Q 1) the program counter provides the address of the instruction to be fetched from memory
Q 2) the push operation is writing into the stack while the pull operation is reading from the stack
Q 3) yes since the sign of the result is different from the sign of the operands
Q 4) C: carry, Z: zero, N: negative
Q 5) we can see which SR flags are triggered after the subtraction of two numbers to see equal, or one is bigger than the other
Q 6) 16^3 locations
Q 7)

address bus: the lines used to transport address information
data bus: set of lines used to transport data and instructions to and from the cpu
control bus: he lines that carry signals that regulate system acitivity

Q 8)

volatile memory: rips temporary and is erased after the power is turned off
non volatile memory: remains in memory after the power is cut off

Q 9) FRAM:

can be written to during program execution
requires low energy to operate (only when loading and executing operations)
the writing is speed is comparable to DRAMS

Q 10)
Q 11)

Von Neumann: Program and Data memory share the same system buses
Harvard: they have different system buses

Q 12) a look table is an initialised array that contains precalculated information. They are defined during he program's initialisation stage
Q 13) the master is the one that drives the clock line while the slaves follow the convention defined by the master
Q 14) ACK and NACK