Chapter 2: Problem Solving Using C++

TRUE/FALSE

1. Modular programs are easier to develop, correct, and modify than programs constructed in some other manner.

   ANS: T   PTS: 1   REF: 45

2. One important requirement for designing a good function is giving it a name that conveys some idea of what the function does.

   ANS: T   PTS: 1   REF: 47

3. Except for strings, double quotes, identifiers, and keywords, C++ ignores all white space.

   ANS: T   PTS: 1   REF: 56

4. C++ is a case-sensitive language.

   ANS: T   PTS: 1   REF: 48

5. Programs in C++ can have more than one `main()` function.

   ANS: F   PTS: 1   REF: 48

6. Preprocessor commands end with a semicolon.

   ANS: F   PTS: 1   REF: 51

7. C++ provides ten built-in integer data types.

   ANS: F   PTS: 1   REF: 61

8. You cannot add and subtract character data and mix it with integer data to produce useful results.

   ANS: F   PTS: 1   REF: 70

9. Although declaration statements can be placed anywhere in a function, typically they're grouped together and placed after the function's opening brace.

   ANS: T   PTS: 1   REF: 81

10. Omitting the parentheses after `main()` is a common programming error.

    ANS: T   PTS: 1   REF: 97

MULTIPLE CHOICE

1. Programs with a structure consisting of interrelated segments, called _____, are arranged in a logical, easily understandable order to form an integrated and complete unit.
   a. blocks   c. units

b. modules   d. procedures

ANS: B   PTS: 1   REF: 45

2. ____ programs are easier to develop, correct, and modify than programs constructed in some other manner.
   a. Modular   c. Sequential
   b. Handwritten   d. Low-level

ANS: A   PTS: 1   REF: 45

3. A ____ contains both data and functions appropriate for manipulating the data.
   a. segment   c. class
   b. block   d. function

ANS: C   PTS: 1   REF: 47

4. A(n) ____ is a word the language sets aside for a special purpose and can be used only in a specified manner.
   a. codeword   c. identifier
   b. keyword   d. classname

ANS: B   PTS: 1   REF: 47

5. The maximum number of characters in a function name is ____.
   a. 128   c. 512
   b. 256   d. 1024

ANS: D   PTS: 1   REF: 47

6. A(n) ____ is a word designed as a memory aid.
   a. mnemonic   c. reserved word
   b. keyword   d. identifier

ANS: A   PTS: 1   REF: 48

7. The `main()` function is referred to as a(n) ____ function because it tells other functions the sequence in which they execute.
   a. logical   c. driver
   b. auxiliary   d. class

ANS: C   PTS: 1   REF: 48

8. Data transmitted to a function at runtime is referred to as the ____ of the function.
   a. return value   c. body
   b. arguments   d. structure

ANS: B   PTS: 1   REF: 49

9. The ____ is an output object that sends data it receives to the standard display device.
   a. `out`   c. `print`
   b. `cin`   d. `cout`

ANS: D   PTS: 1   REF: 50

10. Preprocessor commands begin with a ____ sign.
    a. `#`   c. `//`

b. !   d. */

ANS: A   PTS: 1   REF: 51

11. _____ in C++ are any combination of letters, numbers, and special characters enclosed in quotation marks.
   a. Arrays   c. Enums
   b. Strings   d. Objects

ANS: B   PTS: 1   REF: 52

12. The newline escape sequence is _____.
   a. \l   c. \n
   b. \r   d. \t

ANS: C   PTS: 1   REF: 52

13. _____ are explanatory remarks made in a program.
   a. Comments   c. Escape sequences
   b. Strings   d. Classes

ANS: A   PTS: 1   REF: 57

14. A _____ begins with two slashes (//) and continues to the end of the line.
   a. program comment   c. block comment
   b. function comment   d. line comment

ANS: D   PTS: 1   REF: 57

15. A(n) _____ is an acceptable value for a data type.
   a. primitive value   c. built-in value
   b. literal   d. class value

