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Section: 2

Department of Computer Science and Engineering

CSE340: Computer Architecture

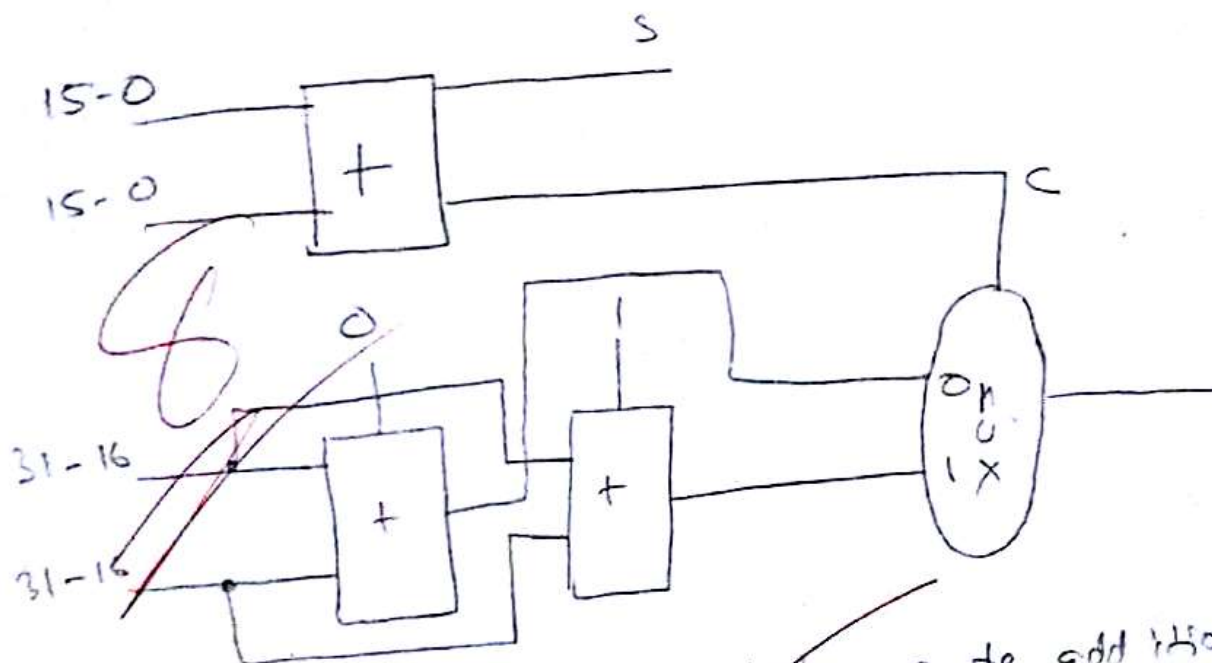
Summer 2017

Quiz-1, D

Full Marks: 15 Time: 20 Mins

1. Design a "Conditional Sum" adder and explain its operation.

10
8



A conditional sum adder is used because the addition is done by using two carries, 0 & 1. What ever carry is needed to perform this operation is entered into selecting bit of the mux & from there the mux chooses which one to take. It is also faster than a ripple carry adder as it does not have to wait for the carry from the previous adder.

1. Consider the below function. Write the equivalent MIPS code and also its encoded form. x, y and z are in registers \$10, \$11, \$12.

