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**Chapter 2: Problem Solving Using C++**

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**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

1

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

1

11. \_\_\_\_ in C++ are any combination of letters, numbers, and special characters enclosed in quotation marks.

- a. Arrays
- b. Strings
- c. Enums
- d. Objects

ANS: B PTS: 1 REF: 52

12. The newline escape sequence is \_\_\_\_.

- a. \l
- b. \r
- c. \n
- d. \t

ANS: C PTS: 1 REF: 52

13. \_\_\_\_ are explanatory remarks made in a program.

- a. Comments
- b. Strings
- c. Escape sequences
- 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
- b. function comment
- c. block comment
- d. line comment

ANS: D PTS: 1 REF: 57

15. A(n) \_\_\_\_ is an acceptable value for a data type.

- a. primitive value
- b. literal
- c. built-in value
- 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`
- b. `unsigned char`
- c. `bool`
- 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()`
- b. `sizeof()`
- c. `length()`
- 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
- b. integer
- c. `long int`
- 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