

Homework- 15 Solutions

软件 2101 杨豪 学号: 2206213297

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Honor Code: I promise that I finished the homework solutions on my own without copying other people's work.

Instruction Level Parallelism and Superscalar Processors

1.

时钟	功能	有效控制信号
C5	$MAR \leftarrow (R1)$	R1out, MARin
C6	$MDR \leftarrow M(MAR)$	MemR, MDRinE
C7	$A \leftarrow (MDR)$	MDRout, Ain
C8	$AC \leftarrow (A) + (R0)$	R0out, Add, ACin
C9	$MDR \leftarrow (AC)$	ACout, MDRin
C10	$M(MAR) \leftarrow (MDR)$	MDRoutE, MemW

2.

1).

a. MBR

b. IR

c. MAR

d. PC

2).

$PC \rightarrow MAR \rightarrow \text{Main Memory} \rightarrow MBR \rightarrow IR$

3).

- Read: $IR \rightarrow MAR \rightarrow \text{Main Memory} \rightarrow MBR \rightarrow AC \rightarrow ALU$
- Write:

1. $IR \rightarrow MAR$
2. $AC \rightarrow MBR \rightarrow \text{Main Memory}$

Other things

- \LaTeX code refer to these things and was complied on texlive2020.
 - [UCB-CS70's given homework template.](#)
 - [A free website useful to edit \$\text{\LaTeX}\$ formula code.](#)
- Some context refer to Professor Li. 's PPT.

The purpose of writing in English is to adapt to bilingual teaching and to improve my poor English writing skills in preparation for a possible future exchange program.

Thanks for your correcting and grading :).