

上海交通大学试卷 (A 卷)

(2019 至 2020 学年 第 1 学期)

班级号 _____ 学号 _____ 姓名 _____

课程名称 _____ 计算机系统基础 (汇编) _____ 成绩 _____

Problem 1

[1] 1000 1000

[2] 1111 1111

[3] 0000

[4] 0000 0000

[5] 0000 0000

[6] 1001 1101

Problem 2

[1] 0x123456

[2] 0x183c

[3] 0x89786756 45342312

[4] 0xffffffff ffffffff c

[5] 0x8090a0b0 c0d0e0f0

[6] 0x183c

[7] 0xf8ffffff f000000a

[8] 0xffffffff ffffffff c

[9] 0xffffffff ffffffff 0

[10] 0x4020

Problem 3

1. [1] 127

[2] 0xff80

[3] 0x8080

[4] 0x0001

2. FP=0x41a6

sign=0x0

exp=0x83

frac=0x26

Problem 4

1. [1] 24

[2] 24

[3] 8

[4] 0x550000001000

[5] 0x550000001000

[6] 0x550000001000

[7] 0x550000001008

[8] 0x550000001010

我承诺，我将严
格遵守考试纪律。

题号	1	2	3	4	5	6			
得分									
批阅人(流水阅 卷教师签名处)									

2. $6+4=10$

3. Place `"int *loc"` before `"char data[2]"`

Problem 5

1. `$50(50,0x32,'2')`

2. `[1] str[1]` `[2] result > 0x35(53,'5')?2:result`

`[3] ~result` `[4] '4'`

`[5] .L5(,%rax,8)` `[6] nop/NONE/other effectless ins`

`[7] .L7`

3.

str	output
"62"	0x2
"26"	0x63
"84"	0x11
"4791"	0xe7636465

4. Advantage: avoid long sequence of comparison and branch operations thus more efficient.

Limitation: switch statements whose labels are not consecutive or almost consecutive.

Example:

Problem 6

1 [1] B [2] C [3] A

2 No. %rax is NOT a callee-saved register and can be modified by the callee at line 12 "call bar". We need to load the argument g to %al again before add %al and push it on the stack.

3 [4] 0x7fffffffde20 [5] 1

[6] 0x7fffffffde00 [7] 2

[8] 0x7fffffffde20 [9] 2

4 4.a

[10] 17: movb %al, (%rsp) or 21: addq \$8, %rsp

[11] 17: movb %al, 32(%rsp) or 21: popq 24(%rsp)

4.b

&g is: 0x7fffffffde20, g is: 0

&g is: 0x7fffffffde40, g is: 1

&g is: 0x7fffffffde20, g is: 1

&g is: 0x7fffffffde40, g is: 2

&g is: 0x7fffffffde60, g is: 2