

***Engineering Problem Solving With C++ 4th edition
Etter Test Bank***

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1. Match each of the following data types with literal constants of that data type. A data type can be used more than once.

A. integer	<u> B </u>	1.427E3
B. double	<u> D </u>	"Oct"
C. character	<u> B </u>	-63.29
D. string	<u> F </u>	#Hashtag
E. boolean	<u> C </u>	'+'
F. none of the above.	<u> A </u>	-85
	<u> E </u>	true
	<u> C </u>	'\"'

2. For each of the following determine if it is a valid identifier, and if it is not state why.

A. House#	not valid, # is not allowed in identifier
B. 2nd	not valid, identifiers must start with letter or underscore not a number
C. WHILE	valid
D. num4	valid
E. double	not valid, double is a keyword
F. last_name	valid

3. Evaluate the following expressions

A. $(4 - 7) * 3$	-9
B. $14 \% 4$	2
C. $24 / 9$	2
D. $6.72 / 4.2$	1.6
E. $2 + 8 * 3 + 7$	33

4. What is the output of the following program.

```
#include <iostream>
#include <iomanip>
using namespace std;
int main ()
{   int hr, min;
    hr = 1;
    min = 50;
    cout << "The exam is over at " << hr << ":" << min << endl;
    cout << "One down\n " << "two to go!";
    return 0;
}
```

The exam is over at 1:50
One down
two to go!

5. What is the output of the following program

```
#include <iostream>
#include <iomanip>
using namespace std;
int main()
{   int WholeNumber;
    double Real1, Real2;
    WholeNumber = 76;
    Real1 = 3.167;
    Real2 = -24.103;
    cout << setw(6) << WholeNumber << endl;
    cout << setiosflags(ios::fixed);
    cout << setprecision(2) << Real1 << ", " << Real2 << endl;
    cout << setiosflags(ios::showpoint) << Real2 << 8.376 << endl;
    return 0;
}
```

```
      76
3.17, -24.10
-24.108.38
```

6. Which of the following are valid on the left side of an assignment operator?
- A. A numeric constant
 - B. An expression such as 8*6
 - C. A declared constant
 - ☒ D. A variable
 - E. All of the above are valid on the left side of an assignment operator.
7. Which of the following are valid on the right side of an assignment operator?
- A. A numeric constant
 - B. An expression such as 8*6
 - C. A declared constant
 - D. A variable
 - ☒ E. All of the above are valid on the right side of an assignment operator.
8. The operator >> is used to
- ☒ A. Extract a value from the input stream and assign it to a variable
 - B. Take a value from a variable and place it into the output stream
 - C. Perform integer division and produce the remainder of the division
 - D. Specify that the left hand operand is much larger than the right hand operand.
9. The file which must appear in a #include preprocessor statement if you are using the fabs function is ...
- A. iostream
 - B. iomanip
 - ☒ C. cmath
 - D. string

10. Which of the following is not a data type used to represent a floating point value
- A. float
 - B. double
 - C. long double
 - ☒ D. short
11. Which of the following is not a syntactically correct declaration?
- A. int number(12);
 - ☒ B. double value1(4.5); value2(3.7);
 - C. double tax_percent =0.06;
 - D. double x{0.0};
 - E. int x,y,z;
12. Which of the following operators is the increment operator
- A. +=
 - B. +
 - C. %
 - ☒ D. ++
13. Which output flag is set to guarantee that a decimal point will be printed when printing a floating point value?
- A. fixed
 - ☒ B. showpoint
 - C. precision
 - D. setw
14. Function arguments are ...
- A. the term used for the name of the function
 - B. the term that refers to the value returned by a function
 - ☒ C. the term that refers to the values passed to the function when the function is invoked.
 - D. the term that refers to a function invocation.
15. Which of the following function invocations is an approximation of PI
- A. atan(-1);
 - ☒ B. acos(-1);
 - C. sin(-1);
 - D. cos(-1);
16. Line comments begin with // and run for the rest of the line
- ☒ A. true
 - B. false
17. The purpose of a comment is to help the compiler understand your program and create efficient object code.
- A. true
 - ☒ B. false

18. The math function `sin` will compute sine when given the angle in degrees
- A. true
 - ☒ B. false
19. The `setw` manipulator is used to set the field width for all values that are printed until another `setw` manipulator is encountered.
- A. true
 - ☒ B. false
20. The preprocessor directive `#include <iostream>` copies the file `iostream` into the program before compilation, so that the program can use input and output objects and operators.
- ☒ A. true
 - B. false
21. The operand of the increment operator may be either a declared constant or a variable.
- A. true
 - ☒ B. false
22. The math function `tan` will compute tangent when the angle is given in radians.
- ☒ A. true
 - B. false
23. In a case sensitive language, such as C++, the variables **apples** and **APPLES** refer to different storage locations.
- ☒ A. true
 - B. false
24. An expression involving operators can appear after the output operator `<<` in a `cout` statement.
- ☒ A. true
 - B. false
25. The precision of a floating point number is determined by the number of bits used to represent the exponent.
- ☒ A. true
 - B. false
26. Given the declaration `auto i = 0;` `i` is declared as an `int`.
- ☒ A. True
 - B. False
27. Given the declaration `auto i = 1.0;` `i` is declared as type `double`.
- ☒ A. True
 - B. False

28. C++ is a strongly typed programming language.
☒ A. True
B. False
C.
29. Symbolic constants in C++ are declared with the modifier const; attempting to change the value of a symbolic constant will be flagged as a syntax error by the compiler.
☒ A. True
B. False
30. Class declarations specify a programmer-defined type/object.
☒ A. True
B. False
31. Class members may include data (attributes) and methods (functions).
☒ A. True
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32. Which of the following visibilities may be used to control access to class members:
A. public
B. protected
C. private
☒ D. All of these are visibilities used to control access to class members.
33. Class attributes define the operations that may be performed on class objects.
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34. Constructors are special methods of a class that are executed when objects of the class type are created.
☒ A. True
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35. Constructors must have the same name as the class
☒ A. True
B. False
36. There must be exactly one constructor defined in every class.
☐ A. True
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37. Once a class is defined, you may use the class as a type specifier.
☒ A. True
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