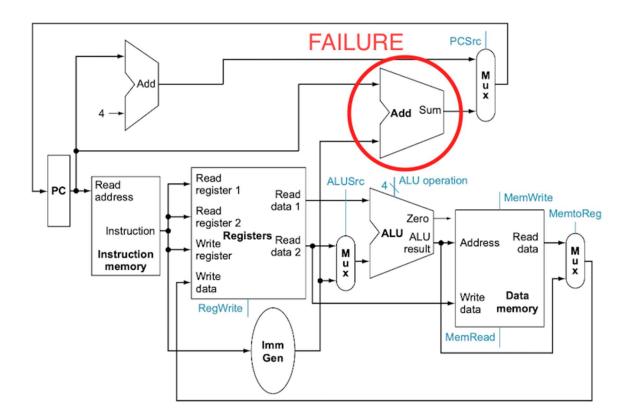1. Which kind(s) of operation(s) cannot be executed correctly if the circled datapath unit is malfunctioned? (2%) (Hint: load-store operations, ALU operations, or branches.)

    Branch

2. Branch prediction technique is developed to alleviate the potential penalty caused by branch instructions. Which kind(s) of hazard(s) may lead to branch miss? (1%) What is the major difference between static and dynamic branch prediction methods? (1%)

    Control Hazards

    "Static predictions" are used at "compile-time".
    "Dynamic predictions" are adaptable at "runtime".