



Bai thi ktmt k16 - KTMT

Computer Architecture and Assembly language (Trường Đại học Sư phạm Kỹ thuật
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Thời gian thực hiện 1 giờ 4 phút

Câu hỏi 1

Hoàn thành

Đạt điểm 1,00

Consider the following assembly instruction sequence

```
CMP DL, 0
JB  x_label
CMP DL, 9
JA  a_label
ADD DL, 30h
JMP x_label
```

a_label:

```
CMP DL, 0Fh
JA  x_label
ADD DL, 31h
```

x_label:

```
MOV AL, DL
```

watch point:

...

Choose correct value of AL register at watch point for different value of DL?

DL=55h

DL=0FFh

DL=10

DL=8

Câu hỏi 2

Hoàn thành

Đạt điểm 1,00

Select correct match for AX (Decimal) at watch points:

```
MOV AX, 1BC
MOV CL, 2
SHL AX, CL
```

watch point #1:

```
ADD AX, 166
```

watch point #2:

```
SHR AX, CL
```

watch point #3:

```
SHR AX, CL
```

.....

watch point #1:

watch point #2:

watch point #3:

Câu hỏi 3

Hoàn thành

Đạt điểm 0,50

if the location to which the control is to be transferred lies in a segment other than the current one, then the jump instruction is called

Select one:

- ☐ intrasegment mode
- ☒ intersegment mode
- ☐ intrasegment indirect mode
- ☐ intrasegment direct mode

Câu hỏi 4

Hoàn thành

Đạt điểm 1,00

Structural components of computer include:

Select one or more:

- ☒ System interconnection
- ☐ Interrupt
- ☒ Central processing unit
- ☒ I/O
- ☒ Memory
- ☐ DMA

Câu hỏi 5

Hoàn thành

Đạt điểm 0,50

Which could be correct ones for the destination operand in a data movement instruction?

Select one or more:

- ☐ immediate data
- ☐ all choices are correct
- ☒ register
- ☒ memory location

Câu hỏi 6

Hoàn thành

Đạt điểm 0,50

the instruction, JMP C008:2000h is an example of

Select one or more:

- ☐ intrasegment mode
- ☒ near jump
- ☐ intersegment jump
- ☒ far jump

Câu hỏi 7

Hoàn thành

Đạt điểm 1,00

Given a row of memory image in debug

0AE8:0120 13 96 D0 E0 00 40 08 42 - 99 80 3E 20 99 00 75 24

SI = 120

The following instruction is executed:

MOV EAX, [SI+4]

Assume the value in EAX is a 32-bit floating-point binary, what is the value of EAX in decimal?

Answer: 4000

Câu hỏi 8

Hoàn thành

Đạt điểm 1,00

Given a code snippet:

```
int n = 10;  
do {  
    n--;  
} while (n > 0);
```

Which ones are the equivalent logic sequence of instructions in Assembly

Select one or more:

- ☒ `mov cx, 10`
`a_label:`
`.....`
`loop a_label`
- ☐ `mov cx, 10`
`a_label:`
`.....`
`dec cx`
`cmp cx, 0`
`jz a_label`
- ☐ `mov cx, 10`
`a_label:`
`.....`
`dec cx`
`loop a_label`
- ☒ `mov cx, 10`
`a_label:`
`dec cx`
`cmp cx, 0`
`jz e_label`
`jmp a_label`
`e_label:`

Câu hỏi 9

Hoàn thành

Đạt điểm 1,00

The following sequence of instructions are executed. What is the correct value of AX, CX, DX at watch point?

```
MOV AX,30  
MOV CX,FFFF  
MUL CX
```

watch point:

CX =

AX =

DX =

Câu hỏi 10

Không trả lời

Đạt điểm 0,50

Write mask byte (in hex) to set higher 4 bits in a byte value with OR instruction (LSB is the 1st bit).

