

Starting Out with C++ from Control Structures to Objects, 9e (Gaddis)

Chapter 2 Introduction to C++

TRUE/FALSE

1. The preprocessor reads a program before it is compiled and only executes those lines beginning with # symbol.

ANS: T

2. Because C++ is case-sensitive, all programs must have a function called **main** or **Main**.

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. A value is stored in a variable with an assignment statement.

ANS: T

7. Programming style refers to the way a programmer uses elements such as identifiers, spaces, and blank lines.

ANS: T

8. When typing your source code into the computer, you should be careful since most of your C++ instructions, header files, and variable names are case sensitive.

ANS: T

9. In C++ you are required to name your variables so they indicate the purpose they will be used for.

ANS: F

10. Escape sequences are always stored internally as a single character.

ANS: T

11. Floating point constants are normally stored in memory as doubles.

ANS: T

12. C++ does not have a built-in data type for storing strings of data.

ANS: T

13. A named constant is like a variable, but its content cannot be changed while the program is running.

ANS: T

14. C++ 11 introduced an alternative way to define variables, using the **template** key word and an initialization value.

ANS: F

MULTIPLE CHOICE

1. In a C++ program, two slash marks (//) indicate

- a. the end of a statement
- b. the beginning of a comment
- c. the end of a program
- d. the beginning of a block of code
- e. None of these

ANS: B

2. A statement that starts with a hashtag (or pound) symbol (#) is called a

- a. comment
- b. function
- c. preprocessor directive
- d. header file
- e. None of these

ANS: C

3. For every opening brace ({) in a C++ program, there must be a

- a. string literal
- b. function
- c. comment
- d. closing brace
- e. None of these

ANS: D

4. The _____ is(are) used to display information on the computer's screen.

- a. opening and closing braces
- b. opening and closing quotation marks

- c. **cout** object
- d. backslash
- e. None of these

ANS: C

5. In the following statement, the characters **Hello!** are a(n)

```
cout << "Hello!";
```

- a. variable
- b. string literal
- c. comment
- d. object
- e. None of these

ANS: B

6. The _____ causes the content of another file to be inserted into a program.

- a. **cout** object
- b. double slash (//)
- c. **#include** directive
- d. semicolon (;)
- e. None of these

ANS: C

7. Which of the following must be included in any program that uses the **cout** object?

- a. opening and closing braces
- b. the header file **iostream**
- c. comments
- d. a namespace
- e. None of these

ANS: B

8. Character constants in C++ are always enclosed in

- a. brackets (< >)
- b. braces ({ })
- c. single quotation marks (' ')
- d. pound sign and semicolon (# ;)
- e. Any of these

ANS: C

9. Every complete C++ program must have a

- a. comment
- b. function named **main**
- c. symbolic constant
- d. **cout** statement
- e. None of these

ANS: B

10. In a **cout** statement, which of the following will advance the output position to the beginning of the next line?
- a. **endl** or **\n**
 - b. **endl** or **/n**
 - c. **\n** or **\t**
 - d. **\t** or **\b**
 - e. **** or **\'**

ANS: A

11. What will the following code display?

```
cout << "Monday" ;  
cout << "Tuesday" ;  
cout << "Wednesday" ;
```

- a. **Monday**
Tuesday
Wednesday
- b. **Monday Tuesday Wednesday**
- c. **MondayTuesdayWednesday**
- d. **"Monday"**
"Tuesday"
"Wednesday"
- e. **"Monday" "Tuesday" "Wednesday"**

ANS: C

12. What will the following code display?

```
int number = 23 ;  
cout << "The number is " << "number" << endl ;
```

- a. **The number is 23**
- b. **The number is23**
- c. **The number is number**
- d. **The number is null**
- e. **The number is**

ANS: C

13. What will the following code display?

```
cout << "Four\n" << "score\n" ;  
cout << "and" << "\nseven" ;  
cout << "\nyears" << " ago" << endl ;
```

- a. **Four**
score
and
seven
years ago
- b. **Four score and seven**
years ago
- c. **Four**
score

- and seven
years ago
- d. Four score
and seven
years ago

ANS: A

14. What will the following code display?

```
cout << "Roses " << "are red";  
cout << "and " << "violets/n"  
cout << "are" << "blue" << endl;
```

