



Universidade de Brasília – UnB  
Instituto de Ciências Exatas – IE  
Departamento de Ciência da Computação – CIC

# **Unidade Lógica e Aritmética (ULA) e Banco de Registradores**

## **Organização e Arquitetura de Computadores (1/2017)**

**Professor:** Marcelo Grandi Mandelli

**Autores:**

Nome: Alon Mota

Nome: André Souto

Nome: Pedro Henrique S. Perruci

Matrícula: 130005002

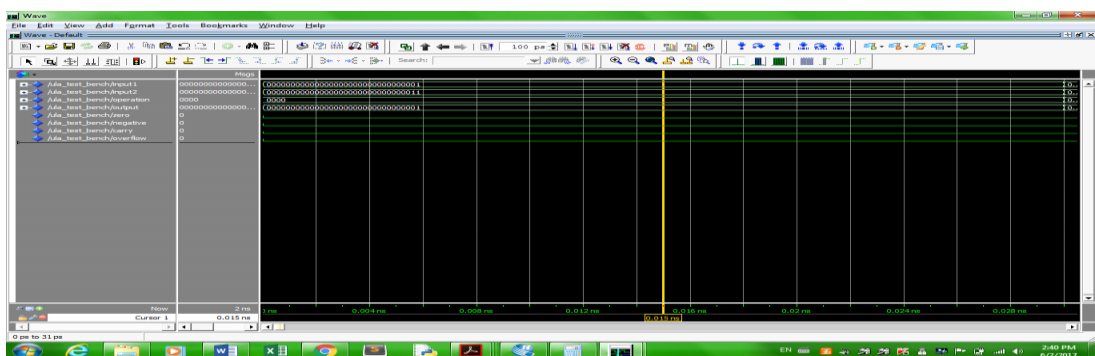
Matrícula: 140016261

Matrícula: 140158596

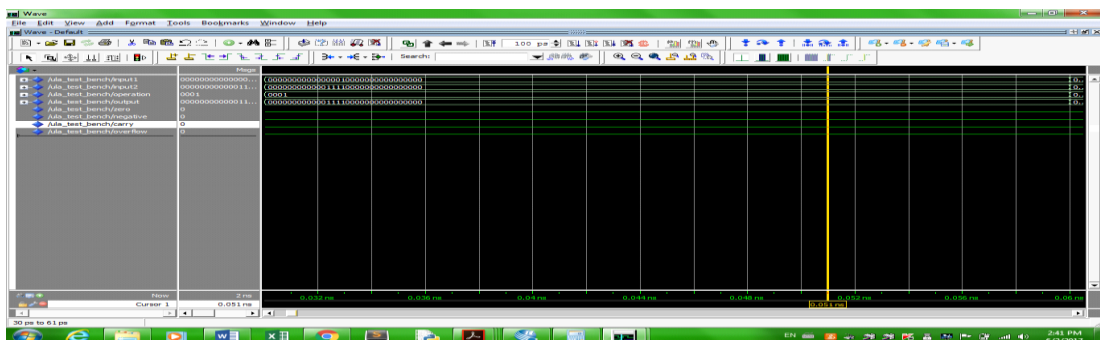
**Turma:** C

Abaixo, constam os testes feitos na ULA produzida no trabalho:

