**Starting Out with C++ from Control Structures to Objects, 10e (Gaddis)**

**Chapter 1 Introduction to Computers and Programming**

**TRUE/FALSE**

1. Software engineering is a field that encompasses designing, writing, testing, debugging, documenting, modifying, and maintaining computer programs.

ANS: T

2. Pseudocode is a form of a program statement that will always evaluate to "false."

ANS: F

3. In programming, the terms "line" and "statement" always mean the same thing.

ANS: F

4. In C++, key words are written in all lowercase letters.

ANS: T

5. The preprocessor executes after the compiler.

ANS: F

6. Machine language is an example of a high-level language.

ANS: F

7. A CPU only understands machine language instructions.

ANS: T

8. Programs are often referred to as hardware.

ANS: F

9. The CPU is the most important component in a computer because without it, the computer could not run software.

ANS: T

10. The term "bit" stands for binary digit.

ANS: T

**MULTIPLE CHOICE**

1. What does the term *hardware* refer to?

|  |  |
| --- | --- |
| a. | The relative difficulty of writing computer programs |
| b. | The physical components that make up a computer |
| c. | The way a computer's storage space is organized |
| d. | The logical flow of instructions |
| e. | None of these |

ANS: B

2. A(n) \_\_\_\_\_\_\_\_\_\_ is a set of instructions that the computer follows to solve a problem.

|  |  |
| --- | --- |
| a. | compiler |
| b. | linker |
| c. | program |
| d. | operator |
| e. | None of these |

ANS: C

3. Computer programs are also known as

|  |  |
| --- | --- |
| a. | hardware |
| b. | firmware |
| c. | software |
| d. | Any of these |
| e. | None of these |

ANS: C

4. At the heart of a computer is its central processing unit. The CPU's job is:

|  |  |
| --- | --- |
| a. | To fetch instructions |
| b. | To carry out the operations commanded by the instructions |
| c. | To produce some outcome or resultant information |
| d. | All of these |
| e. | None of these |

ANS: D

5. A computer stores a program while it is running

|  |  |
| --- | --- |
| a. | in main memory |
| b. | on a hard disk |
| c. | on the computer monitor |
| d. | in the CPU |
| e. | None of these |

ANS: A

6. The \_\_\_\_\_\_\_\_\_\_ decodes an instruction and generates an electronic signal.

|  |  |
| --- | --- |
| a. | Arithmetic and Logic Unit |
| b. | Main memory |
| c. | BIOS |
| d. | Control Unit |
| e. | None of these |

ANS: D

7. The CPU's control unit retrieves the next instruction in a sequence of program instructions from main memory in the \_\_\_\_\_\_\_\_\_\_ stage.

|  |  |
| --- | --- |
| a. | fetch |
| b. | decode |
| c. | execute |
| d. | portability |

ANS: A

8. During which stage does the central processing unit analyze the instruction and encode it in the form of a number, and then generate an electronic signal?

|  |  |
| --- | --- |
| a. | fetch |
| b. | decode |
| c. | execute |
| d. | portability |

ANS: B

9. The two parts of the CPU are

|  |  |
| --- | --- |
| a. | the output device and the input device |
| b. | the software and the hardware |
| c. | the Control Unit and the Arithmetic and Logic Unit |
| d. | the single-task device and the multi-task device |
| e. | None of these |

ANS: C

10. A volatile type of memory that is used for temporary storage is

|  |  |
| --- | --- |
| a. | an address |
| b. | the ALU |
| c. | RAM |
| d. | a disk drive |
| e. | None of these |

ANS: C

11. The purpose of a memory address is:

|  |  |
| --- | --- |
| a. | to identify the location of a byte in memory |
| b. | to prevent multitasking |
| c. | to obtain an algorithm |
| d. | to improve the speed of processing |
| e. | None of these |

ANS: A

12. Programs are normally stored in \_\_\_\_\_\_\_\_\_\_ and loaded into main memory as needed.

|  |  |
| --- | --- |
| a. | the input device |
| b. | the output device |
| c. | secondary storage |
| d. | the CPU |
| e. | None of these |

ANS: C

13. A computer monitor is a type of

|  |  |
| --- | --- |
| a. | input device |
| b. | output device |
| c. | storage device |
| d. | software |
| e. | None of these |

ANS: A

14. Which of the following is *not* a common input device?

|  |  |
| --- | --- |
| a. | keyboard |
| b. | mouse |
| c. | digital camera |
| d. | printer |
| e. | All are common input devices |

ANS: D

15. Which of the following is *not* one of the major components of a computer system?

|  |  |
| --- | --- |
| a. | the preprocessor |
| b. | the CPU |
| c. | main memory |
| d. | input/output devices |
| e. | secondary storage |

ANS: A

16. A set of well-defined steps for performing a task or solving a problem is known as a(n):

|  |  |
| --- | --- |
| a. | hierarchy chart |
| b. | algorithm |
| c. | instruction set |
| d. | statement |
| e. | None of these |

ANS: B

17. When a programmer saves to a file the statements he or she writes to create a program, these statements are

|  |  |
| --- | --- |
| a. | high level |
| b. | source code |
| c. | a preprocessor file |
| d. | object code |
| e. | None of these |

ANS: B

18. The programmer usually enters source code into a computer with

|  |  |
| --- | --- |
| a. | a hierarchy chart |
| b. | a text editor |
| c. | a compiler |
| d. | pseudocode |
| e. | None of these |