- a. Roses are red
and violets
are blue
- b. Roses are red and violets/nare blue
- c. Roses are redand violets/nareblue
- d. Roses are red and violets/n are blue

ANS: C

15. Which control sequence is used to skip over to the next horizontal tab stop?

- a. `\n`
- b. `endl`
- c. `\t`
- d. `\b`
- e. `\'`

ANS: C

16. A(n) _____ represents a storage location in the computer's memory.

- a. literal
- b. variable
- c. comment
- d. integer
- e. None of these

ANS: B

17. Data items whose values do not change while the program is running are

- a. literals
- b. variables
- c. characters
- d. integers
- e. None of these

ANS: A

18. A variable definition tells the computer

- a. the variable's name and its value
- b. the variable's data type and its value
- c. the variable's name and the type of data it will hold
- d. whether the variable is an integer or a floating-point number

e. None of these

ANS: C

19. You must have a _____ for every variable you intend to use in a program.

- a. purpose
- b. variable definition
- c. memory space
- d. literal value
- e. None of these

ANS: B

20. Which of the following is *not* a valid C++ identifier?

- a. **April2018**
- b. **employee_number**
- c. **_luser**
- d. **luser**
- e. **theLittleBrownFoxWhoRanAway**

ANS: D

21. What will the following code display?

```
int x = 23, y = 34, z = 45;  
cout << x << y << z << endl;
```

- a. **23 34 45**
- b. **23**
34
45
- c. **xyz**
- d. **233445**

ANS: D

22. The numeric data types in C++ can be broken into two general categories which are

- a. numbers and characters
- b. singles and doubles
- c. integers and floating-point numbers
- d. real and unreal numbers
- e. numbers and literals

ANS: C

23. Besides the decimal number system that is most common (base 10), two other number systems that can be used in C++ programs are

- a. octal and fractal
- b. octal and hexadecimal
- c. base 2 and base 4
- d. base 2 and binary
- e. None of these

ANS: B

24. A character literal is _____, whereas a string literal is _____
- enclosed in quotation marks, enclosed in brackets
 - enclosed in brackets, enclosed in quotation marks
 - enclosed in double quotation marks, enclosed in single quotation marks
 - enclosed in single quotation marks, enclosed in double quotation marks
 - None of these

ANS: D

25. Which data type typically requires only one byte of storage?
- short**
 - int**
 - float**
 - char**
 - string**

ANS: D

26. In C++11, if you want an integer literal to be treated as a **long long int**, you can append _____ at the end of the number.
- L**
 - <L L>**
 - LONG LONG**
 - LL**
 - <LONG>**

ANS: D

27. The data type used to declare variables that can hold real numbers is
- short**
 - int**
 - float**
 - char**
 - double**

ANS: C

28. The **float** data type is considered _____ precision and the **double** data type is considered _____ precision.
- single, double
 - double, single
 - floating-point, double
 - floating-point, integer
 - None of these

ANS: A

29. Which of the following statements correctly assigns the character **M** to the variable named **letter**?
- letter = M**
 - letter = "M" ;**
 - letter = 'M' ;**
 - letter = (M) ;**

e. **letter = M;**

ANS: C

30. Which of the following lines *must* be included in a program that has string variables?

- a. **#include (string class)**
- b. **#include namespace std;**
- c. **#include <string>**
- d. **string var;**
- e. None of these

ANS: C

31. Assuming that a program has the following **string** object definition, which statement correctly assigns the string literal "Jane" to the **string** object?

string name;

- a. **name = Jane;**
- b. **name = 'Jane';**
- c. **name = "Jane";**
- d. **name = <Jane>;**
- e. **string name = {Jane};**

ANS: C

32. In memory, C++ automatically places a(n) _____ at the end of string literals which _____.

- a. semicolon, indicates the end of the statement
- b. **\n**, indicates an escape sequence
- c. null terminator, marks the end of the string
- d. bracket, marks the end of the string
- e. None of these

ANS: C

33. Which of the following defines a double-precision floating-point variable named **payCheck**?

- a. **float payCheck;**
- b. **double payCheck;**
- c. **payCheck double;**
- d. **Double payCheck;**

