**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