ANS: B

19. In the process of translating a source file into an executable file, which of the following is the correct sequence?

|  |  |
| --- | --- |
| a. | Source code, preprocessor, modified source code, linker, object code, compiler, executable code |
| b. | Preprocessor, source code, compiler, executable code, linker, modified source code, object code |
| c. | Source code, compiler, modified source code, preprocessor, object code, linker, executable code. |
| d. | Source code, preprocessor, modified source code, compiler, object code, linker, executable code. |
| e. | Source code, linker, object code, compiler, modified source code, preprocessor, executable code. |

ANS: D

20. An Integrated Development Environment (IDE) typically consists of

|  |  |
| --- | --- |
| a. | a text editor |
| b. | a compiler |
| c. | a debugger |
| d. | All of the above |
| e. | None of these |

ANS: D

21. \_\_\_\_\_\_\_\_ are used to translate each source code instruction into the appropriate machine language instruction.

|  |  |
| --- | --- |
| a. | modules |
| b. | runtime libraries |
| c. | compilers |
| d. | preprocessor directives |
| e. | None of these |

ANS: C

22. This is a set of rules that must be followed when constructing a program:

|  |  |
| --- | --- |
| a. | syntax |
| b. | punctuation |
| c. | key words |
| d. | operators |
| e. | identifiers |

ANS: A

23. Words that have a special meaning and may be used only for their intended purpose are known as

|  |  |
| --- | --- |
| a. | operators |
| b. | programmer defined words |
| c. | key words |
| d. | syntax |
| e. | None of these |

ANS: C

24. Which of the following best describes an operator?

|  |  |
| --- | --- |
| a. | An operator is a rule that must be followed when constructing a program. |
| b. | An operator allows you to perform operations on one or more pieces of data. |
| c. | An operator marks the beginning or ending of a statement, or is used to separate items in a list. |
| d. | An operator is a word that has a special meaning. |
| e. | An operator is a symbolic name that refers to a variable. |

ANS: B

25. This is used in a program to mark the beginning or ending of a statement, or separate items in a list:

|  |  |
| --- | --- |
| a. | separators |
| b. | punctuation |
| c. | operators |
| d. | key words |
| e. | None of these |

ANS: B

26. Characters or symbols that perform operations on one or more operands are:

|  |  |
| --- | --- |
| a. | separators |
| b. | op codes |
| c. | operators |
| d. | key words |
| e. | None of these |

ANS: C

27. This is a complete instruction that causes the computer to perform some action:

|  |  |
| --- | --- |
| a. | line |
| b. | statement |
| c. | variable |
| d. | key word |
| e. | None of these |

ANS: B

28. A named storage location in the computer's memory that holds a piece of information is a(n):

|  |  |
| --- | --- |
| a. | variable |
| b. | operator |
| c. | key word |
| d. | statement |
| e. | None of these |

ANS: A

29. A variable definition defines the name of a variable that will be used in a program, as well as:

|  |  |
| --- | --- |
| a. | the type of data it will be used to hold |
| b. | the operators that will be used on it |
| c. | the number of times it will be used in the program |
| d. | the value it will hold |
| e. | None of these |

ANS: A

30. Three primary activities of a program are:

|  |  |
| --- | --- |
| a. | variable definitions, operators, lists of key words |
| b. | lines, statements, punctuation |
| c. | input, processing, output |
| d. | integer, floating-point, character definitions |
| e. | None of these |

ANS: C

31. Which step uncovers any syntax errors in your program?

|  |  |
| --- | --- |
| a. | editing |
| b. | compiling |
| c. | linking |
| d. | executing |
| e. | None of these |

ANS: B

32. Mistakes that cause a running program to produce incorrect results are called:

|  |  |
| --- | --- |
| a. | syntax errors |
| b. | logic errors |
| c. | compiler errors |
| d. | linker errors |
| e. | None of these |

ANS: B

33. The programming process consists of several steps, which include:

|  |  |
| --- | --- |
| a. | key words, operator definitions, punctuation |
| b. | design, creation, testing, debugging |
| c. | input, processing, output |
| d. | syntax, logic, error handling |
| e. | None of these |

ANS: B

34. The first step in writing a program is to

|  |  |
| --- | --- |
| a. | type the code |
| b. | visualize the program running on a computer |
| c. | visualize logical errors |
| d. | clearly define what the program is to do |
| e. | None of these |

ANS: D

35. A model often used when creating a program that begins with the overall task and refines it into smaller subtasks is a(n)

|  |  |
| --- | --- |
| a. | flowchart |
| b. | UML diagram |
| c. | blueprint |
| d. | hierarchy chart |
| e. | None of these |

ANS: D

36. The term that refers to the programmer reading the program from the beginning and stepping through each statement is

|  |  |
| --- | --- |
| a. | pseudocoding |
| b. | software engineering |
| c. | desk checking |
| d. | spot checking |
| e. | None of these |

ANS: C

37. The two methods used by C++ to write computer programs are:

|  |  |
| --- | --- |
| a. | top-down programming and procedural programming |
| b. | procedural programming and object-oriented programming |
| c. | pseudocoding and object-oriented programming |
| d. | flowcharting and procedural programming |
| e. | None of these |

ANS: B