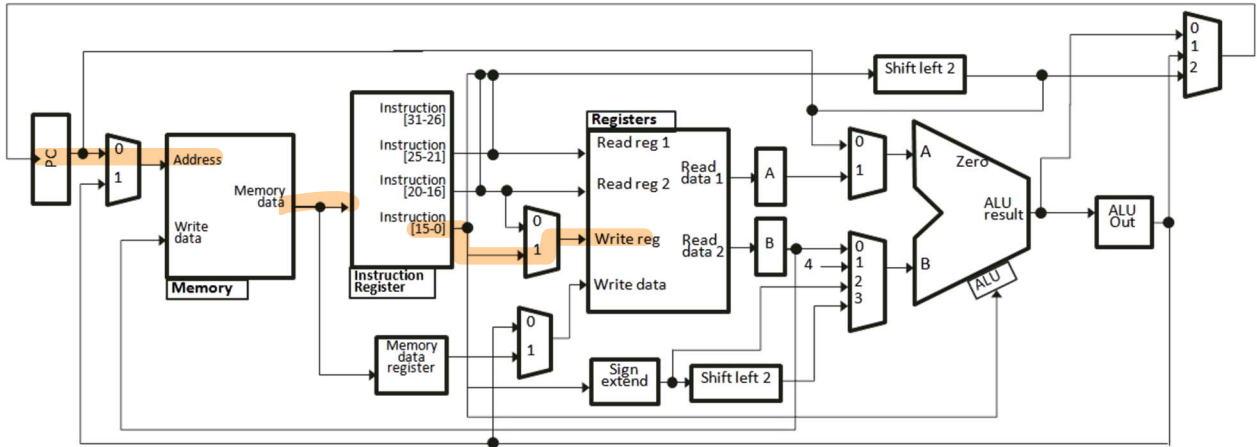# Part I: Processors, part 3 (12 marks)

Consider the datapath diagrams below. For each of the following operations, highlight the path(s) on the diagram that data will travel in implementing these operations. **(4 marks each)**
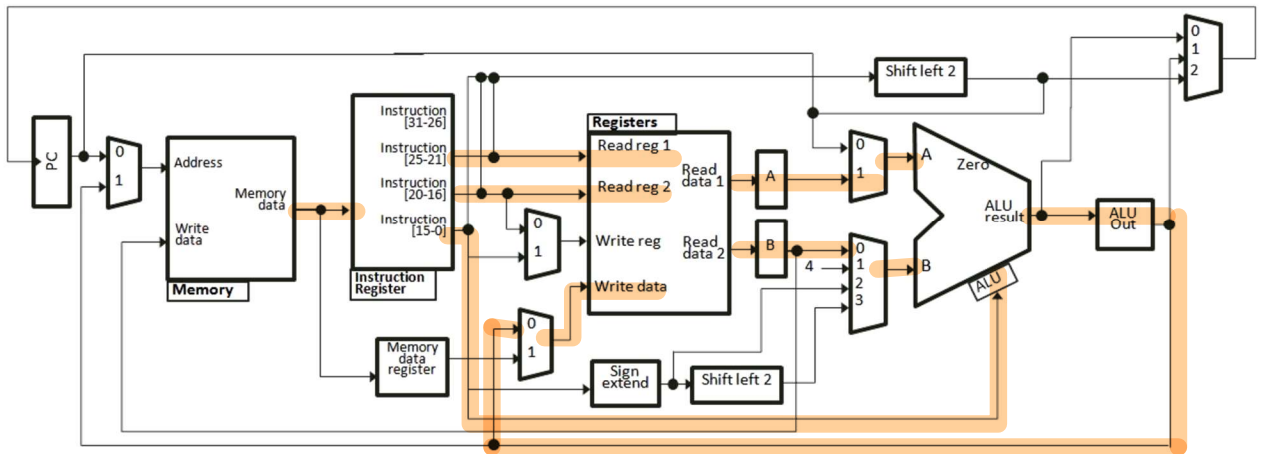
a) **Store the program counter in the return address register.** sw $ra, 0($sp)

b) **Set $t0 to zero.** add $t0, , $zero

c) **Fetch the top element from the stack and store it in $t0.** lw $t0, 0($sp)