姓名_____ 学号_____ 级_____ 专业_____ 学院_____

密 封 线

中南民族大学 2018 -2019 学年第 二 学期
期末考试试卷

课程名称：汇编语言与计算机组成
试卷类型：A 卷 共 10 页
考试形式：闭卷 考试

适用范围：计算机科学学院 2018 级软工实验班 本科

	一	二	三	四	五	六	总分
得分							
评卷人							

得分	

1、Identify the addressing mode of each operand in the following instructions from the correct choices like immediate, register, direct, or register indirect.(10 points)

```
CR      EQU     0DH
.DATA
MycourseA  BYTE    'asm',0
XWA    Word    ?
YDA    Dword   ?
```

		destination operand	source operand
(1)	ADD YDA,EAX	_____	_____
(2)	LEA EAX,XWA	_____	_____
(3)	SUB [EBX], CX	_____	_____
(4)	MOV XWA, CX	_____	_____
(5)	CMP MycourseA, CR	_____	_____

注意事项：

1. 考生将姓名、学号等信息写在试卷相应位置；
2. 必须使用蓝(黑)色钢笔或签字笔在规定位置答题；
3. 注意字迹清楚，保持卷面整洁。

A

得分	

2、 Complete the following table by supplying the missing two forms of each signed number. (10 points)

	Hexadecimal	Decimal	2's Complement
(1)	_____	－57	_____
(2)	65	_____	_____
(3)	_____	_____	10111001
(4)	C8	_____	_____
(5)	_____	_____	01000110

得分	

3、Fill the count of bytes that the assembler will generate for each directive below. (10 points)

(1) DA DWORD 2 dup (4 dup (0),?)

Total bytes: _____

(2) WA WORD -190, 880,118H,0,?

Total bytes: _____

(3) BA1 BYTE 10000010B, 0CFH, -3,23

Total bytes: _____

(4) BA2 BYTE 'STUDENT', 0

Total bytes: _____

(5) BA3 BYTE 43H, 'X', 6 dup('B'),?

Total bytes: _____

得分	

4、Judge whether the following assembly instruction is right or not, write √ in the corresponding bracket if it is right and ╳ if it is wrong.(10 points)

Assume that the instructions are in a program also containing the code：

```
cr        EQU        0dh
lf        EQU        0ah
.DATA
Prompt    byte       'Input a number:',0
wnum      word       ?
bnum      byte       ?
```

(1) mov es, ax ( )

(2) mov al, prompt ( )

(3) lea eax, bnum ( )

(4) in dl, 70h ( )

(5) mov [edi], prompt ( )

(6) mov al, 300 ( )

(7) mov cl, bnum ( )

(8) cmp eax, wnum ( )

(9) and wnum, bx ( )

(10) sub cl, lf ( )

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A

得分	

5、 Reading the following programs and fill in the blanks with right answers. (28 points)

(1) Assume that the data segment contains:

```
StringA     BYTE    "jike@scuec.edu.cn",0
```

Suppose that the following instructions are executed:

```
mov   al, "@"
lea   edi, StringA
cld
mov   ecx, 17
repne scasb
```

Assuming that StringA starts at 0400C000H, **give the following "after" values (in Hexadecimal).**

EDI				**ECX**				**ZF**

(2) (a) What will be the output of the following program?

(b) What function does the procedure MathFunc realize?

```
.386
.MODEL FLAT
ExitProcess PROTO NEAR32 stdcall, dwExitCode:DWORD
INCLUDE io.h                ; header file for input/output
 cr      equ     0dh        ; carriage return character
 Lf      equ     0ah        ; line feed
```

```
.STACK   4096                  ; reserve 4096-byte stack
.DATA                          ; global data
number    WORD    23
result     BYTE     6 dup (?), cr, Lf, 0
.CODE
 MathFunc   PROC NEAR32
          push   dx
          mov   dx, ax
          shl    ax, 1
          add    ax, ax
          add    ax, dx
          pop   dx
          ret
MathFunc   ENDP
_start:
           mov   ax, number
           call   MathFunc
           itoa   result, ax
           output   result      ; display result
           INVOKE ExitProcess, 0 ; exit with return code 0
PUBLIC   _start                ; make entry point public
        END
```

(3) Following code is the definition of macro OP_mod.

```
OP_mod   MACRO   number, power
          mov      eax, number
          mov      cl, power
          shl       eax, cl
          and      ecx, 0fh
          and      eax, ecx
          ENDM
```

Assume **the value in EDX is 79H.** Assume that *in_num* references a dword in the data segment, and **the value in *in_num* is 0ffH**. Please give the value in EAX and ECX after the following macro call is executed.

(a) OP_mod EDX,2

The after value in EAX is _____

The after value in ECX is _____.

(b) OP_mod in_num,3

The after value in EAX is _____

The after value in ECX is _____.

(4) What will be the output of the following program?

```
.386
.MODEL FLAT
ExitProcess PROTO NEAR32 stdcall, dwExitCode:DWORD
INCLUDE io.h                    ; header file for input/output
cr          equ         0dh         ; carriage return character
Lf          equ         0ah         ; line feed
.STACK    4096                      ; reserve 4096-byte stack
.DATA                               ; global data
MystringA    BYTE    'AAABBBEfgh', cr, Lf, 0
.CODE
_start:
            lea      esi, MystringA+3
            mov      ecx, 3
rep_dec:
            dec      byte ptr [esi]
            INC      esi
            loop     rep_dec
            output MystringA

            INVOKE ExitProcess, 0 ; exit with return code 0
PUBLIC    _start                    ; make entry point public
            END
```

得分	

6 、 Please complete the following program, procedure and macro definition.(32 points)

(1) Write a complete 80x86 assembly language program: input 10 signed numbers from keyboard and report the max value of the numbers .

```
.386
.MODEL FLAT
ExitProcess PROTO NEAR32 stdcal, dwExitCode:DWORD
INCLUDE io.h

cr EQU 0dH
LF EQU 0ah

.STACK 4096
.DATA
```

```
    .CODE       ;start of main program code
    _start:




INVOKE ExitProcess,0        ;exit with return code 0
PUBLIC _start               ;make entry point public
END
```

(2) Define a procedure named MYTEST, it is assumed an input parameters (word size) have been passed in AX before calling the procedure. The procedure will check the number in AX, when the number is a positive number or zero, it will replace 10 in AX register, and if it is a negative number, -10 will be replaced in AX as an output parameter.

(3) Define a macro named N2A which has a formal parameter, the address of a byte in memory. The macro will check the byte, and if it is through 0 to 9, the corresponding character (this byte+30H) will replace it.