浙江大学 2017～2018 学年 春夏 学期

《 计算机系统原理 》课程期中考试试卷（A）

课程号： 21121290 ，开课学院： 计算机学院 . 任课老师:

考试试卷：√A 卷、B 卷（请在选定项上打√）

考试形式： 闭 卷，允许带 一页 A4 纸手写笔记 入场，笔记署名，不得互借
交卷方式： 试卷名字朝外对折整齐，草稿纸、笔记与试卷一起上交 。
考试日期： 2018 年 05 月 日(: ~ :)，考试时间： 随堂 分钟

诚信考试，沉着应考，杜绝违纪。

考生姓名：_____学号：_____所属院系：_____

题序	一.30	二.15	三.10	四.25	五.30	总 分.100
得分						
评卷人						

Something may be needed:

OPcode: Beq:4, Bne:5, J:2, Lw:35, Sw:43
Function Code: Sub:34, Add:32
Register No. $s0:16, $t0:8
Syscall:
print_char: CallCode=11, Arguments: $a0=char Result: --
read_char: CallCode=12, Arguments: -- Result: $a0=char

I.1、(2%x15)choose one best answer.

1、After the instructions excuted, then Register AX will be (____).
MOV AX, 1FFH
INC AL
A: 2FFH
B: 0
C: 200H
D: 100H

2、There are two different conventions for ordering the bytes within a word, Little Endian and Big Endian.
In Little Endian, the byte order for data 0x12345678 in memory is(HEX):
A: 21,43,65,87
B: 12,34,56,78
C: 87,65,43,21

D: 78,56,34,12

3、(____) is a two’s complement sign extension of the value 0x7FF0 from 16bits to 32bits?
A: 0xFFFF_7FF0
B: 0x1111_7FF0
C: 0x0000_7FF0
D: 0x8000_7FF0

4、(____) is the hexadecimal equivalent of 105 base 10。
A: 151
B: 36
C: 69
D: 54

5、Today's computers are built on 2 key principles: (____).
①Make the common case fast.
②Instruction are represented as numbers.
③Every instruction can be conditionally executed.
④Programs can be stored in memory to be read or written just like numbers.
A: ①②
B: ③④
C: ①③
D: ②④

6、After the instructions excuted, then Register AX will be (____).
```
MOV AX, 511
MOV CX, 511
IMUL CL
```
A: -1
B: 1
C: 261121
D: 0FE01H

7、There are 4 numbers, their sign-magnitude, 2'complement, biased notation, 1's complement are 0xFF000000, (____) is the maximum number?
A: 1's complement
B: biased notation(移码)
C: sign-magnitude(原码)
D: 2'complement

8、2's complement in 8 bits for -128 is (____)。
A: Overflow
B: 0100_0000
C: 1000_0000
D: 0000_0000

9、After the instructions executed, then Register AX will be (____).
MOV AX, -1
MOV CX, 302H
MUL CL
A: -1
B: -2
C: -302
D: 510

10、Which represents the most negative value in 2's compliment?(____)
A: 1000_0000
B: 0000_0000
C: 0111_1111
D: 1111_1111

11、ASCii code of 'A' is (____).
A: 61
B: 41
C: 65
D: 97

12、0x8000 is a 16-bit biased notation(移码) representation. the data is (____)。
A: +1
B: -32768
C: -1
D: 0

13、ASCii code of '1' is (____).
A: 41
B: 0x49
C: 31
D: 0x31

14、for a 8-bit 2's compliment, -128 is (____)。
A: 1111_1111
B: Overflow
C: 0000_0000
D: 1000_0000

15、The five classic components of a computer are: (____).
①input，②output，③memory，④storage，⑤control，⑥datapath，⑦CPU，⑧BUS
A: ①②④⑦⑧
B: ①②③⑦⑧
C: ①②③⑤⑥
D: ①②⑤⑥⑧

II、(5x3%) The bits have no inherent meaning. Given the number:

0xAD94FF12

What does it represent, assuming that it is:

1) a two's complement integer?	
2) an unsigned integer?	
3) A single precision floating-point number?	
4) A MIPS instruction?	

III、(5%x2) To give a MIPS assembly instruction for each addressing mode.

	Addressing mode	**Instruction example**
1)	Register addressing:	
2)	Base addressing:	
3)	Immediate addressing:	
4)	PC-relative addressing:	
5)	(pseudo)Direct addressing:	

IV.1、(15%) Convert **-1234_{ten}** into :

-1234_{ten}	**16-bit(Hex)**	**32-bit(Hex)**	
Sign and magnitude			
2's complement			
Biased notation			
-1234_{ten}	IEEE754 Single Precision(Hex)	IEEE754 Double Precision(Hex)	
Floating-point			

IV.2、(10%) Suppose we have four 8-bit registers $A,$B,$C and $D. The signed 8-bit integer is stored in 2's complement format. Calculate $C=$A+$B. and mark if it is Overflow(OF=1) or CarryOut(CF).

$A	**$B**	**$C(Hex)** *$C=$A+$B*	**CF**	**OF**	**$D** *after Slt $D,$A,$B*	**$D** *after Sltu $D,$A,$B*
121	**107**	0x				

98	**-112**	0x				

V(10%x3) X86 assembly language programming.

1、-1000/3 -> ax(商)……bx(余)

2、ax = 300*7

3、ax = bx<0 ? 1 : -1