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 it 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. **end1** 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. `end1`
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. **_1user**
d. **1user**
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 _____

    a. enclosed in quotation marks, enclosed in brackets
    b. enclosed in brackets, enclosed in quotation marks
    c. enclosed in double quotation marks, enclosed in single quotation marks
    d. enclosed in single quotation marks, enclosed in double quotation marks
    e. None of these

    ANS: D

25. Which data type typically requires only one byte of storage?

    a. **`short`**
    b. **`int`**
    c. **`float`**
    d. **`char`**
    e. **`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.

    a. **`L`**
    b. **`<L L>`**
    c. **`LONG LONG`**
    d. **`LL`**
    e. **`<LONG>`**

    ANS: D

27. The data type used to declare variables that can hold real numbers is

    a. **`short`**
    b. **`int`**
    c. **`float`**
    d. **`char`**
    e. **`double`**

    ANS: C

28. The **`float`** data type is considered _____ precision and the **`double`** data type is considered _____ precision.

    a. single, double
    b. double, single
    c. floating-point, double
    d. floating-point, integer
    e. None of these

    ANS: A

29. Which of the following statements correctly assigns the character **`M`** to the variable named **`letter`**?

    a. **`letter = M`**
    b. **`letter = "M";`**
    c. **`letter = 'M';`**
    d. **`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