Q9

Due Oct 28 at 11:59pm   **Points** 90   **Questions** 6
Available Oct 27 at 12pm - Oct 28 at 11:59pm 1 day   **Time Limit** 20 Minutes

Attempt History

	Attempt	Time	Score
LATEST	**Attempt 1**	17 minutes	10 out of 90 *

* Some questions not yet graded

⚠ Correct answers will be available on Oct 29 at 12am.

Score for this quiz: **10** out of 90 *
Submitted Oct 28 at 2:04pm
This attempt took 17 minutes.

Question 1	**Not yet graded / 20 pts**

What is static pipeline scheduling?

Your Answer:

Transform and re-arrange the code to reduce pipeline stalls. More software based.

> Static scheduling is a compiler technique to reorder instructions in order to minimize stall cycles due to dependences.

Question 2	**Not yet graded / 20 pts**

What is dynamic pipeline scheduling?

Your Answer:

Hardware rearrange order of instructions to reduce stalls while maintaining data flow and exception. More hw based.

> Dynamic scheduling reorders instructions in hardware in order to minimize stall cycles due to dependences.
>
> *** Think about its advantages relative to static scheduling.

Question 3   Not yet graded / 20 pts

Show all types of hazards that can be eliminated by register renaming.

Your Answer:

1. WAR

2. WAW

> WAW, and WAR, but not RAW hazards.

Question 4   Not yet graded / 20 pts

Use register renaming to eliminate hazards in the following code. Indicate the registers used for renaming.

fadd.d f6, f0, f8

fsub.d f8, f10, f14

fmul.d f6, f10, f8

Your Answer:

fadd.d f6, f0, T; f8 --> T WAR

fsub.d f8, f10, f14;

fmul.d S, f10, f8; f6 --> S WAW

Assume two registers S and T are available for renaming.

fadd.d f6, f0, S   ; f8 -> S

fsub.d f8, f10, f14

fmul.d T, f10, f8   ; f6 -> T

or

fadd.d f6, f0, f8

fsub.d S, f10, f14   ; f8 -> S

fmul.d T, f10, S   ; f6 -> T, f8 -> S

Question 5   5 / 5 pts

Instructions pass the "Issue" stage out-of-order with dynamic scheduling.

○ True

◉ False

Question 6   **5 / 5 pts**

Instructions enter the "Execute" stage out-of-order.

◉ True

◯ False

Quiz Score: **10** out of 90