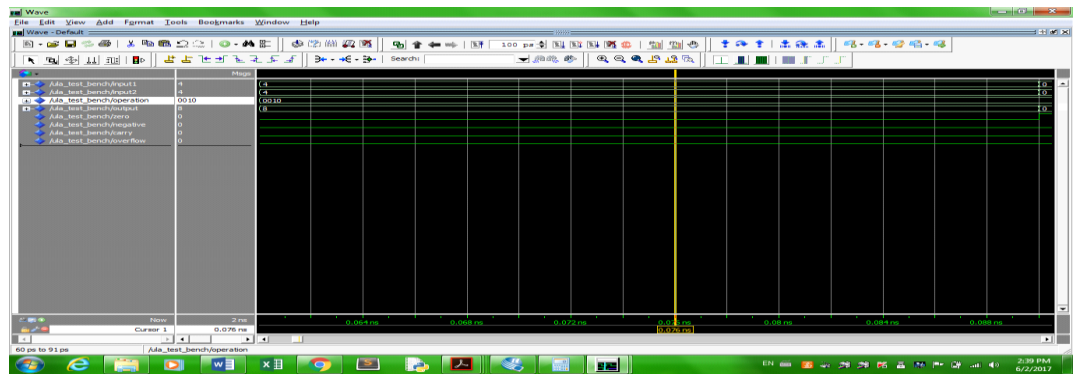
- Teste para operação AND



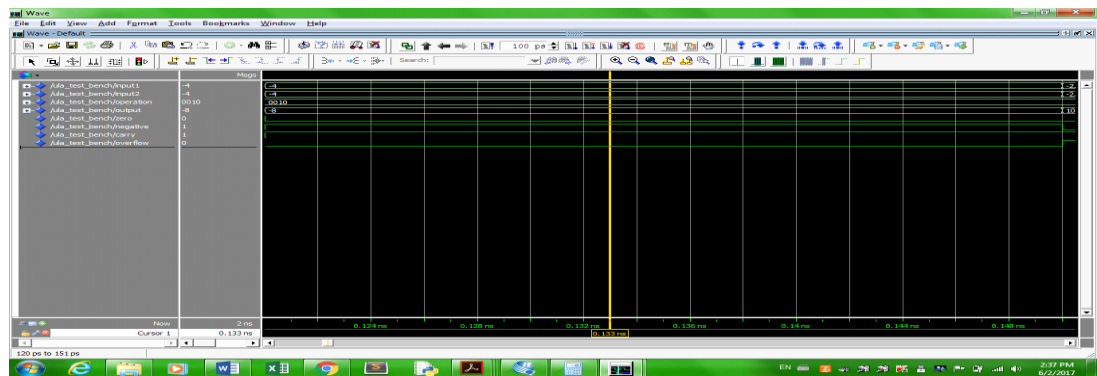
- Teste para operação OR



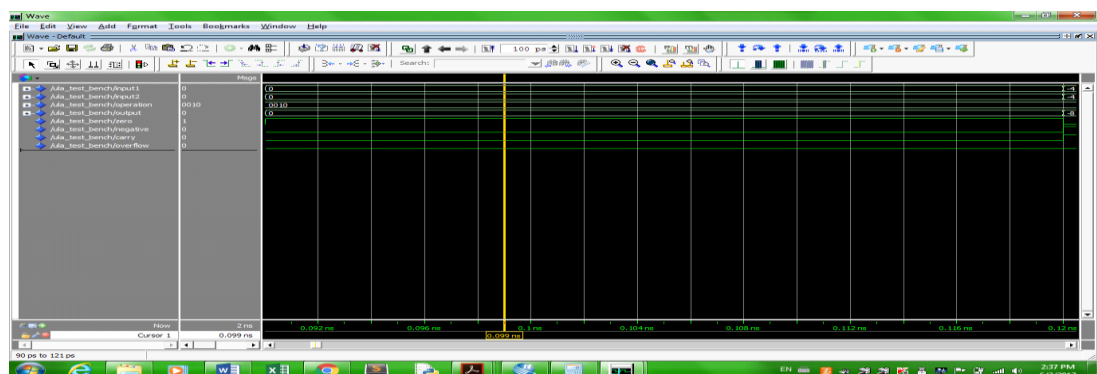
- Teste para operação ADD
  - Positivo



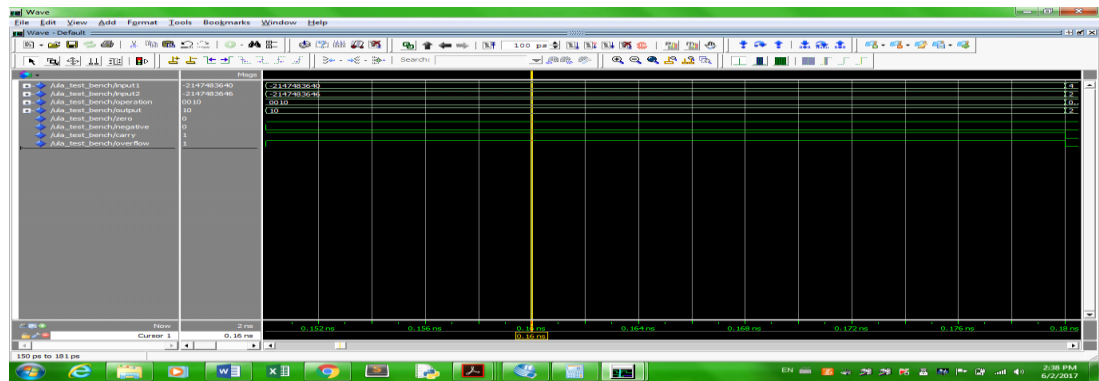
- Negativo



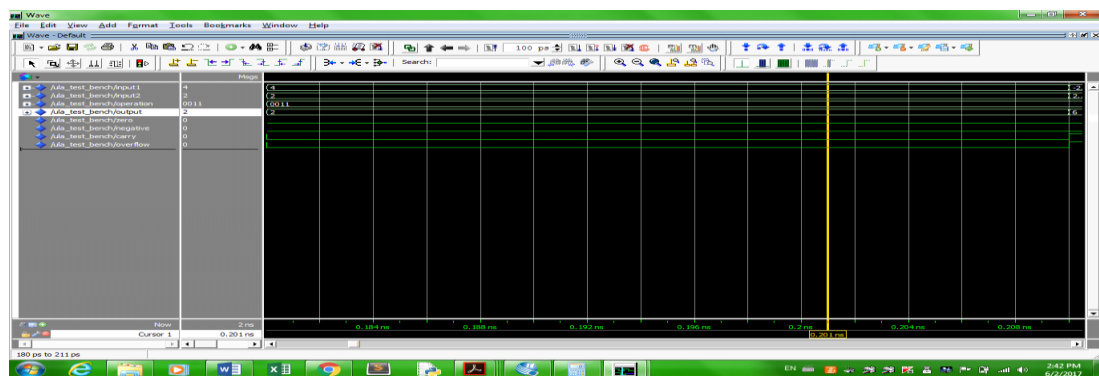
- Zero



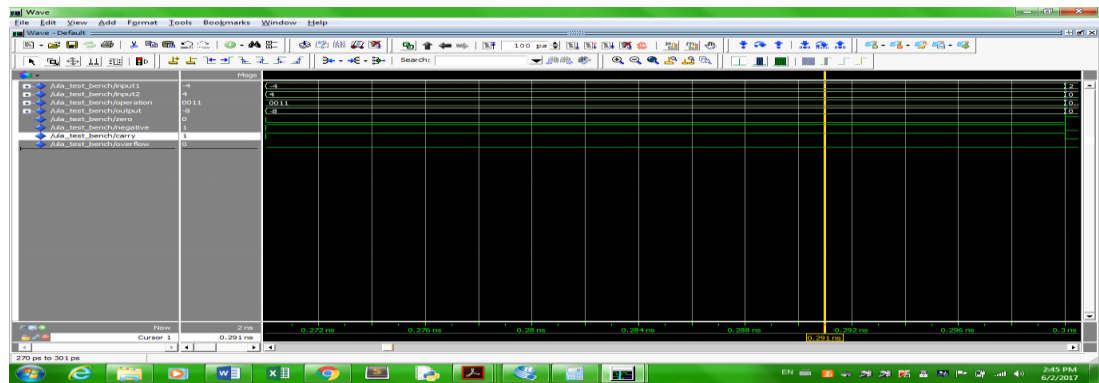
- Overflow



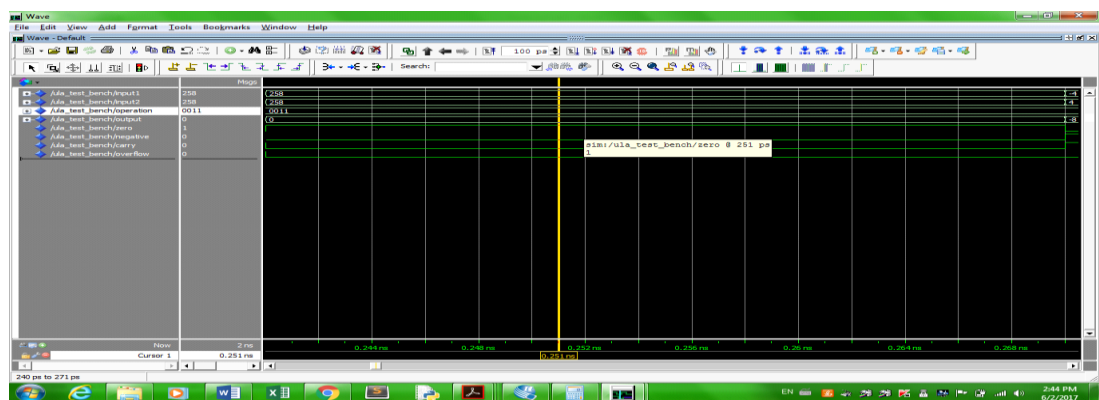
- Teste para operação SUB
- Positivo



