Module 1 Summary Exercises

Due Apr 4 at 11:59pm **Points** 30 **Questions** 30
Available Mar 28 at 12am - Apr 4 at 11:59pm 8 days **Time Limit** 1,440 Minutes
Allowed Attempts 2

Instructions

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These exercises are based on the concepts introduced in Module 1. I encourage you to attempt these exercises twice, especially as a learning and study aid.

You will have two attempts, each of which will last for 24 hours, and only the top score will be counted. You are allowed any resources (including explorations, Piazza, classmates, the internet, etc...).

Good luck!

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	47 minutes	27 out of 30

Score for this attempt: **27** out of 30
Submitted Mar 30 at 8pm
This attempt took 47 minutes.

Question 1

1 / 1 pts

Which utility program reads an assembly language source file and produces an object file?

- detangler
- compiler
- assembler

Correct!

- editor
- loader
- linker

Question 2

1 / 1 pts

(True/False) Assembly Languages are **portable**.

- ○ True
- ◉ False

Correct!

Question 3

1 / 1 pts

A program is considered portable if it . . .

- ◉ can be executed on multiple platforms.
- ○ can be quickly copied from conventional RAM into high-speed RAM.
- ○ can be rewritten in a different programming language without losing its meaning.

Correct!

Question 4

1 / 1 pts

Language Hierarchy: Rank the following languages from **low level (1)** to **high level (4)**.

Level 4 (Highest Level): [Select]

Level 3: [Select]

Level 2: ARM Assembly

Level 1 (Lowest level): Machine Code

Answer 1:

Correct!

English

Answer 2:

Correct!

Python

Answer 3:

Correct!

ARM Assembly

Answer 4:

Correct!

Machine Code

Question 5

1 / 1 pts

Compared to higher-level languages, which of the following are benefits of Assembly Language programming? (Check all that apply)

Correct!

- [x] Hands-on Code Optimization
- [ ] Integrated Tools
- [ ] Intuitive Programs

Correct!

- [x] Direct Manipulation of Memory
- [ ] Ease of Use

Question 6

1 / 1 pts

What is the largest signed integer that may be stored in 32 bits?

Correct!

- (•) $2^{31} - 1$
- ( ) $2^{32} - 1$
- ( ) 2^{31}
- ( ) 2^{32}

Question 7

1 / 1 pts

The ASCII code values for alphabetic letters (e.g. 'a') are smaller than for decimal digits (e.g. '1').

- True
- False

Correct!

Question 8

1 / 1 pts

What is the range of decimal values for an unsigned DWORD?

- -2,147,483,648 to 2,147,483,648
- 0 to 4,294,967,296
- 0 to 4,294,967,295
- -2,147,483,648 to 2,147,483,647

Correct!

Question 9

1 / 1 pts

How many **bits** long is a DWORD (doubleword) on x86 systems?

Correct!

32

Correct Answers 32 (with margin: 0)

Question 10

1 / 1 pts

What is the largest unsigned integer that may be stored in 24 bits?

- 1,048,576
- 16,777,215 (Correct!)
- 65,536
- 32,767

Question 11

1 / 1 pts

Convert the following ASCII hex representation to a character string: `53 74 61 74 69 6F 6E 21`

Do not add any spaces. For example, the hex `31 2B 7A` represents the string: `1+z`

Correct!

Station!

Correct Answers

Station!

Question 12

1 / 1 pts

Convert the following string into its ASCII hex representation: `Magical`
Don't use 0x or h to represent the hex values. For example, the ASCII hex representation for "1+z" is 31 2B 7A

Correct!

4D 61 67 69 63 61 6C

Correct Answers

4D61676963616C

4D 61 67 69 63 61 6C

Question 13

1 / 1 pts

Which of the following binary values is equivalent to hexadecimal 7CBE?

- 0111 1011 1011 1100
- 0111 1100 1100 1110
- 0111 1101 1011 1110
- 0111 1100 1011 1110

Correct!

