Starting Out with C++ from Control Structures to Objects, 8e **(Gaddis)**
Chapter 2 Introduction to C++

2.1 Multiple Choice Questions

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 the program
D) The beginning of a block of code
E) None of the above
Answer: B

2) A statement that starts with a # symbol is called a:
A) Comment
B) Function
C) Preprocessor directive
D) Key word
E) None of the above
Answer: C

3) For every opening brace in a C++ program, there must be a:
A) String literal
B) Function
C) Variable
D) Closing brace
E) None of the above
Answer: 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 the above
Answer: C

5) The _____ causes the contents of another file to be inserted into a program.
A) Backslash
B) Pound sign
C) Semicolon
D) `#include` directive
E) None of the above
Answer: D

6) _____ represent storage locations in the computer's memory.
A) Literals
B) Variables
C) Comments
D) Integers
E) None of the above
Answer: B

7) These are data items whose values do not change while the program is running.
A) Literals
B) Variables
C) Comments
D) Integers
E) None of the above
Answer: A

8) You must have a _____ for every variable you intend to use in a program.
A) purpose
B) definition
C) comment
D) constant
E) None of the above
Answer: B

9) Of the following, which is a valid C++ identifier?
A) `June1997`
B) `_employee_number`
C) `___department`
D) `myExtraLongVariableName`
E) All of the above are valid identifiers.
Answer: E

10) The numeric data types in C++ can be broken into two general categories:
A) numbers and characters
B) singles and doubles
C) integer and floating point
D) real and unreal
E) None of the above
Answer: C

11) Besides decimal, two other number systems you might encounter in C++ programs are:
A) Octal and Fractal
B) Hexadecimal and Octal
C) Unary and Quaternary
D) Base 7 and Base 9
E) None of the above
Answer: B

12) A character literal is enclosed in _____ quotation marks, whereas a string literal is enclosed in _____ quotation marks.
A) double, single
B) triple, double
C) open, closed
D) single, double
E) None of the above
Answer: D

13) In memory, C++ automatically places a _____ at the end of string literals.
A) Semicolon
B) Quotation marks
C) Null terminator
D) Newline escape sequence
E) None of the above
Answer: C

14) Which escape sequence causes the cursor to move to the beginning of the current line?
A) `\n`
B) `\t`
C) `\a`
D) `\b`
E) `\r`
Answer: E

15) What is the modulus operator?
A) `+`
B) `*`
C) `&`
D) `%`
E) `||`
Answer: D

16) Which data type typically requires only one byte of storage?
A) `short`
B) `int`
C) `float`
D) `char`
E) `double`
Answer: D

17) What is the output of the following statement?

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

A) 15
B) 12
C) 63
D) 72
E) None of these
Answer: B

18) In programming terms, a group of characters inside a set of quotation marks is called a(n):
A) String literal
B) Variable
C) Operation
D) Statement
E) None of the above
Answer: A

19) This is used to mark the end of a complete C++ programming statement.
A) Pound Sign
B) Semicolon
C) Data type
D) Void
E) None of the above
Answer: B

20) Which character signifies the beginning of an escape sequence?
A) `//`
B) `/`
C) `\`
D) #
E) `{`
Answer: C

21) _____ must be included in any program that uses the `cout` object.
A) Opening and closing braces
B) The header file `iostream`
C) Comments
D) Escape sequences
E) None of the above
Answer: B

22) If you use a C++ key word as an identifier, your program will:
A) Execute with unpredictable results
B) not compile
C) understand the difference and run without problems
D) Compile, link, but not execute
E) None of the above
Answer: B

23) What is the value of `cookies` after the execution of the following statements?

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

cookies = number % children;
```

A) 2
B) 0
C) 9
D) .5
E) None of these
Answer: A

24) This function in C++ allows you to identify how many bytes of storage on your computer system an integer data value requires.
A) `len`
B) `bytes`
C) `f(x)`
D) `int`
E) `sizeof`
Answer: E

25) Character constants in C++ are always enclosed in _____.
A) [brackets]
B) "double quotation marks"
C) 'single quotation marks'
D) {braces}
E) (parentheses)
Answer: C

26) These are used to declare variables that can hold real numbers.
A) Integer data types
B) Real data types
C) Floating point data types
D) Long data types
E) None of the above
Answer: C

27) The `float` data type is considered _____ precision, and the `double` data type is considered _____ precision.
A) `single`, `double`
B) `float`, `double`
C) `integer`, `double`
D) `short`, `long`
E) None of the above
Answer: A

28) A variable whose value can be either `true` or `false` is of this data type.
A) `binary`
B) `bool`
C) `T/F`
D) `float`
E) None of the above
Answer: B

29) Which of the following correctly consolidates the following declaration statements into one statement?

