**1.1 Why is the computer used by so many different people, in so many different professions?**

Computer are versatile tools and can perform many different jobs based on someone’s profession. Computers are the most versatile tool ever made

**1.2 List the five major hardware components of a computer system.**

1. Central processing unit
2. Main memory
3. Secondary storage device
4. Input devices
5. Output devices

**1.3 Internally, the CPU consists of what two units?**

Control unit and the arithmetic and logic unit

**1.4 Describe the steps in the fetch/decode/execute cycle.**

1. Fetch- The CPU’s control unit fetches, from the main memory, the next instruction in the sequence of program instructions.
2. Decode- The instruction is the encode in the form of a number. The control unit decodes the instruction and generates an electronic signal.
3. Execute- The signal is routed to the appropriate component of the computer. The signal causes the component to perform an operation.

**1.5 What is the memory address? What is its purpose?**

The memory address is the byte that is assigned in a certain location.

**1.6 Explain why computers have both main memory and secondary storage.**

A secondary storage device can hold large amounts of data for a longtime even when the computer is powered off while RAM is fast speed storage to load apps while the computer is on.

**1.7 What does the term “multitasking” mean?**

This means the computer is able to run multiple programs at once.

**1.8 Describe the difference between a keyword and programmer-defined symbol.**

Keyboards have designated meaning while programmer-defined symbols are given a meaning by the programmer.

**1.9 Describe the difference between operators and punctuation symbols.**

Operators perform actions between data while punctuation symbols end statements.

**1.10 Describe the difference between a program line and a statement.**

A program line is just a single that appears in the body of the paragraph a statement is a complete instruction.

**1.11 Why are variables called “variable”?**

Variables are called this because they are memory locations that hold data.

**1.12 What happens to a variable’s current contents when a new value is stored there?**

The content gets erased.

**1.13 What is a compiler?**

A program that translates source code in executable code.

**1.14 What is a syntax error?**

Mistakes that the programmer makes.

**1.15 What is byte code?**

Code that is executable by the Java Virtual Machine.

**1.16 What is the JVM?**

I a program that reads byte code.

**1.17 What four items should you identify when defining what program is to do?**

The purpose, input, process, output.

**1.18 What does it mean to “visualize a program running”? What is the value of such an activity?**

To visualize a program running is to imagine in your mind what the program would do while it is running. The importance of doing this is to make sure what you want your program to do.

**1.19 What is pseudocode?**

A cross between human language and a programming language.

**1.20 Describe what a complier does with a program’s source code.**

A compiler translates source code into an executable form.

**1.21 What is a runtime error?**

A runtime error is an error that occurs while the program is running.

**1.22 Is a syntax error found by the complier or when the program is running?**

Syntax errors are found by the compiler.

**1.23 What is the purpose of testing a program with sample data or input?**

You can provide sample data, and predict what the output should be.

**1.24 In procedural programming, what two parts of a program are typically separated?**

Data and the code that operates on the data.

**1.25 What are an object’s attributes?**

The data contained in an object.

**1.26 What are an object’s methods?**

The procedures, or behaviors, that an object performs.

**1.27 What is encapsulation?**

The combining of data and code into a single object.

**1.28 What is data hiding?**

An object’s ability to hide its data from code that is outside the object.