Question 14

1 / 1 pts

Which list contains the correct hexadecimal translation (in order) of the following unsigned decimal integers? 33, 95, 257

- 6A, 5F, 101
- 22, 5E, 11A

21, 62, 103

Correct!

21, 5F, 101

Question 15

1 / 1 pts

Complete the following Unsigned Binary Addition (answers should also be in Binary):

NOTE: Canvas may add thousands place commas (for example 11001100 may appear as 11,001,100) ... Please ignore these.

```
  10111010
+ 10100001
----------
```

Correct!

101,011,011

Correct Answer 101,011,011

Question 16

1 / 1 pts

Complete the following Unsigned Hexadecimal Addition (answers should also be in Hexadecimal):

NOTE: Canvas may add thousands place commas (for example 9C4B may appear as 9,C4B) ... Please ignore these.

```
  2C37
+ 571B
------
```

Correct!

8,352

Correct Answer 8,352

Question 17

1 / 1 pts

Complete the following **unsigned** Binary Subtraction:

```
  01110000
- 01101110
----------
```

NOTE: Represent answer as an 8-bit value, with no spaces or characters other than 0s and 1s.

Correct!

00000010

Correct Answers

00000010

0000 0010

10

Question 18

1 / 1 pts

Complete the following **unsigned** Hexadecimal Subtraction:

```
  83AA
- 47AB
------
```

NOTE: Represent answer as a 16-bit hex (four character) value, with no spaces or characters other than 0-9, A-F.

Correct!

3BFF

Correct Answers

3BFF

Question 19

1 / 1 pts

Convert the following **signed** SWORD to a decimal value.

`1111 0101 0001 0100`

Correct!

-2,796

Correct Answers -2,796 (with margin: 0)

Question 20

1 / 1 pts

Convert the following **unsigned** WORD to a decimal value.

`1010 0101 0110 0100`

Correct!

42,340

Correct Answers 42,340 (with margin: 0)

Question 21

0 / 1 pts

A primary limitation on the speed of internal communication on a machine is the width of the internal bus.

Correct Answer

- True

You Answered

- False

Question 22

1 / 1 pts

A bus is a set of parallel wires used to conduct a group of electrical signals simultaneously.

Answer 1:

Correct!

bus

Question 23

1 / 1 pts

When transferring instructions and data between the *Main Memory Unit* and the *CPU*, the memory location where the data is stored must be placed on the Address Bus.

Answer 1:

Correct!

Address

Question 24

0 / 1 pts

What component is responsible for communication among the various internal CPU components?

Correct Answer

- Internal Bus

You Answered

- Internal Line

- Control Unit
- Addressing Unit

Question 25

1 / 1 pts

Match the Instruction Execution steps to the correct order and description.

Correct!	**Step 1**	The control unit fetches th
Correct!	**Step 2**	The control unit increment
Correct!	**Step 3**	The control unit decodes t
Correct!	**Step 4**	If the instruction uses an i
Correct!	**Step 5**	The ALU executes the ins
Correct!	**Step 6**	If the output operand is in

Question 26

1 / 1 pts

Which register is known as a loop counter?

Correct!

- ECX
- EDX
- EAX
- EBX
- LOX

Question 27

0 / 1 pts

Changes made to the AL register will not modify the contents of the EAX register.

You Answered

- True

Correct Answer

- False

Question 28

1 / 1 pts

Which flag is set when an unsigned value is too large to fit into a destination operand?

- overflow
- auxiliary carry
- carry

Correct!

- sign

Question 29

1 / 1 pts

High-speed memory that reduces the frequency of access by the CPU to conventional memory is called

- system memory
- local memory
- virtual memory
- cache memory

Correct!

Question 30

1 / 1 pts

Correctly match the status flags to their description.

Correct!	**The Carry flag**	set when an unsigned arit
Correct!	**The Overflow flag**	set when the result of a si
Correct!	**The Sign flag**	set when the result of an a
Correct!	**The Zero flag**	set when the result of an a
Correct!	**The Parity flag**	set if the least-significant b

Quiz Score: **27** out of 30