```
int x = 7;
int y = 16;
int z = 28;
```

A) `int x = 7; y = 16; z = 28;`
B) `int x = 7     y = 16     z = 28;`
C) `int x, y, z = 7, 16, 28`
D) `int x = 7, y = 16, z = 28;`
E) None of these will work.
Answer: D

30) A variable's _____ is the part of the program that has access to the variable.
A) data type
B) value
C) scope
D) reach
E) None of the above
Answer: C

31) Every complete C++ program must have a _____.
A) comment
B) function named `main`
C) preprocessor directive
D) symbolic constant
E) `cout` statement
Answer: B

32) This control sequence is used to skip over to the next horizontal tab stop.
A) `\n`
B) `\h`
C) `\t`
D) `\a`
E) `\'`
Answer: C

33) Which one of the following would be an illegal variable name?
A) `dayOfWeek`
B) `3dGraph`
C) `_employee_num`
D) `June1997`
E) `itemsorderedforthemonth`
Answer: B

34) Look at the following program and answer the question that follows it.

```
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 }
```

Which line(s) in this program cause output to be displayed on the screen?
A) 13 and 14
B) 8 and 9
C) 14
D) 13
E) 15
Answer: C

35) 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;`
Answer: B

36) 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"
```
Answer: C

37) What will the following code display?

```
int number = 7;

cout << "The number is " << "number" << endl;
```

A) `The number is 7`
B) `The number is number`
C) `The number is7`
D) `The number is 0`
Answer: B

38) What will the following code display?

```
int x = 0, y = 1, z = 2;

cout << x << y << z << endl;
```

A) `0  1  2`

B)
```
0
1
2
```

C) `xyz`

D) `012`

Answer: D

39) 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
```

Answer: A

40) What will the following code display?

```
cout << "Four " << "score ";
cout << "and " << "seven/n";
cout << "years" << "ago" << endl;
```

A)
```
Four score and seven
yearsago
```

B)
```
Four score and seven
years ago
```

C)
```
Four score and seven/nyearsago
```

D)
```
Four
score
and
seven
yearsago
```

Answer: C

41) What will the following code display?

```
cout << "Four" << "score" << endl;
cout << "and" << "seven" << endl;
cout << "years" << "ago" << endl;
```

A)
```
Four
score
and
seven
years
ago
```

B)
```
Four score and seven years ago
```

C)
```
Fourscoreandsevenyearsago
```

D)
```
Fourscore
andseven
yearsago
```

Answer: D

42) Assume that a program has the following variable definition:

```
char letter;
```

Which of the following statements correctly assigns the character Z to the variable?
A) `letter = Z;`
B) `letter = "Z";`
C) `letter = 'Z';`
D) `letter = (Z);`
Answer: C

43) What will the value of `x` be after the following statements execute?

```
int x;

x = 18 / 4;
```

A) 4.5
B) 4
C) 0
D) unknown
Answer: B

44) What will the value of `x` be after the following statements execute?

```
int x;

x = 18.0 / 4;
```

A) 4.5
B) 4
C) 0
D) unknown
Answer: A

45) What will the value of `x` be after the following statements execute?

```
int x;

x = 18 % 4;
```

A) 0.45
B) 4
C) 2
D) unknown
Answer: C

46) Assuming you are using a system with 1-byte characters, how many bytes of memory will the following string literal occupy?

```
"William"
```

A) 7
B) 14
C) 8
D) 1
Answer: C

47) The first step in using the `string` class is to `#include` the _____ header file.
A) `iostream`
B) `cctype`
C) `cmath`
D) `string`
E) None of the above
Answer: D

48) Assume that a program has the following `string` object definition:

```
string name;
```

Which of the following statements correctly assigns a string literal to the `string` object?
A) `name = Jane;`
B) `name = "Jane";`
C) `name = 'Jane';`
D) `name = (Jane);`
Answer: B

49) 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) `<INT>`
C) `I`
D) `LL`
E) None of the above
Answer: D

50) In C++ 11, the _____ tells the compiler to determine the variable's data type from the initialization value.
A) `auto` key word
B) `#include` preprocessor directive
C) variable's name
D) `dynamic_cast` key word
E) None of the above
Answer: A

2.2 True/False Questions

1) True/False: When typing in your source code into the computer, you must be very careful since most of your C++ instructions, header files, and variable names are case sensitive.
Answer: TRUE

2) True/False: A preprocessor directive does not require a semicolon at the end.
Answer: TRUE

3) True/False: The C++ language requires that you give variables names that indicate what the variables are used for.
Answer: FALSE

4) True/False: A variable called "average" should be declared as an integer data type because it will probably hold data that contains decimal places.
Answer: FALSE

5) True/False: Escape sequences are always stored internally as a single character.
Answer: TRUE

6) True/False: Floating point constants are normally stored in memory as doubles.
Answer: TRUE

7) True/False: C++ does not have a built in data type for storing strings of characters.
Answer: TRUE

8) True/False: If you do not follow a consistent programming style, your programs will generate compiler errors.
Answer: FALSE

9) True/False: When writing long integer literals or long long integer literals in C++ 11, you can use either an uppercase or lowercase L.
Answer: TRUE

10) True/False: C++ 11 introduces an alternative way to define variables, using the `template` key word and an initialization value.
Answer: FALSE