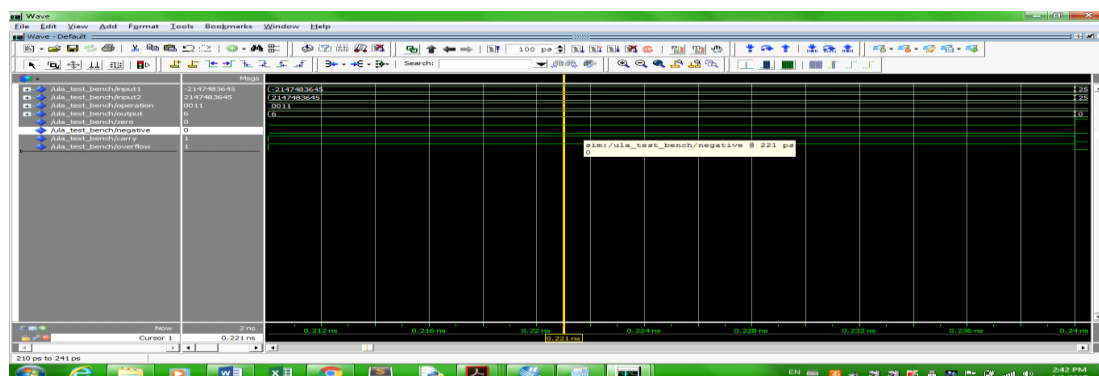
- Negativo



- Zero



- Overflow



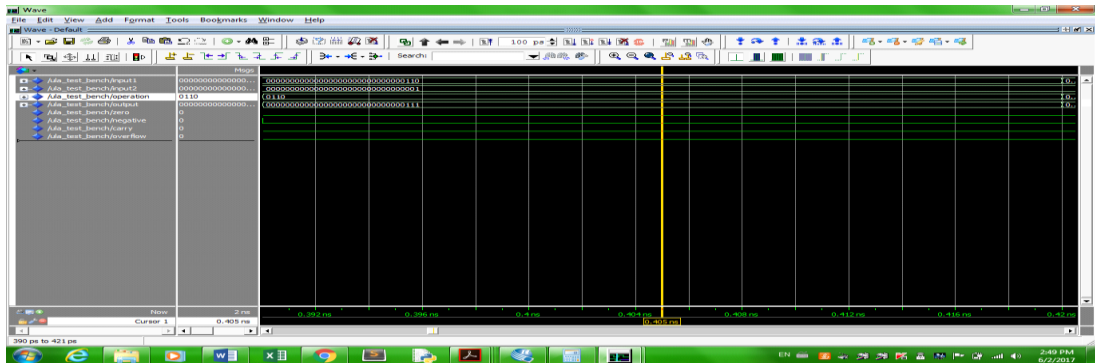
- Teste para operação SLT

- 
- The screenshot shows the Waveform Editor in Vivado. The top menu bar includes File, Edit, View, Add, Format, Tools, Bookmarks, Window, and Help. Below the menu is a toolbar with various icons for waveform manipulation. The main area displays a timing diagram with a black background and green signal traces. The signals listed on the left are:
- A0a\_test\_bench/input1 (2)
  - A0a\_test\_bench/input2 (0)
  - A0a\_test\_bench/operation (0 100)
  - A0a\_test\_bench/output (0)
  - A0a\_test\_bench/corrupt (1)
  - A0a\_test\_bench/negative (0)
  - A0a\_test\_bench/carry (0)
  - A0a\_test\_bench/overflow (0)
- A yellow vertical cursor is positioned at 0.319 ns. The time scale is 300 ps to 331 ps. The bottom status bar shows the time range and the cursor position.