Answer:

Câu hỏi 11

Hoàn thành

Đạt điểm 0,50

After executing PUSH EAX instruction, the stack pointer

Select one:

- ☐ increment by 1
- ☒ decrements by 4
- ☐ decrement by 1
- ☐ increment by 2

Câu hỏi 12

Không trả lời

Đạt điểm 1,00

Given an assembly code copying the memory buffer Buff1 to Buff2:

```
PUSH DS
POP  ES
LEA  SI, Buff1
LEA  DI, Buff2
MOV  CX,20
;--- Start of block
```

cp_loop:

```
MOV  AL, Byte Ptr [SI]
MOV  Byte Ptr ES:[DI], AL
INC  SI
INC  DI
LOOP cp_loop
```

```
; ---End of block
```

Choose equivalent string operations in place of block

Select one or more:

- ☐ CLD
cp_loop:
MOVSB
LOOP cp_loop
- ☐ STD
cp_loop:
MOVSB
LOOP cp_loop
- ☐ CLD
cp_loop:
REP MOVSB
LOOP cp_loop
- ☐ CLD
REP MOVSB

Câu hỏi 13

Hoàn thành

Đạt điểm 0,50

the instruction that is used as prefix to an instruction to execute it repeatedly until the CX register becomes zero is

Select one:

- ☐ CMPS
- ☐ SCAS
- ☐ CMPS
- ☒ REP

Câu hỏi 14

Hoàn thành

Đạt điểm 0,50

Write mask byte (in hex) to clear all the lower 7 bits of a byte value with AND instruction.

Answer:

Câu hỏi 15

Không trả lời

Đạt điểm 1,00

Convert -89.2345 to IEEE 32-bit floating point format (1 sign+ 8 exponent + 23 mantissa) in hex

Answer:

Câu hỏi 16

Không trả lời

Đạt điểm 1,50

Given a row of memory image in debug

072C:FFF0 00 00 00 01 00 00 2C 07 - 07 01 2C 07 17 72 00 00

SS=072C, SP=FFF8, DS = 072C

Assume the stack now stores two (2) 16-bit parameters and one (1) 16-bit return address in following order: stack top (return address) >> parameter #1 >> parameter #2.

The following sequence of instructions are executed. What is the correct values at watch points?

MOV BP, SP

watch point #1 (BP):

MOV AX, [BP+2]

watch point #2 (AX):

ADD AX, [BP+4]

watch point #3 (AX):

MOV DI, 120

MOV [DI], AX

watch point #1:

watch point #2:

watch point #3:

Câu hỏi 17

Hoàn thành

Đạt điểm 0,50

The instruction that subtracts 1 from the contents of the specified register/memory location is

Select one:

- ☒ DEC
- ☐ SUB
- ☐ SBB
- ☐ INC

Câu hỏi 18

Không trả lời

Đạt điểm 1,00

Memory dump at 1D20:0200 shown as below:

1D20:0200 00 20 10 5D 55 47 00 90 - 00 10 20 30 40 50 60 70

Given value of registers:

DS = 1D20, ES = 1D20, DI = 20A

The following sequence of instructions are executed:

MOV SI,208h

MOV AX,0040h

MOV CX,000Ah

CLD

REPZ SCASB

watch point:

.....

What is the correct value of AX, SI, DI registers at watch point?

DI =

AX =

SI =

Câu hỏi 19

Hoàn thành

Đạt điểm 1,00

What is the meaning of Amdahl's law in processor performance evaluation?

Select one:

- ☐ the cost reduce when moving from single-core to multicore processor
- ☒ the maximum speedup of a multicore processor
- ☐ the potential speedup of a program using multiple processor compared to a single processor
- ☐ the speedup of a multicore processor when increasing system bus speed

Câu hỏi 20

Hoàn thành

Đạt điểm 0,50

Which are the correct actions for LODSW string operation if DF is reset (=0)

Select one or more:

- ☐ decrease DI by 2
- ☐ Load 16-bit value at memory location pointed by ES:[DI] into AX
- ☒ increase SI by 2
- ☒ Load 16-bit value at memory location pointed by DS:[SI] into AX

Câu hỏi 21

Không trả lời

Đạt điểm 1,00

When many devices of different transmission speed connect to the same bus, the overall system performance suffers. How did the design engineers resolved this:

Select one:

- ☒ PCI Express bus
- ☐ Multiple-Bus hierarchies
- ☐ PCI bus
- ☐ Split system bus into local bus and memory bus

Câu hỏi 22

Hoàn thành

Đạt điểm 0,50

the instruction, CMP to compare source and destination operands by

Select one:

- ☐ adding
- ☐ comparing
- ☐ dividing
- ☒ **subtracting**

Câu hỏi 23

Hoàn thành

Đạt điểm 1,00

To balance the super speed of CPU with the slow response of memory, which of the following measures have been made by engineers in system design?

