Digital Design and Computer Organization Laboratory

**UE19CS206**

**3rd Semester, Academic Year 2020-21**

Date:

|  |  |  |
| --- | --- | --- |
| Name: Achyut Jagini | SRN:PES2UG19CS013 | Section  A |

Week#\_\_4\_\_\_\_\_\_\_\_\_

Program Number :\_\_\_1\_\_\_\_

Title of the Program

**REGISTER FILE**

Aim:

**AIM: TO CONSTRUCT A REGISTER FILE, FROM WHICH TWO 16-BIT VALUES CAN BE READ, AND TO WHICH ONE 16-BIT VALUE WRITTEN, EVERY CLOCK CYCLE.**

Text

Description automatically generated

Text

Description automatically generated

Text

Description automatically generated

2. Complete the truth table for all the 6 rows

The first four combinations that implement write operation and the last two combinations that implement read operation.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **wr** | **rd\_addr\_a** | | | **rd\_addr\_b** | | | **wr\_addr** | | | **d\_in** | **Output** |
| 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | Bit15 to  Bit 0 |  |
| 1 | x | x | x | x | x | x | 0 | 1 | 1 | CDEF | Reg3= |
| 1 | x | x | x | x | x | x | 1 | 1 | 1 | 3210 | Reg7= |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 4567 | Reg5= |
| 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | BA98 | Reg0= |
| 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | xxxx | d\_out\_a=  d\_out\_b= |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | x | x | x | xxxx | d\_out\_a=  d\_out\_b= |

Case 1

Graphical user interface

Description automatically generated

Case 2

**A screenshot of a computer

Description automatically generated**

Case 3

Graphical user interface

Description automatically generated

Case 4

Graphical user interface

Description automatically generated

Case 5

Graphical user interface

Description automatically generated

Case 6

Graphical user interface

Description automatically generated

The programs and output submitted is duly written, verified and executed my me.

* I have not copied from any of my peers nor from the external resource such as internet.
* If found plagiarized, I will abide with the disciplinary action of the University.

Signature:achyut

Name:Achyut Jagini

SRN:PES2UG19Cs013

Section: a