ANS: B   PTS: 1   REF: 61

16. The three most important and common integer types used in most applications are `int`, `char`, and _____.
   a. `long int`   c. `bool`
   b. `unsigned char`   d. `long`

ANS: C   PTS: 1   REF: 61

17. The C++ operator _____ provides the number of bytes used to store values for any data type named in the operator's parentheses.
   a. `size()`   c. `length()`
   b. `sizeof()`   d. `lengthof()`

ANS: B   PTS: 1   REF: 65

18. A(n) _____ number, more commonly known as a real number, can be the number zero or any positive or negative number that contains a decimal point.
   a. boolean   c. long int
   b. integer   d. floating-point

ANS: D   PTS: 1   REF: 67

19. A(n) _____ is an item used to change how the output stream of characters is displayed.

a. manipulator
b. escape sequence

c. string
d. char object

ANS: A   PTS: 1   REF: 72

20. A(n) _____ is simply a name the programmer assigns to refer to computer storage locations.
a. constant
b. variable

c. expression
d. identifier

ANS: B   PTS: 1   REF: 79

21. A(n) _____ data value is considered a complete entity and can't be decomposed into a smaller data type supported by the language.
a. composed
b. atomic

c. complex
d. real

ANS: B   PTS: 1   REF: 82

22. When a declaration statement is used to store a value into a variable, the variable is said to be _____.
a. initialized
b. deleted

c. reserved
d. used

ANS: A   PTS: 1   REF: 83

23. The value stored in the variable is referred to as the variable's _____.
a. address
b. location

c. data
d. contents

ANS: D   PTS: 1   REF: 86

24. To determine the address of a variable, we can use C++'s address operator, _____, which means "the address of."
a. *
b. =

c. &
d. !

ANS: C   PTS: 1   REF: 88

25. A common programming error consists of forgetting to separate data streams sent to cout with the insertion symbol, _____.
a. <
b. >

c. >>
d. <<

ANS: D   PTS: 1   REF: 97

COMPLETION

1. A program consists of subprograms, called _____, that are designed and developed to perform a specific task.

   ANS: modules

   PTS: 1   REF: 46

2. In C++, a module can be a class or a(n) _____.

ANS: function

PTS: 1   REF: 46

3. In an object-oriented language, such as C++, a(n) _____ encapsulates both data and sets of operations.

ANS: class

PTS: 1   REF: 47

4. In a function header, the _____ before the function name defines the type of value the function returns when it has completed operating.

ANS: keyword

PTS: 1   REF: 49

5. Each _____ inside the function body must end with a semicolon (;).

ANS: statement

PTS: 1   REF: 50

6. The output object that sends data it receives to the standard display device, or console, is called _____.

ANS: cout

PTS: 1   REF: 50

7. The _____ and ostream classes provide the data declarations and methods used for data input and output, respectively.

ANS: istream

PTS: 1   REF: 51

8. C++ supports two types of comments: line and _____.

ANS: block

PTS: 1   REF: 57

9. A(n) _____ is defined as a set of values and a set of operations that can be applied to these values.

ANS:
data type
class

PTS: 1   REF: 60

10. In C++, a(n) _____ character changes the normal interpretation of the character following it and alters its meaning.

ANS: escape

PTS: 1   REF: 52

11. The _____ data type is used to store single characters.

ANS: char

PTS: 1   REF: 62

12. A(n) _____ data type allows negative values to be stored as well as zero and positive values.

ANS: signed

PTS: 1   REF: 66

13. In C++, a(n) _____ is any combination of operators and operands that can be evaluated to yield a value.

ANS: expression

PTS: 1   REF: 73

14. A(n) _____ statement names a variable and specifies the data type that can be stored in it.

ANS: declaration

PTS: 1   REF: 80

15. Variables used to hold single-precision values are declared by using the keyword _____.

ANS: float

PTS: 1   REF: 67

16. Every variable has three major items associated with it: its data type, the value stored in it, and its _____.

ANS: address

PTS: 1   REF: 87

17. Forgetting to enclose a string sent to _____ with quotation marks is a common programming error.

ANS: cout

PTS: 1 REF: 97