

*Test Bank for Starting Out with C++
from Control Structures through
Objects 11th Edition by Gaddis*

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Starting Out with C++: From Control Structures through Objects, 11e (Gaddis)
Chapter 1 Introduction to Computers and Programming

True/False Questions

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

Answer: TRUE

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

Answer: FALSE

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

Answer: FALSE

4) In C++, keywords are written in all lowercase letters.

Answer: TRUE

5) The preprocessor executes after the compiler.

Answer: FALSE

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

Answer: FALSE

7) A CPU only understands machine language instructions.

Answer: TRUE

8) Programs are often referred to as hardware.

Answer: FALSE

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

Answer: TRUE

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

Answer: TRUE

11) During the execute stage of the fetch/decode/execute cycle, a signal is routed to the appropriate component of the computer, causing it to perform an operation.

Answer: TRUE

12) A Graphics Processing Unit (GPU) is designed to perform many calculations simultaneously, making it well-suited for AI, machine learning, and graphics processing.

Answer: TRUE

13) Main memory is nonvolatile, meaning its contents are preserved even when the computer is powered off.

Answer: FALSE

14) Cloud storage is a form of secondary storage that allows data to be accessed from multiple devices over an internet connection.

Answer: TRUE

15) An operating system is an example of application software.

Answer: FALSE

16) Pseudocode is a tool used during program design that combines elements of human language and a programming language to outline a program's logic.

Answer: TRUE

17) A runtime error is always detected and reported by the compiler before the program is executed.

Answer: FALSE

Multiple Choice Questions

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

Answer: 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

Answer: C

3) Computer programs are also known as

- A) hardware
- B) firmware
- C) software
- D) Any of these
- E) None of these

Answer: 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

Answer: 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

Answer: 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

Answer: 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

Answer: 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

Answer: 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

Answer: 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

Answer: 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

Answer: A

- 12) During which stage of the fetch/decode/execute cycle is a signal sent to the appropriate hardware component to carry out an operation?
- A) fetch
 - B) decode
 - C) execute
 - D) portability
 - E) None of these

Answer: C

- 13) Which of the following best describes a Graphics Processing Unit (GPU)?
- A) a processor that executes one instruction at a time very quickly
 - B) a processor designed to perform many calculations simultaneously, used for graphics, AI, and machine learning
 - C) a type of volatile memory used to store running programs
 - D) the unit inside the CPU that coordinates all CPU operations
 - E) None of these

Answer: B

- 14) Which of the following is an example of system software?
- A) a word processing program
 - B) a video game
 - C) an operating system
 - D) a web browser
 - E) None of these

Answer: C

- 15) A utility program is best described as
- A) a program that controls the internal hardware operations of a computer
 - B) a program such as a virus scanner or file-compression tool that performs a specialized task
 - C) the compiler and linker used to translate source code
 - D) a program used directly by users to accomplish everyday tasks such as writing documents or browsing the web
 - E) None of these

Answer: B

16) 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

Answer: C

17) A computer screen is a type of

- A) input device
- B) output device
- C) storage device
- D) software
- E) None of these

Answer: A

18) Which of the following is *not* a common input device?

- A) keyboard
- B) mouse
- C) camera
- D) printer
- E) All are common input devices

Answer: D

19) 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

Answer: A

20) 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

Answer: B

21) 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

Answer: B

22) 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

Answer: D

23) 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

Answer: D

24) A _____ is used to translate source code instructions into the machine language instructions.

- A) module
- B) runtime library
- C) compiler
- D) preprocessor directive
- E) None of these

Answer: C

25) This is a set of rules that must be followed when constructing a program:

- A) syntax
- B) punctuation
- C) keywords
- D) operators
- E) identifiers

Answer: A

26) 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) keywords
- D) syntax
- E) None of these

Answer: C

27) 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.

Answer: B

28) 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) keywords
- E) None of these

Answer: B

29) Characters or symbols that perform operations on one or more operands are

- A) separators
- B) op codes
- C) operators
- D) keywords
- E) None of these

Answer: C

30) This is a complete instruction that causes the computer to perform some action:

- A) line
- B) statement
- C) variable
- D) keyword
- E) None of these

Answer: B

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

- A) variable
- B) operator
- C) keyword
- D) statement
- E) None of these

Answer: A

32) 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

Answer: A

33) Three primary activities of a program are

- A) variable definitions, operators, lists of keywords
- B) lines, statements, punctuation
- C) input, processing, output
- D) integer, floating-point, character definitions
- E) None of these

Answer: C

34) Which step uncovers any syntax errors in your program?

- A) editing
- B) compiling
- C) linking
- D) executing
- E) None of these

Answer: B

35) 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

Answer: B

36) The programming process consists of several steps, which include

- A) keywords, operator definitions, punctuation
- B) design, creation, testing, debugging
- C) input, processing, output
- D) syntax, logic, error handling
- E) None of these

Answer: B

37) What is pseudocode?

- A) another name for machine language
- B) a diagram that shows the logical flow of a program
- C) a cross between human language and a programming language used to plan a program's logic
- D) a diagram that graphically depicts the structure of a program using boxes and connections
- E) None of these

Answer: C

38) The process of breaking a program's overall task into smaller and smaller subtasks during program design is known as

- A) pseudocoding
- B) top-down design
- C) object-oriented programming
- D) desk checking
- E) None of these

Answer: B

39) 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

Answer: D

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

- A) flowchart
- B) UML diagram
- C) blueprint
- D) hierarchy chart
- E) None of these

Answer: D

41) 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

Answer: C

42) 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

Answer: B