ANS: B

34. The data type of a variable whose value can be either **true** or **false** is

- a. **int**
- b. **binary**
- c. **bool**
- d. **Boolean**
- e. **T/F**

ANS: C

35. What will be the output after the following lines of code execute?

bool choice;

```
choice = true;
cout << "Your choice is " << choice << endl;
```

- a. **true**
- b. **Your choice is true**
- c. **Your choice is 1**
- d. **Your choice is choice**
- e. None of these

ANS: C

36. Using C++11: What data type does the compiler determine for the variable **cost** in the following statement?

```
auto cost = 14.95;
```

- a. **int**
- b. **double**
- c. **bool**
- d. **char**
- e. **string**

ANS: B

37. A variable's _____ is the part of the program that has access to the variable.

- a. data type
- b. value
- c. scope
- d. assignment
- e. None of these

ANS: C

38. What is the value stored in the variable **myNum** after the following assignment statement executes?

```
myNum = 23 % 5
```

- a. **3**
- b. **4**
- c. **4.6**
- d. **115**
- e. None of these

ANS: A

39. What is the value of **cookies** after the following statements execute?

```
int number = 38, children = 4, cookies;
cookies = number % children;
```

- a. **2**
- b. **4**
- c. **9**
- d. **9.5**
- e. **.5**

ANS: A

40. What is the value of **number** after the following statements execute?

```
int number;  
number = 18 / 4;
```

- a. 4.5
- b. 4
- c. 2
- d. 0
- e. unknown

ANS: B

41. What is the value of **number** after the following statements execute?

```
int number;  
number = 18 % 4 + 2;
```

- a. 3
- b. 4
- c. 6.5
- d. 0
- e. unknown

ANS: B

42. What is output of the following statement?

```
cout << 4 * (15 / (1 + 3)) << endl;
```

- a. 15
- b. 12
- c. 63
- d. 72
- e. None of these

ANS: B

43. Which part of the following line is ignored by the compiler?

```
double userName = "janedoe"; // user's name is janedoe
```

- a. "janedoe"
- b. user's name is
- c. user's name is janedoe
- d. //
- e. None of these

ANS: C

44. A multi-line comment

- a. begins with **/*** and ends with ***/**
- b. can be used to mark as many lines as desired as comments
- c. allows everything in the selected lines to be ignored
- d. All of these are true

ANS: D

45. Which of the following statements correctly defines a named constant named **TAX_RATE** that holds the value **0.075**?
- a. `double TAX_RATE = 0.075;`
 - b. `const TAX_RATE;`
`double TAX_RATE = 0.075;`
 - c. `const double TAX_RATE = 0.075;`
 - d. `double TAX_RATE;`
`const TAX_RATE = 0.075;`
 - e. `const TAX_RATE = 0.075;`

ANS: C

46. Given the following program, which line(s) cause(s) output to be displayed on the screen?

```
1 // This program displays my gross wages.
2 // I worked 40 hours and I make $20.00 per hour.
3 #include <iostream>
4 using namespace std;
5
6 int main()
7 {
8     int hours;
9     double payRate, grossPay;
10
11     hours = 40;
12     payRate = 20.0;
13     grossPay = hours * payRate;
14     cout << "My gross pay is $" << grossPay << endl;
15     return 0;
16 }
```

- a. lines 13 and 14
- b. lines 8 and 9
- c. line 14
- d. lines 14 and 15
- e. line 15

ANS: C

MULTIPLE RESPONSE

1. Select all that apply. Which of the following statements is(are) true about named constants?

- a. A named constant must be all uppercase.
- b. The content of a named constant is read-only.
- c. The value of a named constant cannot be changed while the program is running.
- d. A named constant is defined using the **const** qualifier.
- e. None of these

ANS: B, C, D

2. Select all that apply. Using C++11: Which of the following can be used to initialize an integer variable named **dozen** with the value of **12**?

- a. `int dozen = 12;`
- b. `int dozen(12);`

- c. `int dozen = {12};`
- d. `int dozen = (12);`
- e. `int dozen {12};`

ANS: A, B, E