$x = x + y + z;$
 $y = 4x - z;$

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Section: 02

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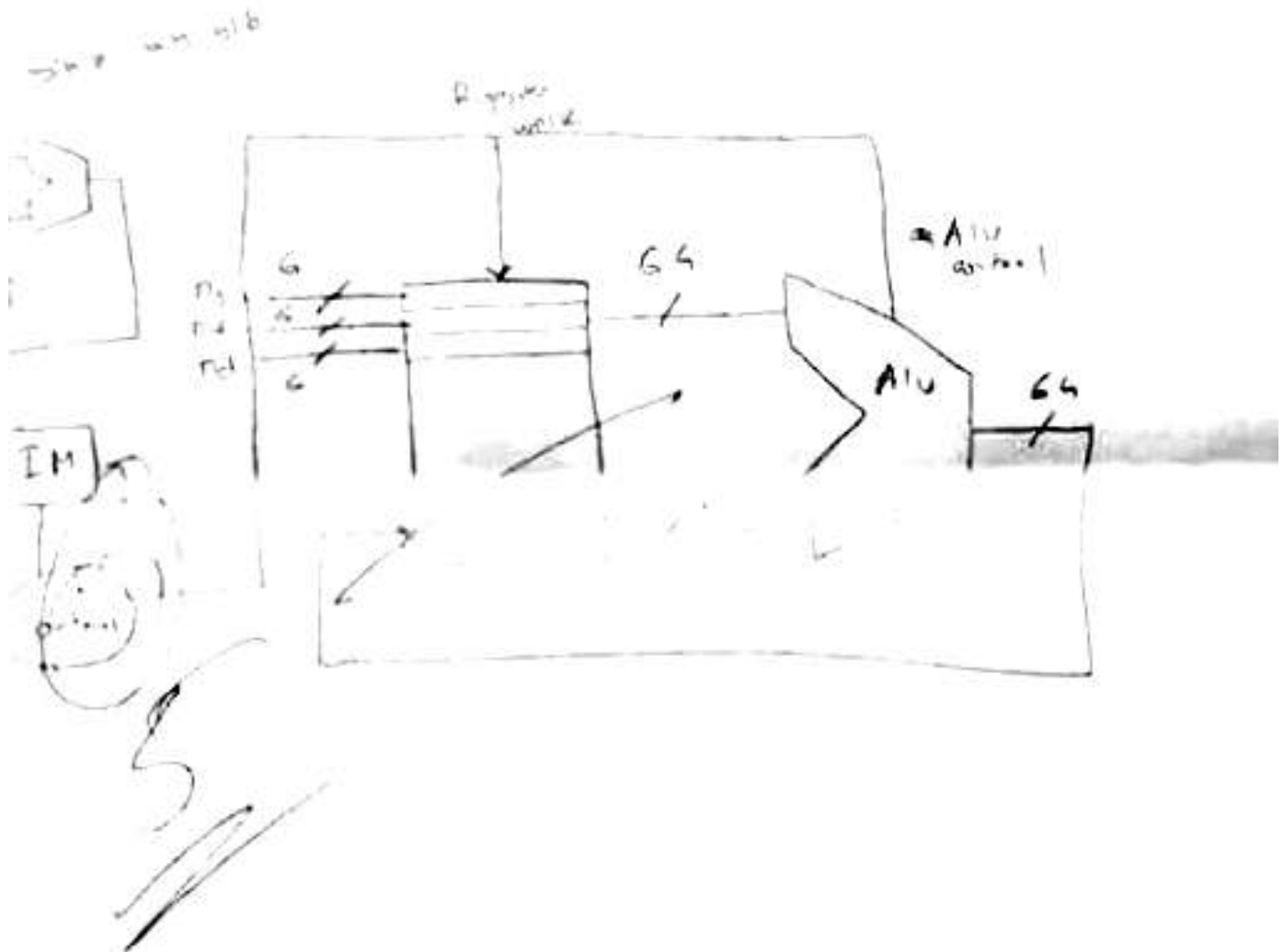
Summer 2017

Quiz-2, B

Full Marks: 15 Time: 20 Mins

1. Design a 64-bit register file.

5



2. Write MIPS code for the following C code: `if (A[6] != A[3]) f[3] = g[6] - C[2] + 9; else f[5] = g[6] + A[9];`
Assume base addresses for A, g and C are $\$s_0$, $\$s_1$ and $\$s_2$ respectively and base address of f is in $\$s_3$. 1