Assignment 4

Questions 1:

If the second machine has the same ISA, design doesn't matter. As ISA is same, understanding of instruction in binary will be same, may be flow in circuit may be different for same instruction. But the final output for that instruction according to a given ISA will be the same.

But when ISA is different, understanding of code in binary will be different. Take an example of Simple RISC and Toy RISC. In General in Simple RISC the first register is treated as destination whereas in Toy RISC 3rd register is treated as destination. If instruction is add in Toy RISC

add %x3, %x4, %x5
Be represented by a 32 bit number A
 A is treated as add value(x5) = value(x3) + value(x4) in Toy

A may be treated as
value(x3) = value(x4) + value(x5) in simple risc

So if ISA is different the result may be different.

Question 2:
Max Number of activation block will be 5

Main--->foo(5)--->foo(4)--->foo(3)--->foo(2)
Main--->foo(5)--->foo(4)--->foo(3)--->foo(1)   returns foo(3)
Main--->foo(5)--->foo(4)--->foo(2)   returns foo(4)
Main--->foo(5)--->foo(3)--->foo(2)
Main--->foo(5)--->foo(3)--->foo(1)   returns foo(3),foo(5),main()
                    (fig 1)

When main calls foo(5) foo calls foo(4) called first and then foo(3)
First activation blocks of of foo(4) is made and deleted and then it goes for foo(3)
For foo(4) it calls foo(3) similar to above foo(3) calls foo(2) that makes 5 blocks of activation in stack. We can deduce that from the figure too.