Question: LOAD, MUL, STORE Instruction

0011 = Load AC from memory

0101 = Multiply contents of memory location 640

0111 = Store AC to memory

Fragmen program di atas menunjukkan penggandaan kandungan kata memori di alamat 640 (12-bit) dengan kandungan kata memori di alamat 641 dan menyimpan hasilnya di lokasi terakhir. Anggap kaunter program (PC) mengandungi 200, alamat arahan pertama. Arahan ini (nilai 5640 dalam heksadesimal) dimuat ke dalam daftar arahan (IR) seperti yang ditunjukkan pada Langkah 1 di bawah.

*The program fragment above shows multiplication the contents of memory word at address 640 (12-bits) to the contents of the memory word at address 641 and stores the result in the latter location. Assume the program counter (PC) contains 200, the address of the first instruction. This instruction (the value of 5640 in hexadecimal) is loaded into the instruction register (IR) as shown in Step 1 below.*

|  |  |
| --- | --- |
| 200 | 5640 |
| 201 | 7641 |
| 202 | 9641 |
|  | . |
|  | . |
|  |  |

Memory CPU registers

|  |  |
| --- | --- |
| PC | 200 |
| AC |  |
| IR | 5640 |
|  | . |
|  | . |

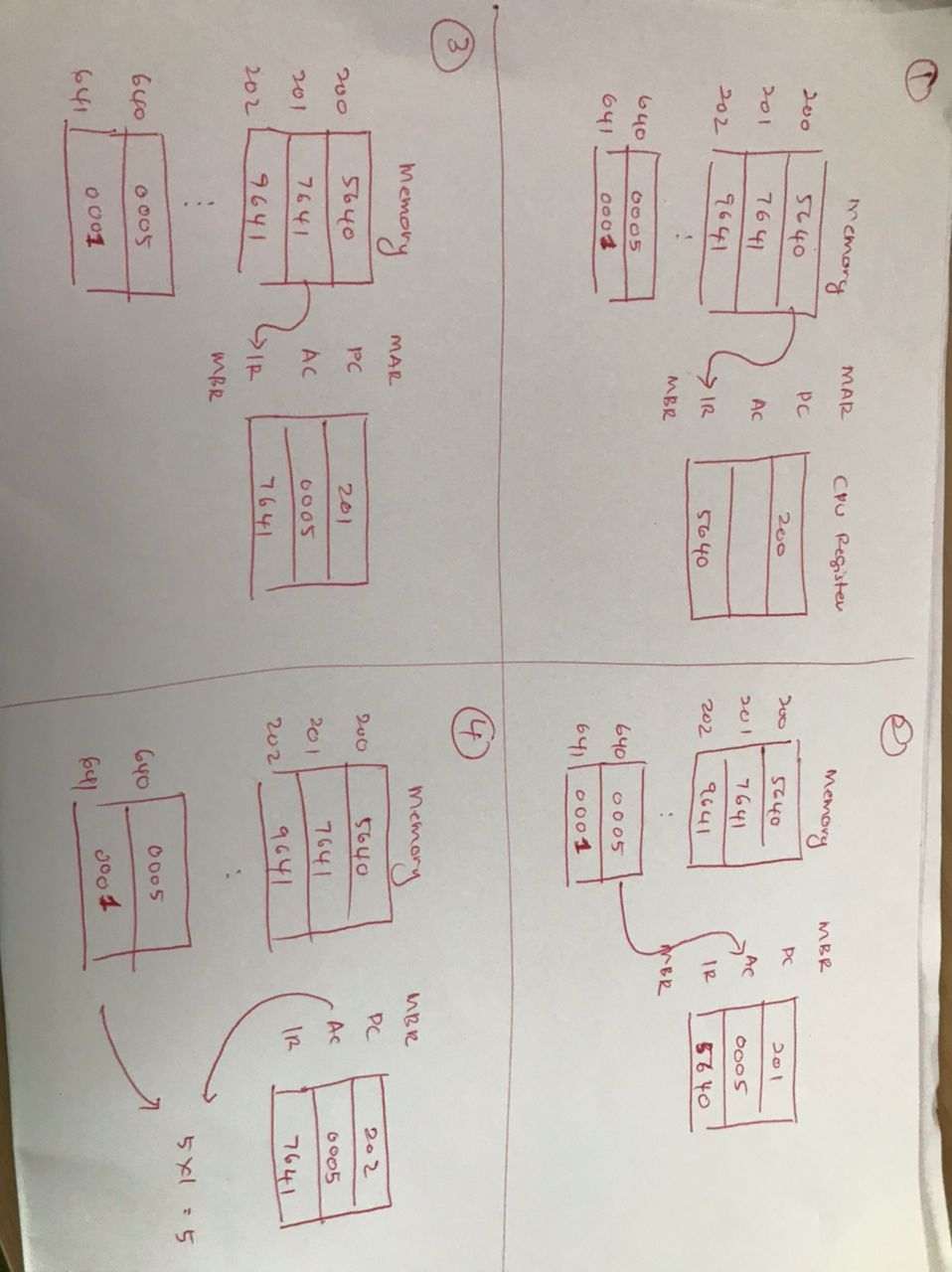
|  |  |
| --- | --- |
| 640 | 0005 |
| 641 | 0001 |
|  |  |

Langkah/*Step* 1

Berdasarkan langkah 1, tunjukkan / lukiskan baki langkah dalam pelaksanaan program (kandungan ingatan dan daftar CPU) untuk menyelesaikan tiga arahan (LOAD, MULTIPLY, STORE) berserta penggunaan daftar alamat ingatan (MAR) dan data daftar penimbal ingatan MBR.

*Based on step 1, show/ draw the remaining steps in program execution (contents of memory and CPU registers) to complete three instructions (LOAD, MULTIPLY, STORE along with the use memory address register (MAR) and memory buffer register (MBR).*

*Answer:*

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