1.Under what conditions should an integrated circuit be used in an IoT device?

When highest performance is required.

When lowest power is required.

When the function is already commonly available as an integrated circuit.

**All of the above.**

2.Given a choice between implementing a function as an integrated circuit (in hardware) or as a program (in software), what factor needs to be considered the least?

The cost of manufacturing the integrated circuit.

The required time to design the integrated circuit vs. the program.

The performance required of the final product.

**The physical look of the final device.**

3.Generally, in a computer-based system, main memory is much larger than cache.

**True**

False

4.What is the fastest type of storage in a computer-based device?

**Registers**

Cache

Flash

Main memory

5.Which statement is false?

A programmer may write assembly code directly if performance is very important.

High-level languages are generally easier to program in than assembly language.

**Machine language is universal, allowing programs written in machine language to be executed on any microprocessor.**

Assembly code is easier to read than machine code.

6.What does an assembler generate?

**Machine code from assembly code.**

Assembly code from a high-level language.

Assembly code from machine code.

Machine code from a high-level language.

7.Compiled code generally executes faster than interpreted code.

**True**

False

8.Which of the following is NOT a benefit of using an operating system?

Many programs can execute on the same processor at the same time.

**The frequency of the microcontroller clock can be significantly increased.**

The operating system provides a convenient programming interface to the hardware.

The operating system enables separation between multiple processes.