Select one or more:

- ☐ Make use of both on-chip and off-chip cache memory
- ☒ Make wider data bus path
- ☒ Using higher-speed bus and us hierarchy
- ☒ To move data directly by DMA

Câu hỏi 24

Hoàn thành

Đạt điểm 1,00

The following sequence of instructions are executed. What is the correct value of AX, DX at watch point?

MOV DL,FF

MOV AL,42

IMUL DL

watch point:

AX =

DX =

Câu hỏi 25

Hoàn thành

Đạt điểm 0,50

In the RCR instruction, the contents of the destination operand undergoes function as

Select one:

- ☐ carry flag is pushed into LSB then MSB is pushed into carry flag
- ☐ overflow flag is pushed into MSB then LSB is pushed into carry flag
- ☒ **carry flag is pushed into MSB then LSB is pushed into carry flag**
- ☐ auxiliary flag is pushed into LSB then MSB is pushed into carry flag

Câu hỏi 26

Hoàn thành

Đạt điểm 0,50

Which could be correct ones for the source operand in an instruction?

Select one or more:

- ☒ **immediate data**
- ☒ **memory location**
- ☐ indirect data
- ☒ **register**

Câu hỏi 27

Hoàn thành

Đạt điểm 1,00

Convert the 32-bit floating point number A3358000 (in hex) to decimal.

Note:

Result with exponent should be written like (e.g): 1.2345678x10⁻¹³ or 1.2345678x10¹³ (no space between digits/characters)

Answer:

Câu hỏi 28

Hoàn thành

Đạt điểm 1,00

Select correct match for register values at watch points:

MOV AX, 152D

ADD AX, 003F

watch point #1:

ADD AH, 10

watch point #2:

.....

watch point
#2:

AH = 25 ▾

watch point
#1:

AL = 6C ▾

Câu hỏi 29

Hoàn thành

Đạt điểm 0,50

Which are the correct actions for SCASW string operation if DF is set (=1)

Select one or more:

☒ decrease DI by 2☒ compare the value in AX register with 16-bit value at the memory location pointed by ES:[DI] and set/clear flag bits accordingly☐ increase DI by 2☐ compare the value in AX register with 16-bit value at the memory location pointed by DS:[SI] and set/clear flag bits accordingly**Câu hỏi 30**

Hoàn thành

Đạt điểm 1,00

What is the correct value of SI, AL (in hex) at watch point:

01: MOV SI, 300h

02: MOV AL, 10h

03: MOV CX, 7

04: Loop_label:

05: MOV [SI], AL

06: ADD AL, 10h

07: INC SI

08: LOOP Loop_label

watch point:

SI 80h ▾

AL
= 80h ▾**Câu hỏi 31**

Hoàn thành

Đạt điểm 1,00

Select the correct sequence of instructions to compute -1024/128 (all values are in hex).

Step 1: CWD ▾

Step 2: MOV CX, 80 ▾

Step 3: MOV CL, 80 ▾

Step 4: IDIV CL ▾

Câu hỏi 32

Hoàn thành

Đạt điểm 1,00

Select correct match for AL and carry flag at watch point #1:

MOV BL, 8C

MOV AL, 7E

ADD AL, BL

watch point #1:

.....

