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COA

Due 4/7/2017

1. There are two factors that determine maximum capacity in a computer;
   1. The number of bits in the memory address register - determines how many address locations can be decoded. Using M=2^k where k is number of bits in the memory address register’s width.
   2. The number of bits in the address field of the instruction set - establishes how many memory locations can be addressed from the instruction.

2. Flash Memory is unsuitable for use as main memory because it is not possible to write to a single memory location. It is neccessary to erase and rewrite a block of memory to make changes using flash memory. (pg 207)

3.

|  |  |  |  |
| --- | --- | --- | --- |
| Register | Holding address? | Holding instructions? | anything? |
| IR |  | ✔ |  |
| PC | ✔ |  |  |
| MAR | ✔ |  |  |
| MDR |  | ✔ |  |
| Accumulator |  |  | ✔ |
| General Purpose |  |  | ✔ |

4.

Implicit: Accumulator

Explicit: the address field, in this case 31.