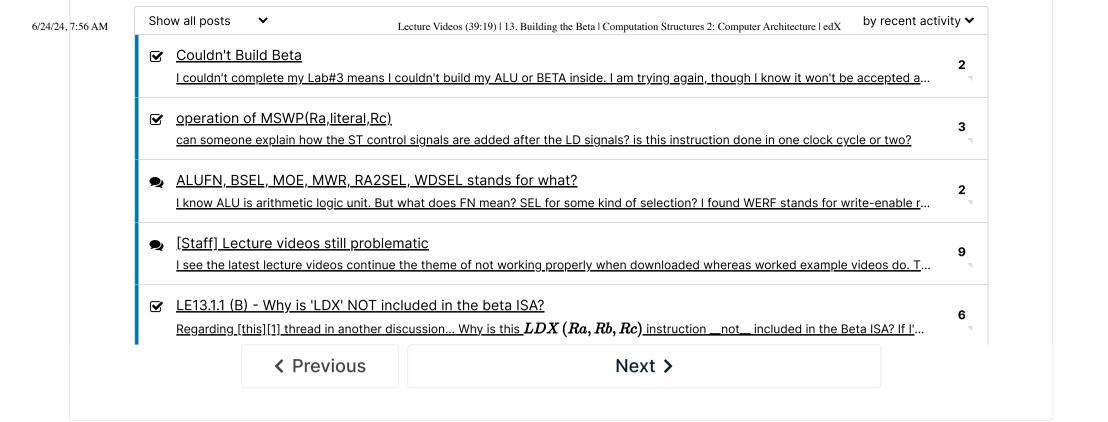


Explanation

LDX is essential the LD instruction with the B operand of the ALU selected as the value of Rb register instead of the sign-extended constant. So BSEL=0. The remainining control signal value are the same as for LD.

Submit

Answers are displayed within the problem



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