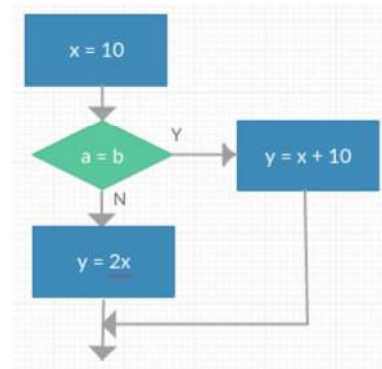
AL Carry
flag

Câu hỏi 33

Hoàn thành

Đạt điểm 1,00

Given a flowchart of an algorithm:



Select the correct instruction sequence:

Select one or more:

☐

```
mov dl,10
cmp al,bl
jnz n_label
add dl,10
jmp e_label
```

```
n_label:
mov cl,1
shl dl,cl
e_label:
mov dh,dl
```

☒

```
mov dl,10
cmp al,bl
jnz n_label
add dl,10
mov dh,dl
jmp e_label
```

```
n_label:
mov cl,1
shl dl,cl
e_label:
mov dh,dl
```

☐

```
mov dl,10
cmp al,bl
jnz n_label
add dl,10
jmp e_label
```

```
n_label:
mov cl,1
shr dl,cl
e_label:
mov dh,dl
```

☐

```
mov dl,10
cmp al,bl
jz n_label
mov cl,1
shl dl,cl
jmp e_label
```

```
n_label:
add dl,10
e_label:
mov dh,dl
```

Câu hỏi 34

Hoàn thành

Đạt điểm 0,50

After executing the POP EAX instruction, the stack pointer

Select one:

- ☐ decrements by 4
- ☐ decrements by 2
- ☒ increments by 4
- ☐ increment by 1

Câu hỏi 35

Hoàn thành

Đạt điểm 0,50

Sign-extend number BF (8-bit binary) to 16-bit. Write result in hex

Answer:

Câu hỏi 36

Hoàn thành

Đạt điểm 0,50

Which of the following instructions are not valid?

Select one or more:

- ☒ MOV DS, B800h
- ☐ MOV AX, [BP+2]
- ☒ MOV SP, SS:[SI+2]
- ☐ MOV AX, SI

Câu hỏi 37

Hoàn thành

Đạt điểm 1,00

The following sequence of instructions are executed. What is the correct value of flag bits at watch point?

MOV AL, 0F

ADD AL, F1

watch point:

Zero flag (OF) =

Carry flag (CF) =

Câu hỏi 38

Hoàn thành

Đạt điểm 1,00

Major structural components of the CPU include:

Select one or more:

- ☒ Registers
- ☒ Arithmetic and Logic Unit
- ☐ Instruction Pointer (PC)
- ☒ Interconnections
- ☒ Control Unit
- ☐ Instruction Register

Câu hỏi 39

Hoàn thành

Đạt điểm 1,00

Consider a magnetic disk drive with 8 surfaces, 512 tracks per surface, and 64 sectors per track. Sector size is 1 kB. What is the disk capacity

Answer:

Câu hỏi 40

Hoàn thành

Đạt điểm 1,00

What best describe the Spatial and Temporal Locality?

Temporal
locality

be exploited by keeping recently used instruction and data in cache memory and by exploiting a cache hierarchy

Spatial
locality

be exploited by moving data between cache and memory more efficient

Câu hỏi 41

Hoàn thành

Đạt điểm 1,00

Given a code snippet:

```
int ax, bx;
```

```
...
```

```
if (ax >= bx)
```

```
    ax -= bx;
```

```
else
```

```
    bx -= ax;
```

What is the equivalent logic sequence of instructions in Assembly

Select one:

- ☒ `cmp ax,bx`
`jl a_label`
`sub ax,bx`
`jmp x_label`
`a_label:`
`sub bx,ax`
`x_label:`
- ☐ `cmp ax,bx`
`jbe a_label`
`sub ax,bx`
`jmp x_label`
`a_label:`
`sub bx,ax`
`x_label:`
- ☐ `cmp ax,bx`
`ja a_label`
`sub ax,bx`
`jmp x_label`
`a_label:`
`sub bx,ax`
`x_label:`
- ☐ `cmp ax,bx`
`jge a_label`
`sub ax,bx`
`jmp x_label`
`a_label:`
`sub bx,ax`
`x_label:`

Câu hỏi 42

Hoàn thành

Đạt điểm 0,50

Which of the following is not a data copy/transfer instruction?

Select one or more:

- ☒ `ADC`
- ☐ `MOV`
- ☐ `LEA`
- ☒ `DAS`

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