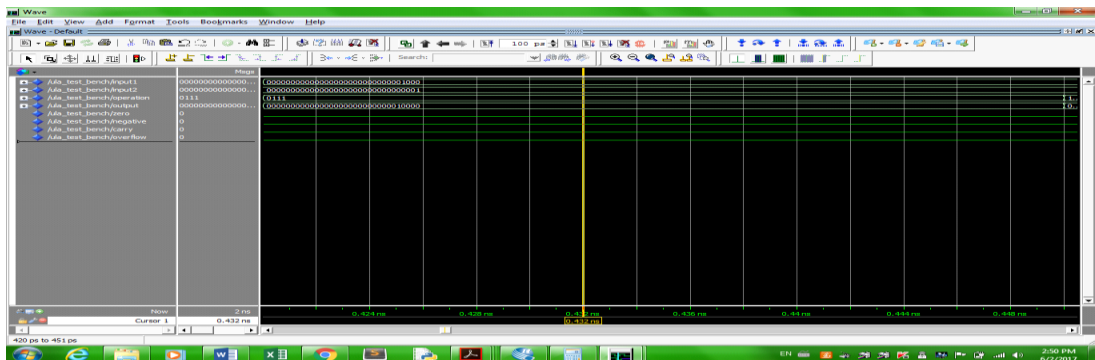
- 
- The screenshot displays the Waveform Editor interface. On the left, a list of signals is shown, including 'Afa\_test\_bench/output'. The main display area shows a digital waveform with a period of 0.333 ns. The cursor is positioned at 0.347 ns. The bottom status bar indicates the time scale is 330 ps to 361 ps.

- [illegible]

