

Spring 2025, MIS 102 – COMPUTER PROGRAMMING

Quiz 1

姓名: _____ 學號: _____ 系級: _____

1. [60 pts]

1. What is the right order of the six phases of a C development environment?

- (1) Programmers create programs in the editor.
- (2) Loader puts the program in memory.
- (3) Preprocessor program processes the code.
- (4) Linker links the object code with the libraries, creates an executable file and stores it on disk.
- (5) Compilers create object code and store it on disk.
- (6) The CPU takes each instruction and executes it.

- (a) (1) ->(2) ->(3) ->(4) ->(5) ->(6)
- (b) (1) ->(3) ->(2) ->(4) ->(5) ->(6)
- (c) (1) ->(3) ->(5) ->(4) ->(2) ->(6)
- (d) (1) ->(3) ->(2) ->(5) ->(4) ->(6)

2. What is the difference between '==' and '=' in C programming ?

- (a) They work actually the same.
- (b) '=' is used as an assignment while '==' is a comparison operator.
- (c) '==' doesn't exist in C.
- (d) '==' is used as an assignment while '=' is a comparison operator.

3. Which of the following statements about the below C code is CORRECT?

```
#include <stdio.h>
int main(void){

    printf('welcome to c\\!\\n');

}
```

- (a) We need to 'return 0' at the end to exit the main function. Otherwise, we can't compile and run this program.
- (b) '\ ' is an escape character in C ,and '\n' is a newline character.
- (c) The output will be => Welcome to c!
- (d) The void indicates that the main() function will return nothing, and int means that it takes an integer argument.
- (e) The main function isn't necessary in C if we have other functions to do the job.

4. C includes 3 control structures except_____.

- (a) Sequence Structure
- (b) Selection Structure
- (c) Repetition Structure
- (d) Operation Structure

5. Which of the following is NOT a C keyword?

- (a) void
- (b) while
- (c) switch
- (d) main

6. Which of the following statements about C and Python programming is FALSE?

- (a) 'x' is a valid character in C.
- (b) "hello" is a valid string in C.
- (c) str = ' Welcome to "Python" ' is invalid in python.
- (d) # is used for comments in Python.

7. Which of the following characters is used in printing Horizontal tab in C?

- (a) \b
- (b) \t
- (c) \n
- (d) \a

8. Which of the following statements about Python programming is FALSE?

- (a) 'raise' can be used as a variable name
- (b) '*' can be used to repeat strings.
- (c) '+' can be used to concatenate strings.
- (d) function 'type()' can be used to know the current type of a variable.

9. Which of the following can be considered equivalent to C expression $x = a > b ? 1 : 0$?

- (a) if (a > b) {a = 1; b = 0;}
- (b) if (x == a) b = 1;
- (c) if (a > b) x = 0;
- (d) if (a <= b) x = 0; else x = 1;

10. Regarding Python variable naming rules, which of the following is INCORRECT?

- (A) A variable name can contain numbers but cannot start with a number.
- (B) Variable names are case-sensitive.
- (C) A variable name can contain spaces to separate words.
- (D) A variable name can include underscores (_)

11. In Python, which of the following will NOT cause a syntax error?

- (A) A variable name starting with a number
- (B) Using for as a variable name
- (C) Using = instead of == in a conditional statement
- (D) Using triple quotes "" or "" to create a multiline string

12. Which of the following statements is FALSE?

- (a) All C programs can be written in terms of sequence structure, selection structure, and repetition/iteration structure.
- (b) Flowcharts are graphical representations of an algorithm or of a portion of an algorithm.
- (c) Algorithms are often represented by Pseudocode in plain English or by Flowchart visually
- (d) Specifying actions to be repeated while some conditions remain true is called "Selection Structure".

13. Which of the following logical operators has higher precedence?

- (a) &&
- (b) !
- (c) ||
- (d) !=

14. Consider the following C expression:

`x = a = b > c ? 1 : 0;`

What is the execution order of this expression?

- (A) `b > c` is evaluated first, the result is assigned to `x`, and `a` is ignored.
- (B) `b > c` is evaluated first, then 1 or 0 is assigned to `a`, and finally, `x` receives the value of `a`.
- (C) `b > c` is evaluated first, then `x` is assigned first, and then `a` is set to `x`.
- (D) `x` is assigned `a` first, and then `b > c` is evaluated and affects the value of `a`.

2. [40 pts]

Q1 (20 pts): Write a C program that asks the user to enter a positive integer n , then calculates and prints the sum of all numbers from 1 to n .

Example Input:

Enter a positive integer: 5

Example Output:

Sum: 15

Q2 (20 pts): Write a program that takes three integers as input and determines whether they can form a valid triangle. If they can, classify the triangle as equilateral, isosceles, or scalene.

Conditions:

1. A valid triangle must satisfy the triangle inequality theorem: The sum of any two sides must be greater than the third side.
2. Equilateral Triangle: All three sides are equal.
3. Isosceles Triangle: Only two sides are equal.
4. Scalene Triangle: No sides are equal, but it still satisfies the triangle inequality theorem.

Here are some examples:

Example Input:

Enter three integers:5 5 5

Example Output:

This is an equilateral triangle.

Example Input:

Enter three integers:3 4 4

Example Output:

This is an isosceles triangle.

Example Input:

Enter three integers:3 4 5

Example Output:

This is a scalene triangle.

Example Input:

Enter three integers:1 2 3

Example Output:

Cannot form a valid triangle.