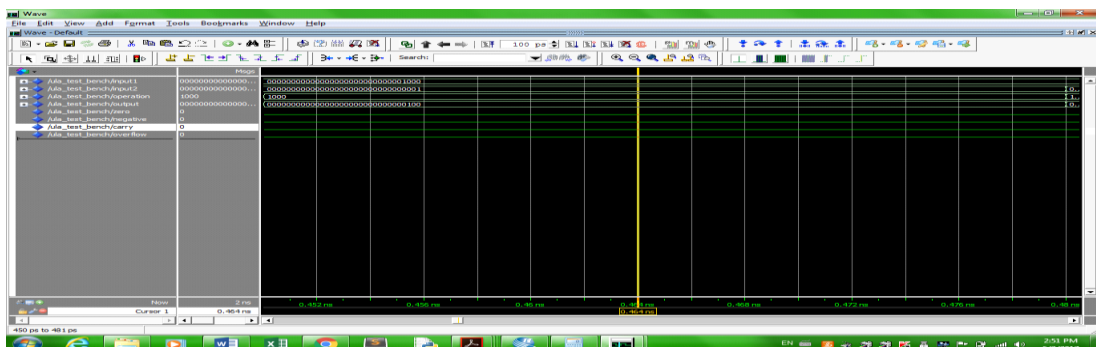
- Teste para operação XOR



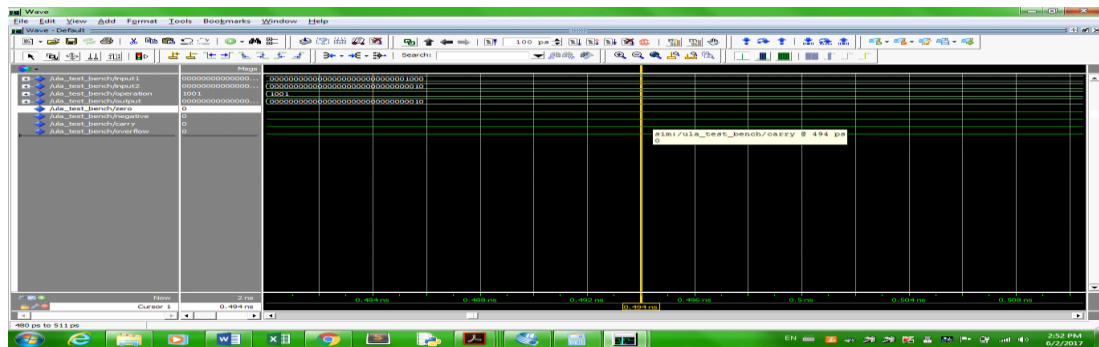
- Teste para operação SLL



- Teste para operação SRL

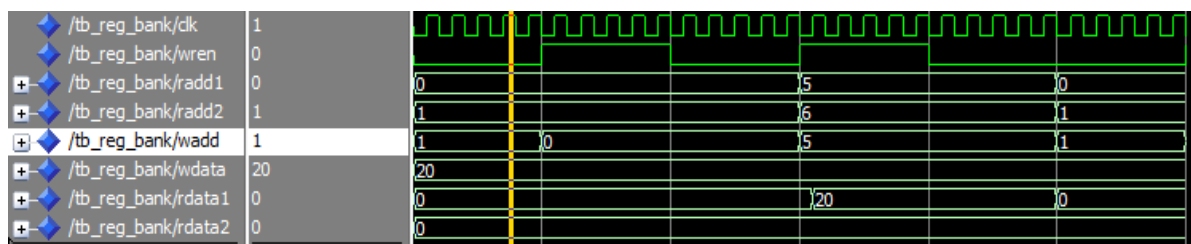


- Teste para operação SRA

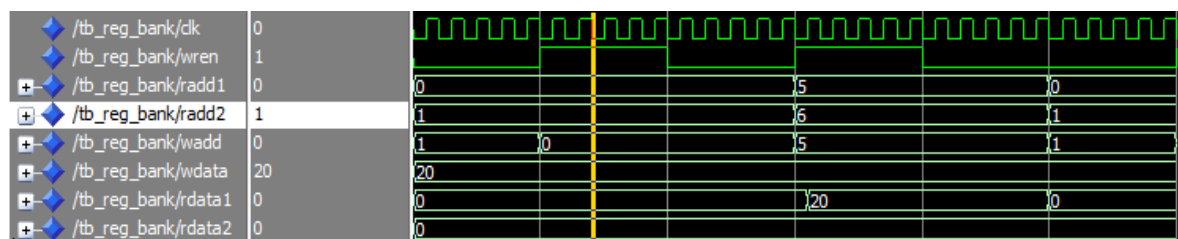


Abaixo, constam os testes feitos no REG\_BANK produzido no trabalho:

- Teste para desabilitar a escrita

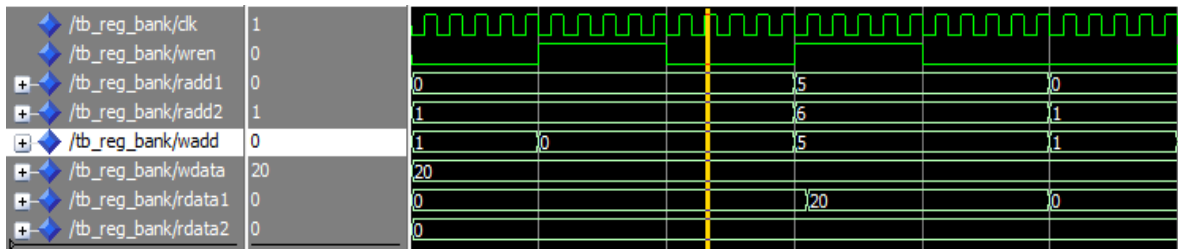


- Teste para escrever em 0

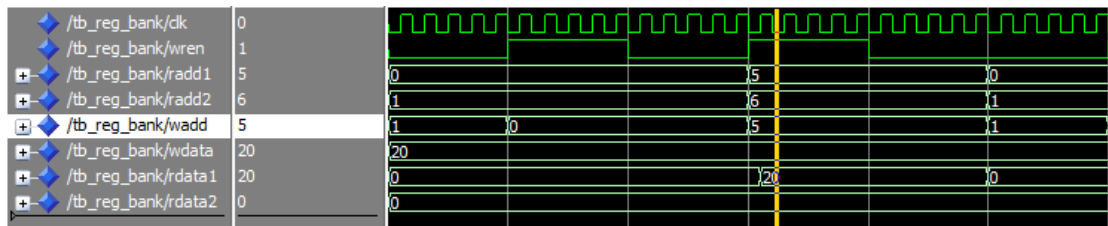


- Teste para leitura em 0





- Teste para escrever em uma posição qualquer



- Teste para leitura

